

SDS BOOK

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SDS BOOK



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Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier

3M(TM) Fire Barrier Sealant FD 150+, Limestone

Product Identification Numbers

98-0400-5641-2, 98-0400-5642-0, 98-0400-5643-8, 98-0400-5644-6

1.2. Recommended use and restrictions on use

Recommended use

Passive Fire Protection

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Industrial Adhesives and Tapes Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification

Skin Corrosion/Irritation: Category 2.

Carcinogenicity: Category 1A.

Specific Target Organ Toxicity (single exposure): Category 1.

2.2. Label elements

Signal word

Danger

Symbols

Exclamation mark | Health Hazard |

Pictograms

**Hazard Statements**

Causes skin irritation.

May cause cancer.

Causes damage to organs:

cardiovascular system |

nervous system |

kidney/urinary tract |

respiratory system |

Precautionary Statements**General:**

Keep out of reach of children.

If medical advice is needed, have product container or label at hand.

Prevention:

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust/fume/gas/mist/vapors/spray.

Wear protective gloves.

Do not eat, drink or smoke when using this product.

Wash thoroughly after handling.

Response:

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

IF exposed: Call a POISON CENTER or doctor/physician.

Specific treatment (see Notes to Physician on this label).

Storage:

Store locked up.

Disposal:

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

Notes to Physician:

This product contains ethylene glycol. If there is reasonable suspicion of ethylene glycol poisoning, intravenous (IV) administration with either fomepizole (preferred) or ethanol (if fomepizole is unavailable) should be considered as part of the medical management.

2.3. Hazards not otherwise classified

None.

11% of the mixture consists of ingredients of unknown acute oral toxicity.

11% of the mixture consists of ingredients of unknown acute dermal toxicity.

9% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Calcium Carbonate	1317-65-3	30 - 60 Trade Secret *
Polymer NJTS Reg. No. 04499600-7186	Trade Secret*	10 - 30 Trade Secret *
Acrylic Emulsion	70677-00-8	5 - 10 Trade Secret *
Mineral Spirits	64742-88-7	5 - 10 Trade Secret *
Water	7732-18-5	5 - 10 Trade Secret *
Ethylene Glycol	107-21-1	1 - 5 Trade Secret *
Plasticizer	27138-31-4	1 - 5 Trade Secret *
Titanium Dioxide	13463-67-7	1 - 5 Trade Secret *
Surfactant	Trade Secret*	< 2 Trade Secret *
Ethyl Hydroxyethyl Cellulose	9004-58-4	0.5 - 1.5 Trade Secret *
Quartz Silica	14808-60-7	< 0.2 Trade Secret *

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

This product contains ethylene glycol. If there is reasonable suspicion of ethylene glycol poisoning, intravenous (IV) administration with either fomepizole (preferred) or ethanol (if fomepizole is unavailable) should be considered as part of the medical management.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Use a fire fighting agent suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

Hazardous Decomposition or By-Products

Substance

Carbon monoxide
Carbon dioxide

Condition

During Combustion
During Combustion

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Keep out of reach of children. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities

Keep cool. Store away from oxidizing agents. Store away from areas where product may come into contact with food or pharmaceuticals. Store in a dry place.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits**

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Ethylene Glycol	107-21-1	ACGIH	CEIL(as aerosol):100 mg/m3	A4: Not class. as human carcin
Calcium Carbonate	1317-65-3	OSHA	TWA(as total dust):15 mg/m3;TWA(respirable fraction):5 mg/m3	
Titanium Dioxide	13463-67-7	ACGIH	TWA:10 mg/m3	A4: Not class. as human carcin
Titanium Dioxide	13463-67-7	OSHA	TWA(as total dust):15 mg/m3	
Quartz Silica	14808-60-7	ACGIH	TWA(respirable fraction):0.025 mg/m3	A2: Suspected human carcin.
Quartz Silica	14808-60-7	OSHA	TWA concentration(respirable):0.1	

			mg/m3(2.4 millions of particles/cu. ft.);TWA:0.05 mg/m3	
Kerosine (petroleum)	64742-88-7	ACGIH	TWA(as total hydrocarbon vapor, non-aerosol):200 mg/m3	A3: Confirmed animal carcin., SKIN

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

None required.

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.

Gloves made from the following material(s) are recommended: Nitrile Rubber

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Solid
Specific Physical Form:	Paste
Odor, Color, Grade:	Gray paste with low odor
Odor threshold	No Data Available
Melting point	No Data Available
Flash Point	Flash point > 93 °C (200 °F)
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	Not Applicable
Flammable Limits(UEL)	Not Applicable
Density	1.45 g/cm3
Specific Gravity	1.45 [Ref Std: WATER=1]
Solubility- non-water	No Data Available

Autoignition temperature

Not Applicable

Decomposition temperature

No Data Available

Molecular weight

No Data Available

Volatile Organic Compounds

< 15 % weight

VOC Less H2O & Exempt Solvents

< 250 g/l

SECTION 10: Stability and reactivity

10.1. Reactivity

This material is considered to be non reactive under normal use conditions.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Strong oxidizing agents

10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

Skin Contact:

Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain.

Eye Contact:

Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May cause additional health effects (see below).

Additional Health Effects:**Single exposure may cause target organ effects:**

Cardiac Effects: Signs/symptoms may include irregular heartbeat (arrhythmia), changes in heart rate, damage to heart muscle, heart attack, and may be fatal.

Neurological Effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and/or changes in blood pressure and heart rate.

Respiratory Effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish colored skin (cyanosis), sputum production, changes in lung function tests, and/or respiratory failure.

Kidney/Bladder Effects: Signs/symptoms may include changes in urine production, abdominal or lower back pain, increased protein in urine, increased blood urea nitrogen (BUN), blood in urine, and painful urination.

Carcinogenicity:

Contains a chemical or chemicals which can cause cancer.

Ingredient	CAS No.	Class Description	Regulation
SILICA, CRYSTAL AIRRESP	14808-60-7	Known human carcinogen	National Toxicology Program Carcinogens
Quartz Silica	14808-60-7	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
Titanium Dioxide	13463-67-7	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE > 5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE > 50 mg/l
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg
Calcium Carbonate	Dermal	Rat	LD50 > 2,000 mg/kg
Calcium Carbonate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 3 mg/l
Calcium Carbonate	Ingestion	Rat	LD50 6,450 mg/kg
Polymer NJTS Reg. No. 04499600-7186	Dermal		LD50 estimated to be > 5,000 mg/kg
Polymer NJTS Reg. No. 04499600-7186	Ingestion	Rat	LD50 > 2,000 mg/kg
Mineral Spirits	Inhalation-Vapor		LC50 estimated to be 20 - 50 mg/l
Mineral Spirits	Dermal	Rabbit	LD50 > 3,000 mg/kg
Mineral Spirits	Ingestion	Rat	LD50 > 5,000 mg/kg
Plasticizer	Dermal	Rat	LD50 > 2,000 mg/kg
Plasticizer	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 200 mg/l
Plasticizer	Ingestion	Rat	LD50 3,295 mg/kg
Titanium Dioxide	Dermal	Rabbit	LD50 > 10,000 mg/kg
Titanium Dioxide	Inhalation-	Rat	LC50 > 6.82 mg/l

	Dust/Mist (4 hours)		
Titanium Dioxide	Ingestion	Rat	LD50 > 10,000 mg/kg
Ethylene Glycol	Ingestion	Human	LD50 1,600 mg/kg
Ethylene Glycol	Inhalation- Dust/Mist (4 hours)	Other	LC50 estimated to be 5 - 12.5 mg/l
Ethylene Glycol	Dermal	Rabbit	9,530 mg/kg
Ethyl Hydroxyethyl Cellulose	Dermal		LD50 estimated to be > 5,000 mg/kg
Ethyl Hydroxyethyl Cellulose	Ingestion	Rat	LD50 > 10,000 mg/kg
Quartz Silica	Dermal		LD50 estimated to be > 5,000 mg/kg
Quartz Silica	Ingestion		LD50 estimated to be > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Calcium Carbonate	Rabbit	No significant irritation
Polymer NJTS Reg. No. 04499600-7186	Rabbit	Minimal irritation
Mineral Spirits	Rabbit	Irritant
Plasticizer	Rabbit	No significant irritation
Titanium Dioxide	Rabbit	No significant irritation
Ethylene Glycol	Rabbit	Minimal irritation
Ethyl Hydroxyethyl Cellulose	Professional judgement	Minimal irritation
Quartz Silica	Professional judgement	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Calcium Carbonate	Rabbit	No significant irritation
Polymer NJTS Reg. No. 04499600-7186	Professional judgement	Mild irritant
Mineral Spirits	Rabbit	No significant irritation
Plasticizer	Rabbit	No significant irritation
Titanium Dioxide	Rabbit	No significant irritation
Ethylene Glycol	Rabbit	Mild irritant
Ethyl Hydroxyethyl Cellulose	Professional judgement	Mild irritant

Skin Sensitization

Name	Species	Value
Mineral Spirits	Guinea pig	Not sensitizing
Plasticizer	Guinea pig	Not sensitizing
Titanium Dioxide	Human and animal	Not sensitizing
Ethylene Glycol	Human	Some positive data exist, but the data are not sufficient for classification

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
Mineral Spirits	In vivo	Not mutagenic
Mineral Spirits	In Vitro	Some positive data exist, but the data are not sufficient for classification
Plasticizer	In Vitro	Not mutagenic
Titanium Dioxide	In Vitro	Not mutagenic
Titanium Dioxide	In vivo	Not mutagenic
Ethylene Glycol	In Vitro	Not mutagenic
Ethylene Glycol	In vivo	Not mutagenic
Quartz Silica	In Vitro	Some positive data exist, but the data are not sufficient for classification
Quartz Silica	In vivo	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Mineral Spirits	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Mineral Spirits	Inhalation	Human and animal	Some positive data exist, but the data are not sufficient for classification
Titanium Dioxide	Ingestion	Multiple animal species	Not carcinogenic
Titanium Dioxide	Inhalation	Rat	Carcinogenic
Ethylene Glycol	Ingestion	Multiple animal species	Not carcinogenic
Quartz Silica	Inhalation	Human and animal	Carcinogenic

Reproductive Toxicity**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
Calcium Carbonate	Ingestion	Not toxic to development	Rat	NOAEL 625 mg/kg/day	prematuring & during gestation
Mineral Spirits	Inhalation	Not toxic to development	Rat	NOAEL 2.4 mg/l	during organogenesis
Plasticizer	Ingestion	Not toxic to female reproduction	Rat	NOAEL 500 mg/kg/day	2 generation
Plasticizer	Ingestion	Not toxic to male reproduction	Rat	NOAEL 400 mg/kg/day	2 generation
Plasticizer	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 1,000 mg/kg/day	during gestation
Ethylene Glycol	Dermal	Some positive developmental data exist, but the data are not sufficient for classification	Mouse	NOAEL 3,549 mg/kg/day	during organogenesis
Ethylene Glycol	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Mouse	LOAEL 750 mg/kg/day	during organogenesis
Ethylene Glycol	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Mouse	NOAEL 1,000 mg/kg/day	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Calcium Carbonate	Inhalation	respiratory system	All data are negative	Rat	NOAEL 0.812 mg/l	90 minutes
Mineral Spirits	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Mineral Spirits	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Mineral Spirits	Inhalation	nervous system	Some positive data exist, but the data are not sufficient for classification	Dog	NOAEL 6.5 mg/l	4 hours
Mineral Spirits	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgment	NOAEL Not available	
Ethylene Glycol	Ingestion	heart nervous system kidney and/or bladder respiratory system	Causes damage to organs	Human	NOAEL Not available	poisoning and/or abuse
Ethylene Glycol	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
Ethylene Glycol	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	poisoning and/or abuse

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Calcium Carbonate	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Mineral Spirits	Inhalation	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 4.6 mg/l	6 months
Mineral Spirits	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 1.9 mg/l	13 weeks
Mineral Spirits	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL 0.6 mg/l	90 days
Mineral Spirits	Inhalation	bone, teeth, nails, and/or hair blood liver muscles	All data are negative	Rat	NOAEL 5.6 mg/l	12 weeks
Mineral Spirits	Inhalation	heart	All data are negative	Multiple animal species	NOAEL 1.3 mg/l	90 days
Plasticizer	Ingestion	hematopoietic system liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 2,500 mg/kg/day	90 days
Titanium Dioxide	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 0.01 mg/l	2 years
Titanium Dioxide	Inhalation	pulmonary fibrosis	All data are negative	Human	NOAEL Not available	occupational exposure
Ethylene Glycol	Ingestion	kidney and/or bladder vascular system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 200 mg/kg/day	2 years
Ethylene Glycol	Ingestion	heart hematopoietic system liver immune system muscles	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,000 mg/kg/day	2 years
Ethylene Glycol	Ingestion	respiratory system	Some positive data exist, but the	Mouse	NOAEL	2 years

			data are not sufficient for classification		12,000 mg/kg/day	
Ethylene Glycol	Ingestion	skin endocrine system bone, teeth, nails, and/or hair nervous system eyes	All data are negative	Multiple animal species	NOAEL 1,000 mg/kg/day	2 years
Quartz Silica	Inhalation	silicosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure

Aspiration Hazard

Name	Value
Mineral Spirits	Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information**Ecotoxicological information**

Test Organism	Test Type	Result
Water flea, Ceriodaphnia dubia	48 hours Effect Level 50%	96.5 mg/l

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations**13.1. Disposal methods**

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information**15.1. US Federal Regulations**

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
Ethylene Glycol	107-21-1	Trade Secret 1 - 5

15.2. State Regulations

Contact 3M for more information.

California Proposition 65

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>Classification</u>
SILICA, CRYSTALLINE (AIRBORNE PARTICLES OF RESPIRABLE SIZE)	None	Carcinogen
Carbon Black	1333-86-4	Carcinogen
Ethylene Glycol	107-21-1	Developmental Toxin
Titanium Dioxide	13463-67-7	Carcinogen

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

WARNING: This product contains a chemical known to the State of California to cause cancer.

15.3. Chemical Inventories

The components of this product are in compliance with the new substance notification requirements of CEPA.

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 2 **Flammability:** 1 **Instability:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Document Group:	26-6409-2	Version Number:	6.01
Issue Date:	11/07/16	Supersedes Date:	08/19/14

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Safety Data Sheet

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Document Group:	09-5451-1	Version Number:	26.01
Issue Date:	08/16/16	Supersedes Date:	06/20/14

SECTION 1: Identification

1.1. Product identifier

3M Brand Fire Barrier CP-25WB+

Product Identification Numbers

ID Number	UPC	ID Number	UPC
42-0016-4710-8		42-0016-4715-7	
42-0016-4716-5		98-0400-5380-7	00-51115-11639-1
98-0400-5381-5	00-51115-11640-7	98-0400-5382-3	00-51115-11641-4
98-0400-5383-1	00-51115-11642-1	98-0400-5406-0	00-51115-16515-3
98-0400-5456-5		98-0400-5562-0	000-51115-11642-1
98-0400-5573-7	000-51115-16515-3	98-0400-5610-7	
98-0400-5629-7			

1.2. Recommended use and restrictions on use

Recommended use

Fire Protection, Used as Firestop in buildings.

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Industrial Adhesives and Tapes Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification

Serious Eye Damage/Irritation: Category 2B.

2.2. Label elements

Signal word

Warning

Symbols

Not applicable

Pictograms

Not applicable

Hazard Statements

Causes eye irritation.

Precautionary Statements

General:

Keep out of reach of children.

Prevention:

Wash thoroughly after handling.

Response:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

2.3. Hazards not otherwise classified

None.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Sodium Silicate	1344-09-8	10 - 30 Trade Secret *
Water	7732-18-5	10 - 30 Trade Secret *
Zinc Borate 2335	138265-88-0	10 - 30 Trade Secret *
Polymer (NJTS Reg. No. 04499600-7270)	Trade Secret*	10 - 30 Trade Secret *
Ethylhexyldiphenyl phosphate	1241-94-7	3 - 7 Trade Secret *
Iron oxide	1309-37-1	1 - 5 Trade Secret *
Oxide glass chemicals	65997-17-3	1 - 5 Trade Secret *
Polyethylene Glycol	25322-68-3	1 - 5 Trade Secret *
Di-2-ethylhexylphenyl phosphate	16368-97-1	< 1.0 Trade Secret *
Polyoxyethylene monooctylphenyl ether	9036-19-5	< 1.0 Trade Secret *
Triphenyl phosphate	115-86-6	< 1.0 Trade Secret *
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	55965-84-9	< 0.001 Trade Secret *

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye Contact:

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Not applicable

SECTION 5: Fire-fighting measures**5.1. Suitable extinguishing media**

Non-combustible. Use a fire fighting agent suitable for surrounding fire.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Avoid eye contact. Keep out of reach of children. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment.

7.2. Conditions for safe storage including any incompatibilities

Keep cool. Store away from heat. Store away from areas where product may come into contact with food or pharmaceuticals. Store in a dry place.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits**

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Triphenyl phosphate	115-86-6	ACGIH	TWA:3 mg/m3	A4: Not class. as human carcin
Triphenyl phosphate	115-86-6	OSHA	TWA:3 mg/m3	
Iron oxide	1309-37-1	OSHA	TWA(as fume):10 mg/m3	
ROUGE	1309-37-1	OSHA	TWA(as total dust):15 mg/m3;TWA(respirable fraction):5 mg/m3	
Iron oxide	1309-37-1	ACGIH	TWA(respirable fraction):5 mg/m3	A4: Not class. as human carcin
Polyethylene Glycol	25322-68-3	AIHA	TWA(as particulate):10 mg/m3	
Oxide glass chemicals	65997-17-3	Manufacturer determined	TWA(as dust):10 mg/m3	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Indirect Vented Goggles

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.

Gloves made from the following material(s) are recommended: Butyl Rubber

Neoprene

Nitrile Rubber

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Solid
Specific Physical Form:	Paste
Odor, Color, Grade:	Red with negligible odor
Odor threshold	No Data Available
Melting point	No Data Available
Flash Point	No flash point
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	Not Applicable
Flammable Limits(UEL)	Not Applicable
Specific Gravity	1.35 [Ref Std: WATER=1]
Solubility in Water	Complete
Solubility- non-water	No Data Available
Autoignition temperature	Not Applicable
Decomposition temperature	No Data Available
Molecular weight	No Data Available
Volatile Organic Compounds	<=0.5 % weight [Test Method: tested per EPA method 24]
VOC Less H2O & Exempt Solvents	<=6 g/l [Test Method: tested per EPA method 24]

SECTION 10: Stability and reactivity

10.1. Reactivity

This material is considered to be non reactive under normal use conditions.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
Carbon monoxide	Not Specified
Carbon dioxide	Not Specified
Oxides of Phosphorus	Not Specified

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin Contact:

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Eye Contact:

Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Ingestion:

May be harmful if swallowed.

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE > 5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE 2,000 - 5,000 mg/kg
Polymer (NJTS Reg. No. 04499600-7270)	Dermal		LD50 estimated to be > 5,000 mg/kg
Polymer (NJTS Reg. No. 04499600-7270)	Ingestion	Rat	LD50 > 2,000 mg/kg
Zinc Borate 2335	Dermal	Rabbit	LD50 > 10,000 mg/kg
Zinc Borate 2335	Ingestion	Rat	LD50 > 10,000 mg/kg
Sodium Silicate	Dermal	Rabbit	LD50 > 4,640 mg/kg
Sodium Silicate	Ingestion	Rat	LD50 500 mg/kg
Ethylhexyldiphenyl phosphate	Dermal	Rabbit	LD50 > 7,940 mg/kg
Ethylhexyldiphenyl phosphate	Ingestion	Rat	LD50 > 24,000 mg/kg
Iron oxide	Dermal	Not available	LD50 3,100 mg/kg
Iron oxide	Ingestion	Not available	LD50 3,700 mg/kg
Polyethylene Glycol	Dermal	Rabbit	LD50 > 20,000 mg/kg
Polyethylene Glycol	Ingestion	Rat	LD50 32,770 mg/kg
Oxide glass chemicals	Dermal		LD50 estimated to be > 5,000 mg/kg
Oxide glass chemicals	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Polyoxyethylene mono-octylphenyl ether	Dermal	Rabbit	LD50 > 3,000 mg/kg
Polyoxyethylene mono-octylphenyl ether	Ingestion	Rat	LD50 > 500 mg/kg
Triphenyl phosphate	Dermal	Rabbit	LD50 > 7,900 mg/kg
Triphenyl phosphate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 50 mg/l
Triphenyl phosphate	Ingestion	Rat	LD50 > 3,000 mg/kg
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Dermal	Rabbit	LD50 87 mg/kg
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.33 mg/l
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Ingestion	Rat	LD50 40 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Polymer (NJTS Reg. No. 04499600-7270)	Rabbit	Minimal irritation
Sodium Silicate	Rabbit	Corrosive
Iron oxide	Rabbit	No significant irritation
Polyethylene Glycol	Rabbit	Minimal irritation
Oxide glass chemicals	Professional judgement	No significant irritation
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Rabbit	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Polymer (NJTS Reg. No. 04499600-7270)	Professional judgement	Mild irritant
Sodium Silicate	Rabbit	Corrosive
Iron oxide	Rabbit	No significant irritation
Polyethylene Glycol	Rabbit	Mild irritant
Oxide glass chemicals	Professional judgement	No significant irritation
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Rabbit	Corrosive

Skin Sensitization

Name	Species	Value
Sodium Silicate	Mouse	Not sensitizing
Iron oxide	Human	Some positive data exist, but the data are not sufficient for classification
Polyethylene Glycol	Guinea pig	Not sensitizing
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Human and animal	Sensitizing

Photosensitization

Name	Species	Value
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Human and animal	Not sensitizing

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
Sodium Silicate	In Vitro	Not mutagenic
Sodium Silicate	In vivo	Not mutagenic
Iron oxide	In Vitro	Not mutagenic
Polyethylene Glycol	In Vitro	Not mutagenic
Polyethylene Glycol	In vivo	Not mutagenic
Oxide glass chemicals	In Vitro	Some positive data exist, but the data are not sufficient for classification
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	In vivo	Not mutagenic

isothiazolone		
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Iron oxide	Inhalation	Human	Some positive data exist, but the data are not sufficient for classification
Polyethylene Glycol	Ingestion	Rat	Not carcinogenic
Oxide glass chemicals	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Dermal	Mouse	Not carcinogenic
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Ingestion	Rat	Not carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Sodium Silicate	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Mouse	NOAEL 200 mg/kg/day	during gestation
Polyethylene Glycol	Ingestion	Not toxic to female reproduction	Rat	NOAEL 1,125 mg/kg/day	during gestation
Polyethylene Glycol	Ingestion	Not toxic to male reproduction	Rat	NOAEL 5699 +/- 1341 mg/kg/day	5 days
Polyethylene Glycol	Not Specified	Some positive reproductive/developmental data exist, but the data are not sufficient for classification		NOEL N/A	
Polyethylene Glycol	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Mouse	NOAEL 562 mg/animal/day	during gestation
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Ingestion	Not toxic to female reproduction	Rat	NOAEL 10 mg/kg/day	2 generation
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Ingestion	Not toxic to male reproduction	Rat	NOAEL 10 mg/kg/day	2 generation
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Ingestion	Not toxic to development	Rat	NOAEL 15 mg/kg/day	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Sodium Silicate	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
Polyethylene Glycol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.008 mg/l	2 weeks
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Sodium Silicate	Ingestion	kidney and/or	Some positive data exist, but the	Dog	LOAEL	4 weeks

		bladder	data are not sufficient for classification		2,400 mg/kg/day	
Sodium Silicate	Ingestion	endocrine system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 804 mg/kg/day	3 months
Sodium Silicate	Ingestion	blood	All data are negative	Rat	NOAEL 804 mg/kg/day	3 months
Sodium Silicate	Ingestion	heart liver	All data are negative	Rat	NOAEL 1,259 mg/kg/day	8 weeks
Iron oxide	Inhalation	pulmonary fibrosis pneumoconiosis	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Polyethylene Glycol	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.008 mg/l	2 weeks
Polyethylene Glycol	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 5,640 mg/kg/day	13 weeks
Polyethylene Glycol	Ingestion	heart endocrine system hematopoietic system liver nervous system	All data are negative	Rat	NOAEL 5,640 mg/kg/day	13 weeks
Oxide glass chemicals	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL not available	occupational exposure

Aspiration Hazard

For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information**Ecotoxicological information**

<u>Test Organism</u>	<u>Test Type</u>	<u>Result</u>
Water flea, <i>Daphnia magna</i>	48 hours Aquatic Toxicity - Acute	27 mg/l
Green algae, <i>Pseudokirchneriella subcapitata</i>	72 hours Aquatic Toxicity - Chronic	2.6 mg/l

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations**13.1. Disposal methods**

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - No

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
Zinc Borate 2335 (ZINC COMPOUNDS)	138265-88-0	10 - 30

15.2. State Regulations

15.3. Chemical Inventories

The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the new substance notification requirements of CEPA.

The components of this material are in compliance with the China "Measures on Environmental Management of New Chemical Substance". Certain restrictions may apply. Contact the selling division for additional information.

The components of this material are in compliance with the provisions of the Korean Toxic Chemical Control Law. Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the chemical notification requirements of TSCA.

15.4. International Regulations

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 1 Flammability: 1 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification**Health: 2 Flammability: 1 Physical Hazard: 0 Personal Protection: X** - See PPE section.

Hazardous Material Identification System (HMIS® IV) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® IV ratings are to be used with a fully implemented HMIS® IV program. HMIS® is a registered mark of the American Coatings Association (ACA).

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Issue Date: 08/17/16

Version Number: 8.02
Supersedes Date: 02/17/16

SECTION 1: Identification

1.1. Product identifier

3M FireBarrier™ Sealant IC 15 WB+

Product Identification Numbers

42-0016-4768-6, 42-0016-4769-4, 42-0016-4770-2, 98-0400-5509-1, 98-0400-5510-9, 98-0400-5511-7, 98-0400-5512-5, 98-0400-5630-5

1.2. Recommended use and restrictions on use

Recommended use

Fire Barrier Sealant.

1.3. Supplier's details

MANUFACTURER: 3M
DIVISION: Industrial Adhesives and Tapes Division
ADDRESS: 3M Center, St. Paul, MN 55144-1000, USA
Telephone: 1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification

Serious Eye Damage/Irritation: Category 2B.

Carcinogenicity: Category 1A.

2.2. Label elements

Signal word

Danger

Symbols

Health Hazard |

Pictograms

**Hazard Statements**

Causes eye irritation.
May cause cancer.

Precautionary Statements**General:**

Keep out of reach of children.

Prevention:

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves.
Wash thoroughly after handling.

Response:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF exposed or concerned: Get medical advice/attention.

Storage:

Store locked up.

Disposal:

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.3. Hazards not otherwise classified

None.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Calcium Carbonate	1317-65-3	30 - 60 Trade Secret *
Water	7732-18-5	10 - 30 Trade Secret *
Polymer NJTS Reg. No. 04499600-7314	Trade Secret*	10 - 30 Trade Secret *
Sodium Silicate	1344-09-8	3 - 7 Trade Secret *
Zinc Borate 2335	138265-88-0	3 - 7 Trade Secret *
Fiberglass	65997-17-3	0.5 - 1.5 Trade Secret *
Quartz Silica	14808-60-7	< 0.5 Trade Secret *

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye Contact:

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

Hazardous Decomposition or By-Products**Substance**

Carbon monoxide

Carbon dioxide

Condition

During Combustion

During Combustion

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Keep out of reach of children. Do not handle until all safety precautions have been read and understood. Do not breathe

dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities

No special storage requirements.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Calcium Carbonate	1317-65-3	OSHA	TWA(as total dust):15 mg/m ³ ;TWA(respirable fraction):5 mg/m ³	
Quartz Silica	14808-60-7	OSHA	TWA concentration(respirable):0.1 mg/m ³ (2.4 millions of particles/cu. ft.);TWA:0.05 mg/m ³	
Quartz Silica	14808-60-7	ACGIH	TWA(respirable fraction):0.025 mg/m ³	A2: Suspected human carcin.
Fiberglass	65997-17-3	Manufacturer determined	TWA(as dust):10 mg/m ³	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Indirect Vented Goggles

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.

Gloves made from the following material(s) are recommended: Nitrile Rubber

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

General Physical Form:	Solid
Specific Physical Form:	Paste
Odor, Color, Grade:	Light yellow viscous paste with a mild odor
Odor threshold	<i>No Data Available</i>
Melting point	<i>No Data Available</i>
Boiling Point	<i>Not Applicable</i>
Flash Point	Flash point > 93 °C (200 °F)
Evaporation rate	<i>No Data Available</i>
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>
Vapor Pressure	<i>No Data Available</i>
Vapor Density	<i>No Data Available</i>
Specific Gravity	1.4 [Ref Std: WATER=1]
Solubility in Water	Moderate
Solubility- non-water	<i>No Data Available</i>
Autoignition temperature	<i>No Data Available</i>
Decomposition temperature	<i>No Data Available</i>
Molecular weight	<i>No Data Available</i>
Volatile Organic Compounds	<=20 % weight [Test Method: tested per EPA method 24]
VOC Less H2O & Exempt Solvents	<=4 g/l [Test Method: tested per EPA method 24]

SECTION 10: Stability and reactivity**10.1. Reactivity**

This material is considered to be non reactive under normal use conditions.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
------------------	------------------

None known.

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin Contact:

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Eye Contact:

Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Additional Health Effects:

Carcinogenicity:

Contains a chemical or chemicals which can cause cancer.

<u>Ingredient</u>	<u>CAS No.</u>	<u>Class Description</u>	<u>Regulation</u>
SILICA, CRYSTAL AIRRESP	14808-60-7	Known human carcinogen	National Toxicology Program Carcinogens
Generic: GLASS FILAMENTS	65997-17-3	Anticipated human carcinogen	National Toxicology Program Carcinogens
Quartz Silica	14808-60-7	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

<u>Name</u>	<u>Route</u>	<u>Species</u>	<u>Value</u>
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg
Calcium Carbonate	Dermal	Rat	LD50 > 2,000 mg/kg
Calcium Carbonate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 3 mg/l
Calcium Carbonate	Ingestion	Rat	LD50 6,450 mg/kg
Polymer NJTS Reg. No. 04499600-7314	Dermal		LD50 estimated to be > 5,000 mg/kg
Polymer NJTS Reg. No. 04499600-7314	Ingestion	Rat	LD50 > 2,000 mg/kg
Zinc Borate 2335	Dermal	Rabbit	LD50 > 10,000 mg/kg
Zinc Borate 2335	Ingestion	Rat	LD50 > 10,000 mg/kg

Sodium Silicate	Dermal	Rabbit	LD50 > 4,640 mg/kg
Sodium Silicate	Ingestion	Rat	LD50 500 mg/kg
Fiberglass	Dermal		LD50 estimated to be > 5,000 mg/kg
Fiberglass	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Quartz Silica	Dermal		LD50 estimated to be > 5,000 mg/kg
Quartz Silica	Ingestion		LD50 estimated to be > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Calcium Carbonate	Rabbit	No significant irritation
Polymer NJTS Reg. No. 04499600-7314	Rabbit	Minimal irritation
Sodium Silicate	Rabbit	Corrosive
Fiberglass	Professional judgment	No significant irritation
Quartz Silica	Professional judgment	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Calcium Carbonate	Rabbit	No significant irritation
Polymer NJTS Reg. No. 04499600-7314	Professional judgment	Mild irritant
Sodium Silicate	Rabbit	Corrosive
Fiberglass	Professional judgment	No significant irritation

Skin Sensitization

Name	Species	Value
Sodium Silicate	Mouse	Not sensitizing

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
Sodium Silicate	In Vitro	Not mutagenic
Sodium Silicate	In vivo	Not mutagenic
Fiberglass	In Vitro	Some positive data exist, but the data are not sufficient for classification
Quartz Silica	In Vitro	Some positive data exist, but the data are not sufficient for classification
Quartz Silica	In vivo	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Fiberglass	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Quartz Silica	Inhalation	Human	Carcinogenic

and
animal**Reproductive Toxicity****Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
Calcium Carbonate	Ingestion	Not toxic to development	Rat	NOAEL 625 mg/kg/day	premating & during gestation
Sodium Silicate	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Mouse	NOAEL 200 mg/kg/day	during gestation

Target Organ(s)**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Calcium Carbonate	Inhalation	respiratory system	All data are negative	Rat	NOAEL 0.812 mg/l	90 minutes
Sodium Silicate	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Calcium Carbonate	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Sodium Silicate	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Dog	LOAEL 2,400 mg/kg/day	4 weeks
Sodium Silicate	Ingestion	endocrine system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 804 mg/kg/day	3 months
Sodium Silicate	Ingestion	blood	All data are negative	Rat	NOAEL 804 mg/kg/day	3 months
Sodium Silicate	Ingestion	heart liver	All data are negative	Rat	NOAEL 1,259 mg/kg/day	8 weeks
Fiberglass	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL not available	occupational exposure
Quartz Silica	Inhalation	silicosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure

Aspiration Hazard

For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information**Ecotoxicological information****Test Organism**

Water flea, Daphnia magna

Green algae, Pseudokirchneriella subcapitata

Test Type

48 hours Aquatic Toxicity - Acute

72 hours Aquatic Toxicity - Chronic

Result

27 mg/l

2.6 % weight

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
Zinc Borate 2335 (ZINC COMPOUNDS)	138265-88-0	3 - 7

15.2. State Regulations

Contact 3M for more information.

California Proposition 65

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>Classification</u>
SILICA, CRYSTALLINE (AIRBORNE PARTICLES OF RESPIRABLE SIZE)	None	Carcinogen
ACETALDEHYDE	75-07-0	Carcinogen
GLASS FILAMENTS	None	Carcinogen

WARNING: This product contains a chemical known to the State of California to cause cancer.

15.3. Chemical Inventories

The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the new substance notification requirements of CEPA.

The components of this material are in compliance with the China "Measures on Environmental Management of New Chemical Substance". Certain restrictions may apply. Contact the selling division for additional information.

The components of this material are in compliance with the provisions of the Korean Toxic Chemical Control Law. Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the chemical notification requirements of TSCA.

This product complies with the New Zealand Hazardous Substances and New Organisms Act (1996).

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 1 Flammability: 1 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

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Issue Date:	2016/08/03	Supersedes Date:	2015/07/20

This Safety Data Sheet has been prepared in accordance with the Canadian Hazardous Products Regulations.

SECTION 1: Identification

1.1. Product identifier

3M Wire Pulling Lubricant - WL Series (WL-QT, WL-1, WL-5)

Product Identification Numbers

80-6107-3662-3	80-6107-3663-1	80-6107-3664-9	80-6107-3665-6	80-6114-9092-3
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1.2. Recommended use and restrictions on use

Recommended use

lubricant, wire pulling, LUBRICANT, WIRE PULLING

1.3. Supplier's details

Company:	3M Canada Company
Division:	Electrical Markets Division
Address:	1840 Oxford Street East, Post Office Box 5757, London, Ontario N6A 4T1
Telephone:	(800) 364-3577
Website:	www.3M.ca

1.4. Emergency telephone number

Medical Emergency Telephone: (519) 451-2500, Ext. 2222; Transportation Emergency Telephone (CANUTEC): (613) 996-6666

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Not classified according to the Canadian Hazardous Products Regulation.

2.2. Label elements

Signal word

Not applicable.

Symbols

Not applicable.

Pictograms

Not applicable.

3M Wire Pulling Lubricant - WL Series (WL-QT, WL-1, WL-5)

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt
WATER	7732-18-5	95 - 99
GLYCOLS, POLYPROPYLENE	25322-69-4	0.1 - 2
POLYETHYLENE GLYCOL	25322-68-3	0.1 - 2
SODIUM POLYACRYLATE	9003-04-7	0.1 - 1

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

No need for first aid is anticipated.

Skin Contact:

Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye Contact:

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Material will not burn. Use a fire fighting agent suitable for the surrounding fire. Non-combustible. Use a fire fighting agent suitable for surrounding fire.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

Hazardous Decomposition or By-Products

Substance

Carbon monoxide
Carbon dioxide

Condition

During Combustion
During Combustion

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Ventilate the area with fresh air. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up

Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with water. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

For industrial or professional use only. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

7.2. Conditions for safe storage including any incompatibilities

No special storage requirements.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
POLYETHYLENE GLYCOL	25322-68-3	AIHA	TWA(as particulate):10 mg/m ³	
GLYCOLS, POLYPROPYLENE	25322-69-4	AIHA	TWA(as aerosol):10 mg/m ³	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Under normal use conditions, eye exposure is not expected to be significant enough to require eye protection.

Skin/hand protection

No protective gloves required.

Respiratory protection

Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state	Liquid
Specific Physical Form:	Gel
Appearance/Odour	OPAQUE; WHITE; NO ODOUR
Odour threshold	<i>No Data Available</i>
pH	6.5 - 8.5
Melting point/Freezing point	<i>Not Applicable</i>
Boiling point/Initial boiling point/Boiling range	100 °C
Flash Point	No flash point
Evaporation rate	<i>No Data Available</i>
Evaporation rate	<i>Not Applicable</i>
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>
Vapour Pressure	2,399.8 Pa [@ 20 °C] [Details:@20C MITS data]
Vapour Density	0.9 - 1.1 [Ref Std: AIR=1]
Vapour Density	<i>Not Applicable</i>
Density	<i>Not Applicable</i>
Relative density	1.01 [Ref Std: WATER=1]
Water solubility	Complete
Solubility- non-water	<i>No Data Available</i>
Partition coefficient: n-octanol/ water	<i>Not Applicable</i>
Autoignition temperature	<i>Not Applicable</i>
Decomposition temperature	<i>No Data Available</i>
Viscosity	110,000 - 115,000 mPa-s
Average particle size	<i>Not Applicable</i>
Bulk density	<i>Not Applicable</i>
Molecular weight	<i>Not Applicable</i>
Volatile Organic Compounds	0 lb/gal
Percent volatile	0 %
Softening point	<i>Not Applicable</i>
VOC Less H2O & Exempt Solvents	0 g/l

SECTION 10: Stability and reactivity**10.1. Reactivity**

This material is considered to be non reactive under normal use conditions.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

None known.

Not Applicable

10.6. Hazardous decomposition products

Substance

Condition

None known.

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

No known health effects.

Skin Contact:

Contact with the skin during product use is not expected to result in significant irritation.

Eye Contact:

Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
GLYCOLS, POLYPROPYLENE	Dermal	Rabbit	LD50 > 10,000 mg/kg
POLYETHYLENE GLYCOL	Dermal	Rabbit	LD50 > 20,000 mg/kg
GLYCOLS, POLYPROPYLENE	Ingestion	Rat	LD50 > 2,000 mg/kg
POLYETHYLENE GLYCOL	Ingestion	Rat	LD50 32,770 mg/kg
SODIUM POLYACRYLATE	Dermal	Rabbit	LD50 > 5,000 mg/kg
SODIUM POLYACRYLATE	Ingestion	Rat	LD50 > 2,000 mg/kg

ATE = acute toxicity estimate

3M Wire Pulling Lubricant - WL Series (WL-QT, WL-1, WL-5)**Skin Corrosion/Irritation**

Name	Species	Value
GLYCOLS, POLYPROPYLENE	Rabbit	No significant irritation
POLYETHYLENE GLYCOL	Rabbit	Minimal irritation
SODIUM POLYACRYLATE	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
GLYCOLS, POLYPROPYLENE	Rabbit	No significant irritation
POLYETHYLENE GLYCOL	Rabbit	Mild irritant
SODIUM POLYACRYLATE	Rabbit	No significant irritation

Skin Sensitization

Name	Species	Value
POLYETHYLENE GLYCOL	Guinea pig	Not sensitizing

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
POLYETHYLENE GLYCOL	In Vitro	Not mutagenic
POLYETHYLENE GLYCOL	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
POLYETHYLENE GLYCOL	Ingestion	Rat	Not carcinogenic

Reproductive Toxicity**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test result	Exposure Duration
POLYETHYLENE GLYCOL	Ingestion	Not toxic to female reproduction	Rat	NOAEL 1,125 mg/kg/day	during gestation
POLYETHYLENE GLYCOL	Ingestion	Not toxic to male reproduction	Rat	NOAEL 5699 +/- 1341 mg/kg/day	5 days
POLYETHYLENE GLYCOL	Not Specified	Some positive reproductive/developmental data exist, but the data are not sufficient for classification		NOEL N/A	
POLYETHYLENE GLYCOL	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Mouse	NOAEL 562 mg/animal/day	during gestation

Target Organ(s)**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
POLYETHYLENE GLYCOL	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.008 mg/l	2 weeks

Specific Target Organ Toxicity - repeated exposure

3M Wire Pulling Lubricant - WL Series (WL-QT, WL-1, WL-5)

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
POLYETHYLENE GLYCOL	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.008 mg/l	2 weeks
POLYETHYLENE GLYCOL	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 5,640 mg/kg/day	13 weeks
POLYETHYLENE GLYCOL	Ingestion	heart endocrine system hematopoietic system liver nervous system	All data are negative	Rat	NOAEL 5,640 mg/kg/day	13 weeks

Aspiration Hazard

For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

No data available.

SECTION 13: Disposal considerations

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****Global inventory status**

Contact 3M for more information. The components of this material are in compliance with the China "Measures on Environmental Management of New Chemical Substance". Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of the Korea Chemical Control Act. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Japan Chemical Substance Control Law. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Philippines RA 6969 requirements. Certain restrictions may apply. Contact the selling division for additional information. The components of this product are in compliance with the new substance notification requirements of CEPA. The components of this product are in compliance with the chemical notification requirements of TSCA.

SECTION 16: Other information

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in

significant quantities.

Health: 0 Flammability: 0 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

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3M Canada SDSs are available at www.3M.ca



Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier

3M(TM) Super 77(TM) Multipurpose Adhesive (Aerosol)

Product Identification Numbers

62-4977-2924-4, 62-4977-2928-5, 62-4977-4730-3, 62-4977-4922-6, 62-4977-4925-9, 62-4977-4929-1, 62-4977-4930-9, 62-4977-4935-8

1.2. Recommended use and restrictions on use

Recommended use

Adhesive aerosol, General Purpose Aerosol adhesive

1.3. Supplier's details

MANUFACTURER: 3M
DIVISION: Industrial Adhesives and Tapes Division
ADDRESS: 3M Center, St. Paul, MN 55144-1000, USA
Telephone: 1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification

Flammable Aerosol: Category 1.
Gas Under Pressure: Liquefied gas.
Serious Eye Damage/Irritation: Category 2A.
Reproductive Toxicity: Category 2.
Simple Asphyxiant.
Specific Target Organ Toxicity (single exposure): Category 1.
Specific Target Organ Toxicity (central nervous system): Category 3.

2.2. Label elements

Signal word

Danger

Symbols

Flame | Gas cylinder | Exclamation mark | Health Hazard |

Pictograms



Hazard Statements

Extremely flammable aerosol.

Contains gas under pressure; may explode if heated.

Causes serious eye irritation.

May cause drowsiness or dizziness.

Suspected of damaging fertility or the unborn child.

May displace oxygen and cause rapid suffocation.

Causes damage to organs:
cardiovascular system |

Precautionary Statements

General:

Keep out of reach of children.

Prevention:

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Do not spray on an open flame or other ignition source.

Pressurized container: Do not pierce or burn, even after use.

Do not breathe dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wear protective gloves and eye/face protection.

Do not eat, drink or smoke when using this product.

Wash thoroughly after handling.

Response:

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see Notes to Physician on this label).

Storage:

Protect from sunlight. Do not expose to temperatures exceeding 50C/122F.

Keep container tightly closed.

Store locked up in a well-ventilated place.

Disposal:

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

Notes to Physician:

Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

2.3. Hazards not otherwise classified

Intentional misuse by deliberately concentrating and inhaling contents can be harmful or fatal.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Acetone	67-64-1	20 - 30 Trade Secret *
Non-volatile components (N.J.T.S. Registry No. 04499600-6433P)	Trade Secret*	20 - 30 Trade Secret *
Propane	74-98-6	15 - 25 Trade Secret *
Cyclohexane	110-82-7	10 - 20 Trade Secret *
Petroleum distillates	64742-49-0	10 - 20 Trade Secret *
Hexane	110-54-3	< 0.5

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures**4.1. Description of first aid measures****Inhalation:**

Remove person to fresh air. Get medical attention.

Skin Contact:

Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye Contact:

Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

SECTION 5: Fire-fighting measures**5.1. Suitable extinguishing media**

Use a fire fighting agent suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture

Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products**Substance**

Aldehydes
Carbon monoxide
Carbon dioxide

Condition

During Combustion
During Combustion
During Combustion

5.3. Special protective actions for fire-fighters

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

If possible, seal leaking container. Place leaking containers in a well-ventilated area, preferably an operating exhaust hood, or if necessary outdoors on an impermeable surface until appropriate packaging for the leaking container or its contents is available. Contain spill. Cover spill area with a fire-extinguishing foam. An appropriate aqueous film forming foam (AFFF) is recommended. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible using non-sparking tools. Place in a metal container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Keep out of reach of children. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep container tightly closed. Protect from sunlight. Do not expose to temperatures exceeding 50C/122F. Store away from heat. Store away from acids. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits**

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Hexane	110-54-3	ACGIH	TWA:50 ppm	Skin Notation
Hexane	110-54-3	OSHA	TWA:1800 mg/m3(500 ppm)	
Cyclohexane	110-82-7	ACGIH	TWA:100 ppm	
Cyclohexane	110-82-7	OSHA	TWA:1050 mg/m3(300 ppm)	

Petroleum distillates	64742-49-0	CMRG	TWA:50 ppm	
Acetone	67-64-1	ACGIH	TWA:250 ppm;STEL:500 ppm	A4: Not class. as human carcin
Acetone	67-64-1	OSHA	TWA:2400 mg/m3(1000 ppm)	
Propane	74-98-6	ACGIH	Limit value not established:	
Propane	74-98-6	OSHA	TWA:1800 mg/m3(1000 ppm)	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Do not remain in area where available oxygen may be reduced. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Indirect Vented Goggles

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.

Gloves made from the following material(s) are recommended: Butyl Rubber
Nitrile Rubber

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece supplied-air respirator

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Liquid aerosol
Specific Physical Form:	Aerosol
Odor, Color, Grade:	Clear, sweet, fruity odor
Odor threshold	No Data Available
pH	No Data Available
Melting point	No Data Available
Boiling Point	Not Applicable

Flash Point	-42.00 °F [Test Method: Tagliabue Closed Cup]
Evaporation rate	1.9 [Ref Std: ETHER=1]
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	No Data Available
Flammable Limits(UEL)	No Data Available
Vapor Density	2.97 [Ref Std: AIR=1]
Density	0.726 g/ml
Specific Gravity	0.726 [Ref Std: WATER=1]
Solubility in Water	Nil
Solubility- non-water	No Data Available
Partition coefficient: n-octanol/ water	No Data Available
Autoignition temperature	No Data Available
Decomposition temperature	Not Applicable
Viscosity	Not Applicable
Hazardous Air Pollutants	<=0.4 % weight [Test Method: Calculated]
VOC Less H2O & Exempt Solvents	<=51 % [Test Method: calculated SCAQMD rule 443.1]
Solids Content	>=22.4 %

SECTION 10: Stability and reactivity

10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat

10.5. Incompatible materials

Strong oxidizing agents

10.6. Hazardous decomposition products

Substance

None known.

Condition

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

Intentional concentration and inhalation may be harmful or fatal.

Simple Asphyxiation: Signs/symptoms may include increased heart rate, rapid respirations, drowsiness, headache, incoordination, altered judgement, nausea, vomiting, lethargy, seizures, coma, and may be fatal.

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

Skin Contact:

Dermal Defatting: Signs/symptoms may include localized redness, itching, drying and cracking of skin.

Eye Contact:

Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:

Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Single exposure, above recommended guidelines, may cause:

Cardiac Sensitization: Signs/symptoms may include irregular heartbeat (arrhythmia), faintness, chest pain, and may be fatal.

Reproductive/Developmental Toxicity:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE > 5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE > 50 mg/l
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg
Propane	Inhalation-Gas (4 hours)	Rat	LC50 > 200,000 ppm
Acetone	Dermal	Rabbit	LD50 > 15,688 mg/kg
Acetone	Inhalation-Vapor (4 hours)	Rat	LC50 76 mg/l
Acetone	Ingestion	Rat	LD50 5,800 mg/kg
Cyclohexane	Dermal	Rat	LD50 > 2,000 mg/kg
Cyclohexane	Inhalation-Vapor (4 hours)	Rat	LC50 > 32.9 mg/l

	hours)		
Cyclohexane	Ingestion	Rat	LD50 6,200 mg/kg
Petroleum distillates	Dermal	Rabbit	LD50 > 3,160 mg/kg
Petroleum distillates	Inhalation-Vapor (4 hours)	Rat	LC50 > 14.7 mg/l
Petroleum distillates	Ingestion	Rat	LD50 > 5,000 mg/kg
Non-volatile components (N.J.T.S. Registry No. 04499600-6433P)	Dermal		LD50 estimated to be > 5,000 mg/kg
Non-volatile components (N.J.T.S. Registry No. 04499600-6433P)	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Hexane	Dermal	Rabbit	LD50 > 2,000 mg/kg
Hexane	Inhalation-Vapor (4 hours)	Rat	LC50 170 mg/l
Hexane	Ingestion	Rat	LD50 > 28,700 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Propane	Rabbit	Minimal irritation
Acetone	Mouse	Minimal irritation
Cyclohexane	Rabbit	Mild irritant
Petroleum distillates	Rabbit	Irritant
Non-volatile components (N.J.T.S. Registry No. 04499600-6433P)	Professional judgment	Minimal irritation
Hexane	Human and animal	Mild irritant

Serious Eye Damage/Irritation

Name	Species	Value
Propane	Rabbit	Mild irritant
Acetone	Rabbit	Severe irritant
Cyclohexane	Rabbit	Mild irritant
Petroleum distillates	Rabbit	Mild irritant
Hexane	Rabbit	Mild irritant

Skin Sensitization

Name	Species	Value
Petroleum distillates	Guinea pig	Not sensitizing
Hexane	Human	Not sensitizing

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
Propane	In Vitro	Not mutagenic
Acetone	In vivo	Not mutagenic
Acetone	In Vitro	Some positive data exist, but the data are not sufficient for classification
Cyclohexane	In Vitro	Not mutagenic
Cyclohexane	In vivo	Some positive data exist, but the data are not sufficient for classification
Petroleum distillates	In Vitro	Not mutagenic
Hexane	In Vitro	Not mutagenic

Hexane	In vivo	Not mutagenic
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Carcinogenicity

Name	Route	Species	Value
Acetone	Not Specified	Multiple animal species	Not carcinogenic
Petroleum distillates	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification
Hexane	Dermal	Mouse	Not carcinogenic
Hexane	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity**Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
Acetone	Ingestion	Some positive male reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,700 mg/kg/day	13 weeks
Acetone	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 5.2 mg/l	during organogenesis
Cyclohexane	Inhalation	Not toxic to female reproduction	Rat	NOAEL 24 mg/l	2 generation
Cyclohexane	Inhalation	Not toxic to male reproduction	Rat	NOAEL 24 mg/l	2 generation
Cyclohexane	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 6.9 mg/l	2 generation
Hexane	Ingestion	Not toxic to development	Mouse	NOAEL 2,200 mg/kg/day	during organogenesis
Hexane	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 0.7 mg/l	during gestation
Hexane	Ingestion	Toxic to male reproduction	Rat	NOAEL 1,140 mg/kg/day	90 days
Hexane	Inhalation	Toxic to male reproduction	Rat	LOAEL 3.52 mg/l	28 days

Target Organ(s)**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Propane	Inhalation	cardiac sensitization	Causes damage to organs	Human	NOAEL Not available	
Propane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Propane	Inhalation	respiratory irritation	All data are negative	Human	NOAEL Not available	
Acetone	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Acetone	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Acetone	Inhalation	immune system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL 1.19 mg/l	6 hours
Acetone	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Guinea pig	NOAEL Not available	
Acetone	Ingestion	central nervous	May cause drowsiness or	Human	NOAEL Not	poisoning

		system depression	dizziness		available	and/or abuse
Cyclohexane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Cyclohexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human and animal	NOAEL Not available	
Cyclohexane	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
Petroleum distillates	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Petroleum distillates	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Petroleum distillates	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
Hexane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	not available
Hexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rabbit	NOAEL Not available	8 hours
Hexane	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 24.6 mg/l	8 hours

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Acetone	Dermal	eyes	Some positive data exist, but the data are not sufficient for classification	Guinea pig	NOAEL Not available	3 weeks
Acetone	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL 3 mg/l	6 weeks
Acetone	Inhalation	immune system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL 1.19 mg/l	6 days
Acetone	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Guinea pig	NOAEL 119 mg/l	not available
Acetone	Inhalation	heart liver	All data are negative	Rat	NOAEL 45 mg/l	8 weeks
Acetone	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 900 mg/kg/day	13 weeks
Acetone	Ingestion	heart	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Acetone	Ingestion	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 200 mg/kg/day	13 weeks
Acetone	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 3,896 mg/kg/day	14 days
Acetone	Ingestion	eyes	All data are negative	Rat	NOAEL 3,400 mg/kg/day	13 weeks
Acetone	Ingestion	respiratory system	All data are negative	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Acetone	Ingestion	muscles	All data are negative	Rat	NOAEL 2,500 mg/kg	13 weeks

Acetone	Ingestion	skin bone, teeth, nails, and/or hair	All data are negative	Mouse	NOAEL 11,298 mg/kg/day	13 weeks
Cyclohexane	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 24 mg/l	90 days
Cyclohexane	Inhalation	auditory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.7 mg/l	90 days
Cyclohexane	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rabbit	NOAEL 2.7 mg/l	10 weeks
Cyclohexane	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 24 mg/l	14 weeks
Cyclohexane	Inhalation	peripheral nervous system	All data are negative	Rat	NOAEL 8.6 mg/l	30 weeks
Hexane	Inhalation	peripheral nervous system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Hexane	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Mouse	LOAEL 1.76 mg/l	13 weeks
Hexane	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	6 months
Hexane	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 1.76 mg/l	6 months
Hexane	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 35.2 mg/l	13 weeks
Hexane	Inhalation	auditory system immune system eyes	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Hexane	Inhalation	heart skin endocrine system	All data are negative	Rat	NOAEL 1.76 mg/l	6 months
Hexane	Ingestion	peripheral nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,140 mg/kg/day	90 days
Hexane	Ingestion	endocrine system hematopoietic system liver immune system kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	13 weeks

Aspiration Hazard

Name	Value
Cyclohexane	Aspiration hazard
Petroleum distillates	Aspiration hazard
Hexane	Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information**Ecotoxicological information**

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material

and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. Facility must be capable of handling aerosol cans.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable)

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - Yes Pressure Hazard - Yes Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
Cyclohexane	110-82-7	Trade Secret 10 - 20

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 2 Flammability: 4 Instability: 0 Special Hazards: None
Aerosol Storage Code: 3

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include

the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification

Health: *2 **Flammability:** 4 **Physical Hazard:** 0 **Personal Protection:** X - See PPE section.

Hazardous Material Identification System (HMIS® IV) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® IV ratings are to be used with a fully implemented HMIS® IV program. HMIS® is a registered mark of the American Coatings Association (ACA).

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Argon (0.0001% - 10.00%), Carbon Dioxide (0.0001% - 2.9999%) in Helium

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 09/16/2014

Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Argon (0.0001% - 10.00%), Carbon Dioxide (0.0001% - 2.9999%) in Helium
Product code : SG-2003-00180

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Test gas/Calibration gas.

1.3. Details of the supplier of the safety data sheet

Air Liquide America Specialty Gases
6141 Easton Rd
Plumsteadville, PA 18949 - USA
T 1.800.217.2688
www.airliquide.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Compressed gas H280

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS04

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) : H280 - Contains gas under pressure; may explode if heated
OSHA-H01 - May displace oxygen and cause rapid suffocation

Precautionary statements (GHS-US) : P202 - Do not handle until all safety precautions have been read and understood
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves, protective clothing, eye protection, face protection
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P308+P313 - If exposed or concerned: Get medical advice/attention
P403 - Store in a well-ventilated place
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)
CGA-PG05 - Use a back flow preventive device in the piping
CGA-PG06 - Close valve after each use and when empty
CGA-PG10 - Use only with equipment rated for cylinder pressure
CGA-PG14 - Approach suspected leak area with caution
CGA-PG21 - Open valve slowly

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

Argon (0.0001% - 10.00%), Carbon Dioxide (0.0001% - 2.9999%) in Helium

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SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
Helium	(CAS No)7440-59-7	87.0001 - 99.9998	Compressed gas, H280
Argon	(CAS No)7440-37-1	0.0001 - 10	Compressed gas, H280
Carbon dioxide	(CAS No)124-38-9	0.0001 - 2.9999	Simple Asphy, H380 Liquefied gas, H280

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.
- First-aid measures after skin contact : Adverse effects not expected from this product.
- First-aid measures after eye contact : Adverse effects not expected from this product.
- First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Symptoms similar to those listed under inhalation.
- Symptoms/injuries after inhalation : May displace oxygen and cause rapid suffocation. If you feel unwell, seek medical advice.
- Symptoms/injuries after skin contact : Adverse effects not expected from this product.
- Symptoms/injuries after eye contact : Adverse effects not expected from this product.
- Symptoms/injuries after ingestion : Ingestion is not considered a potential route of exposure.
- Symptoms/injuries upon intravenous administration : Not known.
- Chronic symptoms : None known.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.
- Unsuitable extinguishing media : Do not use water jet to extinguish.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : The product is not flammable.
- Explosion hazard : Product is not explosive. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.
- Reactivity : None known.

5.3. Advice for firefighters

- Firefighting instructions : In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.
- Protection during firefighting : Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters. Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Ensure adequate ventilation.

Argon (0.0001% - 10.00%), Carbon Dioxide (0.0001% - 2.9999%) in Helium

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6.1.1. For non-emergency personnel

- Protective equipment : Wear protective equipment consistent with the site emergency plan.
- Emergency procedures : Escape the danger area by the closest safe route. Close doors and windows of adjacent premises. Keep containers closed. Mark the danger area. Seal off low-lying areas. Keep upwind.

6.1.2. For emergency responders

- Protective equipment : Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters. Equip cleanup crew with proper protection.
- Emergency procedures : Evacuate and limit access. Ventilate area.

6.2. Environmental precautions

Try to stop release if safe to do so.

6.3. Methods and material for containment and cleaning up

- For containment : Try to stop release if safe to do so.
- Methods for cleaning up : Dispose of this material and its container in accordance with local regulations.

6.4. Reference to other sections

See also Sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : Pressurized container: Do not pierce or burn, even after use. Use equipment rated for cylinder pressure.
- Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area.
- Hygiene measures : Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Comply with applicable regulations.
- Storage conditions : Do not expose to temperatures exceeding 52°C (125°F). Keep container closed when not in use. Protect cylinder from physical damage.
- Incompatible products : None known.
- Incompatible materials : None known.

7.3. Specific end use(s)

Test gas/Calibration gas.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Carbon dioxide (124-38-9)		
USA ACGIH	ACGIH TWA (ppm)	5000 ppm
USA ACGIH	ACGIH STEL (ppm)	30000 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	9000 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	5000 ppm

Helium (7440-59-7)

Argon (7440-37-1)

Argon (0.0001% - 10.00%), Carbon Dioxide (0.0001% - 2.9999%) in Helium

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8.2. Exposure controls

Appropriate engineering controls	: Provide adequate general and local exhaust ventilation. Systems under pressure should be regularly checked for leakages. Ensure exposure is below occupational exposure limits. Oxygen detectors should be used when asphyxiating gases may be released. Consider work permit system e.g. for maintenance activities.
Hand protection	: Wear working gloves when handling gas containers. 29CFR 1910.138: Hand Protection.
Eye protection	: Wear safety glasses with side shields. 29 CFR 1910.133: Eye and Face Protection.
Skin and body protection	: Wear suitable protective clothing, e.g. - lab coats, coveralls or flame resistant clothing.
Respiratory protection	: None necessary during normal and routine operations.
Thermal hazard protection	: None necessary during normal and routine operations.
Environmental exposure controls	: Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.
Other information	: Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas
Appearance	: Clear, colorless gas.
Color	: Colorless
Odor	: odorless
Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable for gas-mixtures.
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Relative gas density	: Lighter or similar to air.
Solubility	: Water: Solubility in water of component(s) of the mixture : • : 2000 mg/l • : 1.5 mg/l • : 61 mg/l
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: None.
Explosive limits	: No data available

9.2. Other information

Additional information	: None.
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SECTION 10: Stability and reactivity

10.1. Reactivity

None known.

10.2. Chemical stability

Stable under normal conditions.

Argon (0.0001% - 10.00%), Carbon Dioxide (0.0001% - 2.9999%) in Helium

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10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

Under normal conditions of storage and use hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Helium (7440-59-7)

LC50 inhalation rat (ppm)	410000 ppm/4h
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Argon (7440-37-1)

LC50 inhalation rat (ppm)	410000 ppm/4h
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Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : May displace oxygen and cause rapid suffocation. If you feel unwell, seek medical advice.

Symptoms/injuries after skin contact : Adverse effects not expected from this product.

Symptoms/injuries after eye contact : Adverse effects not expected from this product.

Symptoms/injuries after ingestion : Ingestion is not considered a potential route of exposure.

Symptoms/injuries upon intravenous administration : Not known.

Chronic symptoms : None known.

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

Carbon dioxide (124-38-9)

Persistence and degradability	No ecological damage caused by this product.
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Helium (7440-59-7)

Persistence and degradability	No ecological damage caused by this product.
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Argon (7440-37-1)

Persistence and degradability	No ecological damage caused by this product.
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12.3. Bioaccumulative potential

Carbon dioxide (124-38-9)

Argon (0.0001% - 10.00%), Carbon Dioxide (0.0001% - 2.9999%) in Helium

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BCF fish 1	(no bioaccumulation)
Log Pow	0.83
Bioaccumulative potential	No ecological damage caused by this product.

Helium (7440-59-7)

Log Pow	Not applicable for inorganic gases.
Bioaccumulative potential	No ecological damage caused by this product.

Argon (7440-37-1)

Log Pow	Not applicable for inorganic gases.
Bioaccumulative potential	No ecological damage caused by this product.

12.4. Mobility in soil

Carbon dioxide (124-38-9)

Ecology - soil	No ecological damage caused by this product.
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Helium (7440-59-7)

Ecology - soil	No ecological damage caused by this product.
----------------	--

Argon (7440-37-1)

Ecology - soil	No ecological damage caused by this product.
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12.5. Other adverse effects

Effect on ozone layer	: No additional information available
Effect on the global warming	: Contains greenhouse gas(es) not covered by 842/2006/EC.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	: Contact supplier if guidance is required. Do not discharge into any place where its accumulation could be dangerous. Ensure that the emission levels from local regulations or operating permits are not exceeded.
Waste disposal recommendations	: Refer to the CGA Pamphlet P-63 "Disposal of Gases" available at www.cganet.com for more guidance on suitable disposal methods.
Additional information	: None.

Argon (0.0001% - 10.00%), Carbon Dioxide (0.0001% - 2.9999%) in Helium

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SECTION 14: Transport information

In accordance with DOT

Transport document description	: UN1956 Compressed gas, n.o.s., 2.2
UN-No.(DOT)	: 1956
DOT NA no.	: UN1956
DOT Proper Shipping Name	: Compressed gas, n.o.s.
Department of Transportation (DOT) Hazard Classes	: 2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115
Hazard labels (DOT)	: 2.2 - Non-flammable gas



DOT Symbols	: G - Identifies PSN requiring a technical name
DOT Packaging Exceptions (49 CFR 173.xxx)	: 306;307
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 302;305
DOT Packaging Bulk (49 CFR 173.xxx)	: 314;315
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 75 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 150 kg
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

Additional information

Other information	: No supplementary information available.
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ADR

Transport document description	: UN 1956, 2.2, (E)
Class (ADR)	: 2 - Gases
Hazard identification number (Kemler No.)	: 20
Classification code (ADR)	: 1A
Hazard labels (ADR)	: 2.2 - Non-flammable compressed gas



Orange plates



Tunnel restriction code (ADR)	: E
LQ	: 120ml
Excepted quantities (ADR)	: E1

Transport by sea

UN-No. (IMDG)	: 1956
Proper Shipping Name (IMDG)	: COMPRESSED GAS, N.O.S.
Class (IMDG)	: 2.2 - Non-flammable, non-toxic gases

Air transport

UN-No.(IATA)	: 1956
Proper Shipping Name (IATA)	: COMPRESSED GAS, N.O.S.

Argon (0.0001% - 10.00%), Carbon Dioxide (0.0001% - 2.9999%) in Helium

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Class (IATA) : 2

SECTION 15: Regulatory information

15.1. US Federal regulations

No additional information available

15.2. International regulations

CANADA

Carbon dioxide (124-38-9)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class A - Compressed Gas
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Helium (7440-59-7)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class A - Compressed Gas
----------------------	--------------------------

Argon (7440-37-1)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class A - Compressed Gas
----------------------	--------------------------

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

15.2.2. National regulations

No additional information available

15.3. US State regulations

Carbon dioxide (124-38-9)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Helium (7440-59-7)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Argon (7440-37-1)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Indication of changes : Revised safety data sheet in accordance with OSHA final rule on GHS implementation promulgated March 26, 2012.

Other information : This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this product.

Full text of H-phrases: see section 16:

Compressed gas	Gases under pressure Compressed gas
Liquefied gas	Gases under pressure Liquefied gas
Simple Asphy	Simple Asphyxiant
H280	Contains gas under pressure; may explode if heated

Argon (0.0001% - 10.00%), Carbon Dioxide (0.0001% - 2.9999%) in Helium

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H380	May displace oxygen and cause rapid suffocation
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SDS US (GHS HazCom 2012)

This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of Air Liquide America Corporation's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this product is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.

SAFETY DATA SHEET

Acetylene

Section 1. Identification

GHS product identifier	: Acetylene
Chemical name	: acetylene
Other means of identification	: Ethyne; Ethine; Narcylen; C ₂ H ₂ ; Acetylen; UN 1001; Vinylene
Product use	: Synthetic/Analytical chemistry.
Synonym	: Ethyne; Ethine; Narcylen; C ₂ H ₂ ; Acetylen; UN 1001; Vinylene
SDS #	: 001001
Supplier's details	: Airgas USA, LLC and its affiliates 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5283 1-610-687-5253
24-hour telephone	: 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Compressed gas

GHS label elements

Hazard pictograms



Signal word : Danger

Hazard statements : Extremely flammable gas.
May form explosive mixtures with air.
Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.

Precautionary statements

General

: Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Fusible plugs in top, bottom, or valve melt at 98°C to 107°C (208°F to 224°F). Do not discharge at pressures above 15psig (103kpa). Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Approach suspected leak area with caution.

Prevention : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response : Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.

Storage : Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.

Disposal : Not applicable.

Hazards not otherwise classified : In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

Section 3. Composition/information on ingredients

Substance/mixture	: Substance
Chemical name	: acetylene
Other means of identification	: Ethyne; Ethine; Narcylen; C ₂ H ₂ ; Acetylen; UN 1001; Vinylene

CAS number/other identifiers

CAS number	: 74-86-2
Product code	: 001001

Ingredient name	%	CAS number
acetylene	100	74-86-2

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
Inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Skin contact	: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: As this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: Contact with rapidly expanding gas may cause burns or frostbite.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: Contact with rapidly expanding gas may cause burns or frostbite.
Frostbite	: Try to warm up the frozen tissues and seek medical attention.
Ingestion	: As this product is a gas, refer to the inhalation section.

Over-exposure signs/symptoms

Eye contact	: No specific data.
Inhalation	: No specific data.
Skin contact	: No specific data.
Ingestion	: No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: No specific treatment.

Section 4. First aid measures

- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

- Specific hazards arising from the chemical** : Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.
- Large spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
acetylene	NIOSH REL (United States, 10/2013). CEIL: 2662 mg/m ³ CEIL: 2500 ppm

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Section 8. Exposure controls/personal protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Gas.
- Color** : Colorless.
- Molecular weight** : 26.04 g/mole
- Molecular formula** : C₂H₂
- Melting/freezing point** : -81°C (-113.8°F)
- Critical temperature** : 35.25°C (95.5°F)
- Odor** : Mild. Ethereal.
- Odor threshold** : Not available.
- pH** : Not available.
- Flash point** : Closed cup: -18.15°C (-0.67°F)
- Burning time** : Not applicable.
- Burning rate** : Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and oxidizing materials.
- Lower and upper explosive (flammable) limits** : Lower: 2.5%
Upper: 100%
- Vapor pressure** : 635 (psig)
- Vapor density** : 0.907 (Air = 1)
- Specific Volume (ft³/lb)** : 14.7058
- Gas Density (lb/ft³)** : 0.0691
- Relative density** : Not applicable.
- Solubility** : Not available.
- Solubility in water** : 1.2 g/l
- Partition coefficient: n-octanol/water** : 0.37
- Auto-ignition temperature** : 305°C (581°F)
- Decomposition temperature** : Not available.
- SADT** : Not available.
- Viscosity** : Not applicable.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Incompatible materials	: Oxidizers
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : No known significant effects or critical hazards.

Section 11. Toxicological information

- Skin contact** : Contact with rapidly expanding gas may cause burns or frostbite.
Ingestion : As this product is a gas, refer to the inhalation section.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
Potential delayed effects : Not available.

Long term exposure

- Potential immediate effects** : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

Not available.

- General** : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
acetylene	0.37	-	low

Mobility in soil

- Soil/water partition coefficient (K_{oc})** : Not available.






Section 12. Ecological information

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1001	UN1001	UN1001	UN1001	UN1001
UN proper shipping name	ACETYLENE, DISSOLVED	ACETYLENE, DISSOLVED	ACETYLENE, DISSOLVED	ACETYLENE, DISSOLVED	ACETYLENE, DISSOLVED
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Additional information	<u>Limited quantity</u> Yes. <u>Packaging instruction</u> Passenger aircraft Quantity limitation: Forbidden. Cargo aircraft Quantity limitation: 15 kg	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2). <u>Explosive Limit and Limited Quantity Index</u> 0 <u>Passenger Carrying Ship Index</u> 75 <u>Passenger Carrying Road or Rail Index</u> Forbidden <u>Special provisions</u> 38	-	-	<u>Passenger and Cargo Aircraft</u> Quantity limitation: 0 Forbidden Cargo Aircraft Only Quantity limitation: 15 kg

“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: Not determined
 United States inventory (TSCA 8b): This material is listed or exempted.
 Clean Air Act (CAA) 112 regulated flammable substances: acetylene

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard
 Sudden release of pressure

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
acetylene	100	Yes.	Yes.	No.	No.	No.

State regulations

Massachusetts : This material is listed.
New York : This material is not listed.
New Jersey : This material is listed.
Pennsylvania : This material is listed.

International regulations

International lists

National inventory

Australia : This material is listed or exempted.
Canada : This material is listed or exempted.
China : This material is listed or exempted.
Europe : This material is listed or exempted.
Japan : This material is listed or exempted.
Malaysia : Not determined.
New Zealand : This material is listed or exempted.
Philippines : This material is listed or exempted.
Republic of Korea : This material is listed or exempted.
Taiwan : This material is listed or exempted.

Canada

WHMIS (Canada) : Class A: Compressed gas.
 Class B-1: Flammable gas.
 Class F: Dangerously reactive material.

Section 15. Regulatory information

CEPA Toxic substances: This material is not listed.

Canadian ARET: This material is not listed.

Canadian NPRI: This material is listed.

Alberta Designated Substances: This material is not listed.

Ontario Designated Substances: This material is not listed.

Quebec Designated Substances: This material is not listed.

Section 16. Other information

Canada Label requirements : Class A: Compressed gas.
Class B-1: Flammable gas.
Class F: Dangerously reactive material.

Hazardous Material Information System (U.S.A.)

Health	1
Flammability	4
Physical hazards	2

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



Note: The instability hazard rating for acetylene, dissolved (stabilized acetylene) is 2.

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
Flam. Gas 1, H220 Press. Gas Comp. Gas, H280	Expert judgment According to package

History

Date of printing : 6/7/2016
Date of issue/Date of revision : 6/7/2016
Date of previous issue : 5/24/2016
Version : 0.03

Section 16. Other information

Key to abbreviations

: ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References

: Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET

Argon

Airgas
an Air Liquide company

Section 1. Identification

GHS product identifier : Argon
Chemical name : argon
Other means of identification : Argon.
Product use : Synthetic/Analytical chemistry.
Synonym : Argon.
SDS # : 001004
Supplier's details : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

24-hour telephone : 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : GASES UNDER PRESSURE - Compressed gas

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.

Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction.

Prevention : Not applicable.

Response : Not applicable.

Storage : Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.

Disposal : Not applicable.

Hazards not otherwise classified : In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

Section 3. Composition/information on ingredients

Substance/mixture : Substance
Chemical name : argon
Other means of identification : Argon.

CAS number/other identifiers

CAS number : 7440-37-1
Product code : 001004

Ingredient name	%	CAS number
Argon	100	7440-37-1

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : As this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : No known significant effects or critical hazards. Acts as a simple asphyxiant.

Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Ingestion : As this product is a gas, refer to the inhalation section.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Section 4. First aid measures

- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

- Specific hazards arising from the chemical** : Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.
- Hazardous thermal decomposition products** : No specific data.

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Immediately contact emergency personnel. Stop leak if without risk.
- Large spill** : Immediately contact emergency personnel. Stop leak if without risk. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Section 7. Handling and storage

Advice on general occupational hygiene

- : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

- : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Argon	Oxygen Depletion [Asphyxiant]

Appropriate engineering controls

- : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls

- : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

- : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

- : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection

- : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

- : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

- : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

- : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state	: Gas.
Color	: Colorless.
Molecular weight	: 39.95 g/mole
Molecular formula	: Ar
Boiling/condensation point	: -185.9°C (-302.6°F)
Melting/freezing point	: -189.2°C (-308.6°F)
Critical temperature	: -122.4°C (-188.3°F)
Odor	: Odorless.
Odor threshold	: Not available.
pH	: Not available.
Flash point	: [Product does not sustain combustion.]
Burning time	: Not applicable.
Burning rate	: Not applicable.
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: 1.66 (Air = 1)
Specific Volume (ft ³ /lb)	: 9.7087
Gas Density (lb/ft ³)	: 0.103
Relative density	: Not applicable.
Solubility	: Not available.
Solubility in water	: Not available.
Partition coefficient: n-octanol/water	: 0.74
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
SADT	: Not available.
Viscosity	: Not applicable.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 10. Stability and reactivity

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Contact with rapidly expanding gas may cause burns or frostbite.
- Inhalation** : No known significant effects or critical hazards. Acts as a simple asphyxiant.
- Skin contact** : Contact with rapidly expanding gas may cause burns or frostbite.
- Ingestion** : As this product is a gas, refer to the inhalation section.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

Not available.

- General** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.

Section 11. Toxicological information

Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Argon	0.74	-	low

Mobility in soil






Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1006	UN1006	UN1006	UN1006	UN1006
UN proper shipping name	ARGON, COMPRESSED	ARGON, COMPRESSED	ARGON, COMPRESSED	ARGON, COMPRESSED	ARGON, COMPRESSED
Transport hazard class(es)	2.2 	2.2 	2.2 	2.2 	2.2 

Section 14. Transport information

Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Additional information	<u>Limited quantity</u> No	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2). <u>Explosive Limit and Limited Quantity Index</u> 0.125 <u>Passenger Carrying Road or Rail Index</u> 75 <u>Special provisions</u> 42	-	-	Limited quantity No <u>Passenger and Cargo Aircraft</u> Quantity limitation: Forbidden

“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption:** This material is listed or exempted.
United States inventory (TSCA 8b): This material is listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Sudden release of pressure

Composition/information on ingredients

Section 15. Regulatory information

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Argon	100	No.	Yes.	No.	No.	No.

State regulations

- Massachusetts** : This material is listed.
New York : This material is not listed.
New Jersey : This material is listed.
Pennsylvania : This material is listed.

International regulations

International lists

National inventory

- Australia** : This material is listed or exempted.
Canada : This material is listed or exempted.
China : This material is listed or exempted.
Europe : This material is listed or exempted.
Japan : Not determined.
Malaysia : Not determined.
New Zealand : This material is listed or exempted.
Philippines : This material is listed or exempted.
Republic of Korea : This material is listed or exempted.
Taiwan : This material is listed or exempted.

Canada

- WHMIS (Canada)** : Class A: Compressed gas.
CEPA Toxic substances: This material is not listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is not listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

Section 16. Other information

- Canada Label requirements** : Class A: Compressed gas.

Hazardous Material Information System (U.S.A.)

Health	0
Flammability	0
Physical hazards	3

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Section 16. Other information



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
Press. Gas Comp. Gas, H280	Expert judgment

History

Date of printing : 7/1/2016

Date of issue/Date of revision : 7/1/2016

Date of previous issue : 7/1/2016

Version : 0.06

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET

Airgas

Oxygen

Section 1. Identification

GHS product identifier	: Oxygen
Chemical name	: oxygen
Other means of identification	: Molecular oxygen; Oxygen molecule; Pure oxygen; O ₂ ; UN 1072; Dioxygen; Oxygen USP, Aviator's Breathing Oxygen (ABO)
Product use	: Synthetic/Analytical chemistry.
Synonym	: Molecular oxygen; Oxygen molecule; Pure oxygen; O ₂ ; UN 1072; Dioxygen; Oxygen USP, Aviator's Breathing Oxygen (ABO)
SDS #	: 001043
Supplier's details	: Airgas USA, LLC and its affiliates 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5283 1-610-687-5253
24-hour telephone	: 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: OXIDIZING GASES - Category 1 GASES UNDER PRESSURE - Compressed gas

GHS label elements

Hazard pictograms



Signal word : Danger

Hazard statements : May cause or intensify fire; oxidizer.
Contains gas under pressure; may explode if heated.

Precautionary statements

General

: Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Open valve slowly. Use only with equipment cleaned for Oxygen service.

Prevention

: Keep away from clothing, incompatible materials and combustible materials. Keep reduction valves, valves and fittings free from oil and grease.

Response

: In case of fire: Stop leak if safe to do so.

Storage

: Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.

Disposal

: Not applicable.

Hazards not otherwise classified

: None known.

Section 3. Composition/information on ingredients

Substance/mixture	: Substance
Chemical name	: oxygen
Other means of identification	: Molecular oxygen; Oxygen molecule; Pure oxygen; O ₂ ; UN 1072; Dioxygen; Oxygen USP, Aviator's Breathing Oxygen (ABO)

CAS number/other identifiers

CAS number	: 7782-44-7
Product code	: 001043

Ingredient name	%	CAS number
oxygen	100	7782-44-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
Inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Skin contact	: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: As this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: Contact with rapidly expanding gas may cause burns or frostbite.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: Contact with rapidly expanding gas may cause burns or frostbite.
Frostbite	: Try to warm up the frozen tissues and seek medical attention.
Ingestion	: As this product is a gas, refer to the inhalation section.

Over-exposure signs/symptoms

Eye contact	: No specific data.
Inhalation	: No specific data.
Skin contact	: No specific data.
Ingestion	: No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: No specific treatment.

Section 4. First aid measures

- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

- Specific hazards arising from the chemical** : Contains gas under pressure. Oxidizing material. This material increases the risk of fire and may aid combustion. Contact with combustible material may cause fire. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

- Hazardous thermal decomposition products** : No specific data.

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.
- Large spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Section 7. Handling and storage

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Keep away from clothing, incompatible materials and combustible materials. Keep reduction valves free from grease and oil. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Separate from acids, alkalies, reducing agents and combustibles. Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

oxygen

None.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Gas. [Compressed gas.]
- Color** : Colorless. Blue.
- Molecular weight** : 32 g/mole
- Molecular formula** : O₂
- Boiling/condensation point** : -183°C (-297.4°F)
- Melting/freezing point** : -218.4°C (-361.1°F)
- Critical temperature** : -118.15°C (-180.7°F)
- Odor** : Odorless.
- Odor threshold** : Not available.
- pH** : Not available.
- Flash point** : [Product does not sustain combustion.]
- Burning time** : Not applicable.
- Burning rate** : Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Extremely flammable in the presence of the following materials or conditions: reducing materials, combustible materials and organic materials.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : 1.1 (Air = 1)
- Specific Volume (ft³/lb)** : 12.0482
- Gas Density (lb/ft³)** : 0.083
- Relative density** : Not applicable.
- Solubility** : Not available.
- Solubility in water** : Not available.
- Partition coefficient: n-octanol/water** : 0.65
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- SADT** : Not available.
- Viscosity** : Not applicable.

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.

Section 10. Stability and reactivity

Possibility of hazardous reactions	: Hazardous reactions or instability may occur under certain conditions of storage or use. Conditions may include the following: contact with combustible materials Reactions may include the following: risk of causing fire
Conditions to avoid	: No specific data.
Incompatible materials	: Highly reactive or incompatible with the following materials: combustible materials reducing materials grease oil
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact	: Contact with rapidly expanding gas may cause burns or frostbite.
Inhalation	: No known significant effects or critical hazards.

Section 11. Toxicological information

- Skin contact** : Contact with rapidly expanding gas may cause burns or frostbite.
Ingestion : As this product is a gas, refer to the inhalation section.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
Potential delayed effects : Not available.

Long term exposure

- Potential immediate effects** : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

Not available.

- General** : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
oxygen	0.65	-	low

Mobility in soil

- Soil/water partition coefficient (K_{oc})** : Not available.



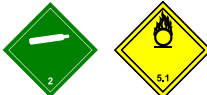
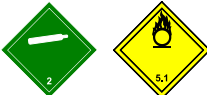

Section 12. Ecological information

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1072	UN1072	UN1072	UN1072	UN1072
UN proper shipping name	OXYGEN, COMPRESSED	OXYGEN, COMPRESSED	OXYGEN, COMPRESSED	OXYGEN, COMPRESSED	OXYGEN, COMPRESSED
Transport hazard class(es)	2.2 (5.1) 	2.2 	2.2 (5.1) 	2.2 (5.1) 	2.2 (5.1) 
Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Additional information	Limited quantity Yes. Packaging instruction Passenger aircraft Quantity limitation: 75 kg Cargo aircraft Quantity limitation: 150 kg Special provisions A52	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2), 2.23-2.25 (Class 5). Explosive Limit and Limited Quantity Index 0.125 ERAP Index 3000 Passenger Carrying Ship Index 50 Passenger Carrying Road or Rail Index 75 Special provisions 42	-	-	Passenger and Cargo Aircraft Quantity limitation: 75 kg Cargo Aircraft Only Quantity limitation: 150 kg

“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 14. Transport information

Transport in bulk according : Not available.
to Annex II of MARPOL
73/78 and the IBC Code

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption:** This material is listed or exempted.
United States inventory (TSCA 8b): This material is listed or exempted.

Clean Air Act Section 112 : Not listed
**(b) Hazardous Air
Pollutants (HAPs)**

Clean Air Act Section 602 : Not listed
Class I Substances

Clean Air Act Section 602 : Not listed
Class II Substances

DEA List I Chemicals : Not listed
(Precursor Chemicals)

DEA List II Chemicals : Not listed
(Essential Chemicals)

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Sudden release of pressure

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
oxygen	100	No.	Yes.	No.	No.	No.

State regulations

Massachusetts : This material is listed.

New York : This material is not listed.

New Jersey : This material is listed.

Pennsylvania : This material is listed.

International regulations

International lists

National inventory

Australia : This material is listed or exempted.

Canada : This material is listed or exempted.

China : This material is listed or exempted.

Europe : This material is listed or exempted.

Japan : Not determined.

Malaysia : Not determined.

New Zealand : This material is listed or exempted.

Philippines : This material is listed or exempted.

Republic of Korea : This material is listed or exempted.

Taiwan : This material is listed or exempted.

Section 15. Regulatory information

Canada

WHMIS (Canada)

: Class A: Compressed gas.
Class C: Oxidizing material.
CEPA Toxic substances: This material is not listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is not listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

Section 16. Other information

Canada Label requirements : Class A: Compressed gas.
Class C: Oxidizing material.

Hazardous Material Information System (U.S.A.)

Health	0
Flammability	0
Physical hazards	3

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
Ox. Gas 1, H270 Press. Gas Comp. Gas, H280	Expert judgment According to package

History

Date of printing : 8/26/2015
Date of issue/Date of revision : 8/26/2015
Date of previous issue : No previous validation
Version : 0.01

Section 16. Other information

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET

Airgas

Propane

Section 1. Identification

GHS product identifier	: Propane
Chemical name	: propane
Other means of identification	: Propyl hydride; n-Propane; Dimethyl methane; Bottled gas; propane in gaseous state; propane liquefied, n-Propane; Dimethylmethane; Freon 290; Liquefied petroleum gas; Lpg; Propyl hydride; R 290; C3H8; UN 1075; UN 1978; A-108; Hydrocarbon propellant.
Product use	: Synthetic/Analytical chemistry.
Synonym	: Propyl hydride; n-Propane; Dimethyl methane; Bottled gas; propane in gaseous state; propane liquefied, n-Propane; Dimethylmethane; Freon 290; Liquefied petroleum gas; Lpg; Propyl hydride; R 290; C3H8; UN 1075; UN 1978; A-108; Hydrocarbon propellant.
SDS #	: 001045
Supplier's details	: Airgas USA, LLC and its affiliates 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5283 1-610-687-5253
24-hour telephone	: 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Liquefied gas

GHS label elements

Hazard pictograms



Signal word

: Danger

Hazard statements

: Extremely flammable gas.
Contains gas under pressure; may explode if heated.
May cause frostbite.
May form explosive mixtures in Air.
May displace oxygen and cause rapid suffocation.

Precautionary statements

General

: Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Always keep container in upright position. Approach suspected leak area with caution.

Prevention

: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response

: Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.

Storage

: Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.

Section 2. Hazards identification

- Disposal** : Not applicable.
- Hazards not otherwise classified** : In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

Section 3. Composition/information on ingredients

- Substance/mixture** : Substance
- Chemical name** : propane
- Other means of identification** : Propyl hydride; n-Propane; Dimethyl methane; Bottled gas; propane in gaseous state; propane liquefied, n-Propane; Dimethylmethane; Freon 290; Liquefied petroleum gas; Lpg; Propyl hydride; R 290; C3H8; UN 1075; UN 1978; A-108; Hydrocarbon propellant.

CAS number/other identifiers

CAS number : 74-98-6

Product code : 001045

Ingredient name	%	CAS number
Propane	100	74-98-6

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : As this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Frostbite** : Try to warm up the frozen tissues and seek medical attention.
- Ingestion** : As this product is a gas, refer to the inhalation section.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.

Section 4. First aid measures

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Specific hazards arising from the chemical : Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

Section 6. Accidental release measures

- Large spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Propane	NIOSH REL (United States, 10/2013). TWA: 1800 mg/m ³ 10 hours. TWA: 1000 ppm 10 hours. OSHA PEL (United States, 2/2013). TWA: 1800 mg/m ³ 8 hours. TWA: 1000 ppm 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 1800 mg/m ³ 8 hours. TWA: 1000 ppm 8 hours.

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Gas. [Liquefied compressed gas.]
- Color** : Colorless.
- Molecular weight** : 44.11 g/mole
- Molecular formula** : C₃H₈
- Boiling/condensation point** : -161.48°C (-258.7°F)
- Melting/freezing point** : -187.6°C (-305.7°F)
- Critical temperature** : 96.55°C (205.8°F)
- Odor** : Odorless.BUT MAY HAVE SKUNK ODOR ADDED.
- Odor threshold** : Not available.
- pH** : Not available.
- Flash point** : Closed cup: -104°C (-155.2°F)
Open cup: -104°C (-155.2°F)
- Burning time** : Not applicable.
- Burning rate** : Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and oxidizing materials.
- Lower and upper explosive (flammable) limits** : Lower: 1.8%
Upper: 8.4%
- Vapor pressure** : 109 (psig)
- Vapor density** : 1.6 (Air = 1)

Section 9. Physical and chemical properties

Specific Volume (ft³/lb)	: 8.6206
Gas Density (lb/ft³)	: 0.116 (25°C / 77 to °F)
Relative density	: Not applicable.
Solubility	: Not available.
Solubility in water	: 0.0244 g/l
Partition coefficient: n-octanol/water	: 1.09
Auto-ignition temperature	: 287°C (548.6°F)
Decomposition temperature	: Not available.
SADT	: Not available.
Viscosity	: Not applicable.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Incompatible materials	: Oxidizers
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

IDLH : 2100 ppm

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Section 11. Toxicological information

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : As this product is a gas, refer to the inhalation section.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Propane	1.09	-	low

Mobility in soil






Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1978	UN1978	UN1978	UN1978	UN1978
UN proper shipping name	PROPANE	PROPANE	PROPANE	PROPANE	PROPANE
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Additional information	Limited quantity Yes. Packaging instruction Passenger aircraft Quantity limitation: Forbidden. Cargo aircraft Quantity limitation: 150 kg Special provisions 19, T50	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2). Explosive Limit and Limited Quantity Index 0.125 ERAP Index 3000	-	-	Passenger and Cargo Aircraft Quantity limitation: 0 Forbidden Cargo Aircraft Only Quantity limitation: 150 kg

Section 14. Transport information

		<u>Passenger Carrying Ship Index</u> 65 <u>Passenger Carrying Road or Rail Index</u> Forbidden <u>Special provisions</u> 29, 42			
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“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined
United States inventory (TSCA 8b): This material is listed or exempted.
Clean Air Act (CAA) 112 regulated flammable substances: propane

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard
Sudden release of pressure

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Propane	100	Yes.	Yes.	No.	No.	No.

State regulations

Massachusetts : This material is listed.

New York : This material is not listed.

Section 15. Regulatory information

New Jersey : This material is listed.

Pennsylvania : This material is listed.

International regulations

International lists

National inventory

Australia : This material is listed or exempted.

Canada : This material is listed or exempted.

China : This material is listed or exempted.

Europe : This material is listed or exempted.

Japan : This material is listed or exempted.

Malaysia : This material is listed or exempted.

New Zealand : This material is listed or exempted.

Philippines : This material is listed or exempted.

Republic of Korea : This material is listed or exempted.

Taiwan : This material is listed or exempted.

Canada

WHMIS (Canada) : Class A: Compressed gas.
Class B-1: Flammable gas.
CEPA Toxic substances: This material is not listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

Section 16. Other information

Canada Label requirements : Class A: Compressed gas.
Class B-1: Flammable gas.

Hazardous Material Information System (U.S.A.)

Health	*	1
Flammability		4
Physical hazards		2

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



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Section 16. Other information

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
Flam. Gas 1, H220 Press. Gas Liq. Gas, H280	Expert judgment Expert judgment

History

Date of printing : 10/20/2015
Date of issue/Date of revision : 10/20/2015
Date of previous issue : No previous validation
Version : 0.01

Key to abbreviations : ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

Other special considerations : The information below is given to call attention to the issue of "Naturally occurring radioactive materials". Although Radon-222 levels in the product represented by this MSDS do not present any direct Radon exposure hazard, customers should be aware of the potential for Radon daughter build up within their processing systems, whatever the source of their product streams. Radon-222 is a naturally occurring radioactive gas which can be a contaminant in natural gas. During subsequent processing, Radon tends to be concentrated in Liquefied Petroleum Gas streams and in product streams having a similar boiling point range. Industry experience has shown that this product may contain small amounts of Radon-222 and its radioactive decay products, called Radon "daughters". The actual concentration of Radon-222 and radioactive daughters in the delivered product is dependent on the geographical source of the natural gas and storage time prior to delivery. Process equipment (i.e. lines, filters, pumps and reaction units) may accumulate significant levels of radioactive daughters and show a gamma radiation reading during operation. A potential external radiation hazard exists at or near any pipe valve or vessel containing a Radon enriched stream, or containing internal deposits of radioactive material due to the transmission of gamma radiation through its wall. Field studies reported in the literature have not shown any conditions that subject workers to cumulative exposures in excess of general population limits. Equipment emitting gamma radiation should be presumed to be internally contaminated with alpha emitting decay products which may be a hazard if inhaled or ingested. Protective equipment such as coveralls, gloves, and respirator (NIOSH/MHSA approved for high efficiency particulates and radionuclides, or supplied air) should be worn by personnel entering a vessel or working on contaminated process equipment to prevent skin contamination, ingestion, or inhalation of any residues containing alpha radiation. Airborne contamination may be minimized by handling scale and/or contaminated materials in a wet state.

Notice to reader

Section 16. Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET

Airgas

Nitrogen, Refrigerated Liquid

Section 1. Identification

GHS product identifier	: Nitrogen, Refrigerated Liquid
Chemical name	: nitrogen
Other means of identification	: LIN, Cryogenic Liquid Nitrogen, Liquid Nitrogen, Liquid Nitrogen NF, Liquid Nitrogen FG
Product use	: Synthetic/Analytical chemistry.
Synonym	: LIN, Cryogenic Liquid Nitrogen, Liquid Nitrogen, Liquid Nitrogen NF, Liquid Nitrogen FG
SDS #	: 001188
Supplier's details	: Airgas USA, LLC and its affiliates 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5283 1-610-687-5253
24-hour telephone	: 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : GASES UNDER PRESSURE - Refrigerated liquefied gas

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : Contains refrigerated gas; may cause cryogenic burns or injury.
May cause frostbite.

Precautionary statements

General

: Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Always keep container in upright position. Do not change or force fit connections. Avoid spills. Do not walk or roll equipment over spills.

Prevention

: Wear cold insulating gloves and face shield.
Use and store only outdoors or in a well ventilated place.

Response

: Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical attention.

Storage

: Store in a well-ventilated place.

Disposal

: Not applicable.

Hazards not otherwise classified

: Liquid can cause burns similar to frostbite.

Section 3. Composition/information on ingredients

Substance/mixture	: Substance
Chemical name	: nitrogen
Other means of identification	: LIN, Cryogenic Liquid Nitrogen, Liquid Nitrogen, Liquid Nitrogen NF, Liquid Nitrogen FG

CAS number/other identifiers

CAS number	: 7727-37-9
Product code	: 001188

Ingredient name	%	CAS number
NITROGEN, REFRIGERATED LIQUID	100	7727-37-9

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
Inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Skin contact	: Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. In case of contact with liquid, warm frozen tissues slowly with lukewarm water and get medical attention. Do not rub affected area. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if adverse health effects persist or are severe. Ingestion of liquid can cause burns similar to frostbite. If frostbite occurs, get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. As this product rapidly becomes a gas when released, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: Extremely cold material. Liquid can cause burns similar to frostbite.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: Extremely cold material. Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.
Frostbite	: Try to warm up the frozen tissues and seek medical attention.
Ingestion	: Ingestion of liquid can cause burns similar to frostbite.

Over-exposure signs/symptoms

Eye contact	: Adverse symptoms may include the following: frostbite
Inhalation	: No specific data.

Section 4. First aid measures

- Skin contact** : Adverse symptoms may include the following: frostbite
- Ingestion** : Adverse symptoms may include the following: frostbite

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

- Specific hazards arising from the chemical** : Contains gas under pressure. Contains refrigerated gas. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials: nitrogen oxides

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. For incidents involving large quantities, thermally insulated undergarments and thick textile or leather gloves should be worn.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Immediately contact emergency personnel. Stop leak if without risk.
- Large spill** : Immediately contact emergency personnel. Stop leak if without risk. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Contains refrigerated gas. Do not get in eyes or on skin or clothing. Avoid breathing gas. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
Never allow any unprotected part of the body to touch uninsulated pipes or vessels that contain cryogenic liquids. Prevent entrapment of liquid in closed systems or piping without pressure relief devices. Some materials may become brittle at low temperatures and will easily fracture.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
NITROGEN, REFRIGERATED LIQUID	Oxygen Depletion [Asphyxiant]

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. If contact with the liquid is possible, insulated gloves suitable for low temperatures should be worn. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Section 8. Exposure controls/personal protection

- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid. [Cryogenic liquid]
- Color** : Colorless.
- Molecular weight** : 28.01 g/mole
- Molecular formula** : N₂
- Boiling/condensation point** : -195.8 °C
- Melting/freezing point** : -210°C (-346°F)
- Critical temperature** : -146.95°C (-232.5°F)
- Odor** : Odorless.
- Odor threshold** : Not available.
- pH** : Not available.
- Flash point** : Not applicable.
- Burning time** : Not applicable.
- Burning rate** : Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : 0.967 (Air = 1) Liquid Density@BP: 50.46 lb/ft³ (808.3 kg/m³)
- Specific Volume (ft³/lb)** : 13.8889
- Gas Density (lb/ft³)** : 0.072
- Relative density** : Not available.
- Solubility** : Not available.
- Solubility in water** : 0.023 g/l
- Partition coefficient: n-octanol/water** : 0.67
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- SADT** : Not available.
- Viscosity** : Not available.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Extremely cold material. Liquid can cause burns similar to frostbite.

Inhalation : No known significant effects or critical hazards.

Section 11. Toxicological information

- Skin contact** : Extremely cold material. Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.
- Ingestion** : Ingestion of liquid can cause burns similar to frostbite.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:, frostbite
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:, frostbite
- Ingestion** : Adverse symptoms may include the following:, frostbite

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

Not available.

- General** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
NITROGEN, REFRIGERATED LIQUID	0.67	-	low

Mobility in soil

- Soil/water partition coefficient (K_{oc})** : Not available.






Section 12. Ecological information

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1977	UN1977	UN1977	UN1977	UN1977
UN proper shipping name	NITROGEN, REFRIGERATED LIQUID	NITROGEN, REFRIGERATED LIQUID	NITROGEN, REFRIGERATED LIQUID	NITROGEN, REFRIGERATED LIQUID	NITROGEN, REFRIGERATED LIQUID
Transport hazard class(es)	2.2 	2.2 	2.2 	2.2 	2.2 
Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Additional information	<u>Limited quantity</u> Yes. <u>Packaging instruction</u> Passenger aircraft Quantity limitation: 75 kg Cargo aircraft Quantity limitation: 150 kg	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2). <u>Explosive Limit and Limited Quantity Index</u> 0.125 <u>Passenger Carrying Road or Rail Index</u> 75	-	-	<u>Passenger and Cargo Aircraft</u> Quantity limitation: 50 kg <u>Cargo Aircraft Only</u> Quantity limitation: 500 kg

“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: This material is listed or exempted.
United States inventory (TSCA 8b): This material is listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Sudden release of pressure

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
NITROGEN, REFRIGERATED LIQUID	100	No.	Yes.	No.	No.	No.

State regulations

Massachusetts : This material is listed.

New York : This material is not listed.

New Jersey : This material is listed.

Pennsylvania : This material is listed.

International regulations

International lists

National inventory

Australia : This material is listed or exempted.

Canada : This material is listed or exempted.

China : This material is listed or exempted.

Europe : This material is listed or exempted.

Japan : Not determined.

Malaysia : Not determined.

New Zealand : This material is listed or exempted.

Philippines : This material is listed or exempted.

Republic of Korea : This material is listed or exempted.

Taiwan : Not determined.

Canada

WHMIS (Canada) : Class A: Compressed gas.

Section 15. Regulatory information

CEPA Toxic substances: This material is not listed.

Canadian ARET: This material is not listed.

Canadian NPRI: This material is not listed.

Alberta Designated Substances: This material is not listed.

Ontario Designated Substances: This material is not listed.

Quebec Designated Substances: This material is not listed.

Section 16. Other information

Canada Label requirements : Class A: Compressed gas.

Hazardous Material Information System (U.S.A.)

Health	3
Flammability	0
Physical hazards	2

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
Press. Gas Refr. Liq. Gas, H281	Expert judgment

History

Date of printing : 3/30/2016

Date of issue/Date of revision : 3/30/2016

Date of previous issue : 3/30/2016

Version : 0.06

Key to abbreviations

: ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

Section 16. Other information

UN = United Nations

References

: Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



**Arch
Chemicals,
Inc.**

SAFETY DATA SHEET

FOR ANY EMERGENCY, 24 HOURS / 7 DAYS, CALL:

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC®:

FOR ALL SDS QUESTIONS & REQUESTS, CALL:

1-800-654-6911 (OUTSIDE
USA: 1-423-780-2970)

1-800-424-9300 (OUTSIDE
USA: 1-703-527-3887)

1-800-511-MSDS (OUTSIDE
USA: 1-423-780-2347)

PRODUCT NAME: Pulsar Plus Calcium Hypochlorite Briquettes

EPA Registration Number: 1258-1179

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Arch Chemicals, Inc.
1200 Bluegrass Lakes Parkway
Alpharetta, GA 30004

REVISION DATE: 05/26/2015

SUPERCEDES: 09/12/2011

MSDS Number: 000000022378

SYNONYMS: None

CHEMICAL FAMILY: Hypochlorite

DESCRIPTION / USE: Sanitizer and Oxidizer Water treatment
chemical

FORMULA: Not Applicable/Mixture

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Oxidizing solids : Category 2

Acute toxicity (Oral) : Category 4

Skin corrosion : Category 1B

Serious eye damage : Category 1

Specific target organ toxicity -
single exposure : Category 3

GHS Label element

Hazard pictograms :



Signal word : Danger

Hazard statements : H272 May intensify fire; oxidiser.

Pulsar Plus Calcium Hypochlorite Briquettes

REVISION DATE : 05/26/2015

Page 1 of 13



H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.

Precautionary statements

- Prevention:**
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220 Keep/Store away from clothing/ combustible materials.
P221 Take any precaution to avoid mixing with combustibles.
P260 Do not breathe vapours.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- Response:**
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/ physician.
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.
- Storage:**
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
- Disposal:**
P501 Dispose of contents/container in accordance with local regulation.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>CAS OR CHEMICAL NAME</u>	<u>CAS #</u>	<u>% RANGE</u>
CALCIUM HYPOCHLORITE	7778-54-3	60 - 80
SODIUM CHLORIDE	7647-14-5	10 - 20



CALCIUM CHLORATE	10137-74-3	0 - 5
CALCIUM CHLORIDE	10043-52-4	0 - 5
CALCIUM HYDROXIDE	1305-62-0	0 - 4
CALCIUM CARBONATE	471-34-1	0 - 4
1,2,4-BUTANETRICARBOXYLIC ACID, 2-PHOSPHONO-, SODIUM SALT	40372-66-5	0.2 - 0.8
Water	7732-18-5	4.0 - 8.5

SECTION 4. FIRST AID MEASURES

General Advice:	Call a poison control center or doctor for treatment advice. For 24-hour emergency medical assistance, call Arch Chemical Emergency Action Network at 1-800-654-6911. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
Inhalation:	IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
Skin Contact:	IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Eye Contact:	IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
Ingestion:	IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
Notes to Physician:	Probable mucosal damage may contraindicate the use of gastric lavage.

SECTION 5. FIREFIGHTING MEASURES



Flammability Summary (OSHA):

This product is chemically reactive with many substances. Any contamination of the product with other substances by spill or otherwise may result in a chemical reaction and fire., This product is a strong oxidizer which is capable of intensifying a fire once started., Product is not known to be flammable, combustible or pyrophoric.

Flammable Properties

Flash Point:

Not applicable

Autoignition Temperature:

Not applicable

Extinguishing Media:

Water only. Do not use dry extinguishers containing ammonium compounds.

Fire Fighting Instructions:

Use water to cool containers exposed to fire. See Section 6 for protective equipment for fire fighting.

Upper Flammable / Explosive Limit,
% in air:

Not applicable

Lower Flammable / Explosive Limit,
% in air:

Not applicable

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Protection for Emergency
Situations:

Response to a large quantity spill (100 pounds or greater) or when dusting or decomposition gas exposure could occur requires the use of a positive pressure full face supplied air respirator or self contained breathing apparatus (SCBA), chemical resistant gloves, coveralls and boots. In case of fire, this personal protective equipment should be used in addition to normal fire fighter equipment.

Spill Mitigation Procedures

Air Release:

Vapors may be suppressed by the use of water fog. All water utilized to assist in fume suppression, decontamination or fire suppression may be contaminated and must be contained before disposal and/or treatment.

Water Release:

This product is heavier than water. This material is soluble in water. Monitor all exit water for available chlorine and pH. Advise local authorities of any contaminated water release.

Land Release:

Contact 1-800-654-6911 immediately. DANGER: All spills of this product should be treated as contaminated. Contaminated product may initiate a chemical reaction that may spontaneously ignite any combustible material present, resulting in a fire of great intensity. In case of a spill, separate all spilled product from packaging, debris and other material. Using a clean broom or shovel, place all spilled product into plastic bags, and place those bags into a clean, dry disposal container, properly marked and labeled. Disposal containers made of plastic or metal are recommended. Do not seal disposal containers tightly. Immediately remove all product in disposal containers to an isolated area outdoors. Place all damaged packaging material in a disposal container of water to assure decontamination (i.e. removal of all product) before disposal. Place all undamaged packaging in a clean, dry container properly marked and labeled. Call for disposal procedures.



Additional Spill Information :

Hazardous concentrations in air may be found in local spill area and immediately downwind. Remove all sources of ignition. Stop source of spill as soon as possible and notify appropriate personnel. Dispose of spill residues per guidelines under Section 13, Disposal Consideration. This material may be neutralized for disposal; you are requested to contact Arch Chemicals at 1-800-654-6911 before beginning any such procedure. **FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC: 1-800-424-9300** REPORTABLE QUANTITY: 10 lbs. (as calcium hypochlorite) per 40 CFR 302.4.

SECTION 7. HANDLING AND STORAGE

Handling:

Avoid inhalation of dust and fumes. Do not take internally. Avoid contact with skin, eyes and clothing. Upon contact with skin or eyes, wash off with water. Remove contaminated clothing and wash before reuse.

Storage:

Keep product tightly sealed in original containers. Store product in a cool, dry, well-ventilated area. Store away from combustible or flammable products. Keep product packaging clean and free of all contamination, including, e.g. other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, all corrosive liquids, flammable or combustible materials, etc.

Shelf Life Limitations:

Do not store product where the average daily temperature exceeds 95° F. Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products. Shelf life (that is, the period of time before the product goes below stated label strength) is determined by storage time and temperatures. Store in a cool, dry and well ventilated area. Prolonged storage at elevated temperatures will significantly shorten the shelf life. Storage in a climate controlled storage area or building is recommended in those areas where extremes of high temperature occur.

Incompatible Materials for Storage:

Do not allow product to come in contact with other materials, including e.g. other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, all corrosive liquids, flammable or combustible materials, etc. A chemical reaction with such substances can cause a fire of great intensity.

Do Not Store At temperatures Above:

Average daily temperature of 35° C / 95° F. Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products.



SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Local exhaust ventilation or other engineering controls are normally required when handling or using this product to keep airborne exposures below the TLV, PEL or other recommended exposure limit.

Protective Equipment for Routine Use of Product

Respiratory Protection : Wear a NIOSH approved respirator if levels above the exposure limits are possible.

Respirator Type : A NIOSH approved full-face air purifying respirator equipped with combination chlorine/P100 cartridges. Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres or if exposure concentrations exceed ten (10) times the published limit.

Skin Protection : Wear impervious gloves to avoid skin contact. A full impervious suit is recommended if exposure is possible to a large portion of the body. A safety shower should be provided in the immediate work area.

Eye Protection: Use chemical goggles. Emergency eyewash should be provided in the immediate work area.

Protective Clothing Type: Neoprene, Nitrile, Natural rubber (This includes: gloves, boots, apron, protective suit)

Components with workplace control parameters

Components (CAS-No.)	Value	Control parameters	Basis (Update)
CALCIUM HYPOCHLORITE (7778-54-3)	TWA	1 mg/m3	ARCH OEL *
CALCIUM HYPOCHLORITE (7778-54-3)	Conc	37 - 48 mg/m3	NIOSH/GUIDE IDLH
CALCIUM HYDROXIDE (1305-62-0)	TWA	5 mg/m3	ACGIH (02 2014)

ARCH OEL: Arch Recommended Occupational Exposure Guideline.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: solid

Form: Tablet

Color: white

Odor: Chlorine-like

Molecular Weight: 143.00 g/mol

pH : 10.4 - 10.8 (1% solution in neutral, distilled water) (@ 25 Deg. C)

Boiling Point: Not applicable

Freezing Point: Not applicable

Density: 1.9g/cc

Vapor Pressure: (@ 25 Deg. C) Not applicable



Vapor Density:	Not applicable
Viscosity:	Not applicable
Fat Solubility:	No data
Solubility in Water:	18 % (@ 25 Deg. C) Product also contains calcium hydroxide and calcium carbonate which will leave a residue.
Partition coefficient n-octanol/water:	Not applicable
Evaporation Rate:	Not applicable
Oxidizing:	Oxidizer
Volatiles, % by vol.:	Not applicable
VOC Content	Not applicable
HAP Content	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Stability and Reactivity Summary:	Product is not sensitive to mechanical shock or impact. Product is not sensitive to electrical static discharge. Product will not undergo hazardous polymerization. Product is an NFPA Class 3 oxidizer which can cause a severe increase in fire intensity. Not pyrophoric. Not an organic peroxide. If subjected to excessive temperatures, the product may undergo rapid decomposition, evolution of chlorine gas, and heat sufficient to ignite combustible substances. If product is exposed to small amounts of water, it can react violently to produce heat and toxic gases and spatter. Use copious amounts of water for fires involving this product.
Conditions to Avoid:	Do not store next to heat source, in direct sunlight, or elevated storage temperature. Do not store where the daily average temperature exceeds 95 °F. Prevent ingress of humidity and moisture into container or package. Always close the lid.
Chemical Incompatibility:	This product is chemically reactive with many substances, including, e.g., other pool treatment products, acids, organics, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, corrosive, flammable or combustible materials. Do not allow product to contact any foreign matter, including other water treatment products. Contamination or improper use may cause a fire of great intensity, explosion or the release of toxic gases. If product is exposed to small amounts of water, it can react violently to produce heat and toxic gases and spatter.
Hazardous Decomposition Products:	Chlorine
Decomposition Temperature:	170 - 180 °C - , 338 - 356 °F-

SECTION 11. TOXICOLOGICAL INFORMATION

Component Animal Toxicology

Oral LD50 value:

CALCIUM LD50 (65% calcium hypochlorite) 850 mg/kg Rat
HYPOCHLORITE



SODIUM CHLORIDE	LD50	= 3,000 mg/kg	Rat
CALCIUM CHLORIDE	LD50	= 1,000 mg/kg	Rat
CALCIUM HYDROXIDE	LD50	= 7,340 mg/kg	Rat

Component Animal Toxicology

Dermal LD50 value:

CALCIUM HYPOCHLORITE	LD50 (65% calcium hypochlorite)	> 2,000 mg/kg	Rabbit
SODIUM CHLORIDE	LD50	> 10,000 mg/kg	Rabbit
CALCIUM CHLORIDE	LD50	= 2,630 mg/kg	Rat
CALCIUM HYDROXIDE	No data		

Component Animal Toxicology

Inhalation LC50 value:

CALCIUM HYPOCHLORITE	Inhalation LC50 1 h (65% calcium hypochlorite), (Nose Only)	=	2.04 mg/l
	Rat		
	Inhalation LC50 4 h (65% calcium hypochlorite), (Nose Only)	=	0.51 mg/l
	Rat		
SODIUM CHLORIDE	Inhalation LC50 1 h	>	42 mg/l Rat
CALCIUM CHLORIDE	No data		
CALCIUM HYDROXIDE	No data		

Product Animal Toxicity

Oral LD50 value: LD50 Approximately 800 mg/kg Rat

Dermal LD50 value: LD50 > 2,000 mg/kg Rabbit

Inhalation LC50 value: Inhalation LC50 1.00 h (Nose Only) > 2.04 mg/l Rat Inhalation LC50 4 h (Nose Only) > 0.51 mg/l Rat Inhalation LC50 1 h (Nose Only) > 2.04 mg/l Rat Inhalation LC50 4 h (Nose Only) > 0.51 mg/l Rat

Skin Irritation: DRY MATERIAL CAUSES MODERATE SKIN IRRITATION., WET MATERIAL CAUSES SKIN BURNS.

Eye Irritation: Corrosive to eyes.

Skin Sensitization: This material is not known or reported to be a skin or respiratory sensitizer.

Acute Toxicity: This product is corrosive to all tissues contacted and upon inhalation, may cause irritation to mucous membranes and respiratory tract. The dry material is irritating to the skin. However when wet, it will produce burns to the skin.

Subchronic / Chronic Toxicity: There are no known or reported effects from repeated exposure except those secondary to burns.

Reproductive and Developmental Toxicity: Calcium hypochlorite has been tested for teratogenicity in laboratory animals. Results of this study have shown that calcium hypochlorite is not a teratogen.



CALCIUM CHLORIDE

Not known or reported to cause reproductive or developmental toxicity.

Mutagenicity:

Calcium hypochlorite has been tested in the Dominant lethal assay in male mice, and it did not induce a dominant lethal response. Calcium hypochlorite has been reported to produce mutagenic activity in two in vitro assays. It has, however, been shown to lack the capability to produce mutations in animals based on results from the micronucleus assay. In vitro assays frequently are inappropriate to judge the mutagenic potential of bactericidal chemicals due to a high degree of cellular toxicity. The concentration which produces mutations in these in vitro assays is significantly greater than the concentrations used for disinfection. Based on high cellular toxicity in in vitro assays and the lack of mutagenicity in animals, the risk of genetic damage to humans is judged not significant.

CALCIUM CHLORIDE

This product was determined to be non-mutagenic in the Ames assay. It was also shown to be non-clastogenic in the chromosomal aberration test.

Carcinogenicity:

This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA. One hundred mice were exposed dermally 3 times a week for 18 months to a solution of calcium hypochlorite. Histopathological examination failed to show an increased incidence of tumors. IARC (International Agency for Research on Cancer) reviewed studies conducted with several hypochlorite salts. IARC has classified hypochlorite salts as having inadequate evidence for carcinogenicity to humans and animals. IARC therefore considers hypochlorite salts to be not classifiable as to their carcinogenicity to humans (Group 3 Substance).

CALCIUM CHLORIDE

This chemical is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.

SECTION 12. ECOLOGICAL INFORMATION

Overview: Highly toxic to fish and other aquatic organisms.

Ecological Toxicity Values for: CALCIUM HYPOCHLORITE

Bluegill	-	(nominal, static). 96 h LC50 0.088 mg/l
Rainbow trout (Salmo gairdneri),	-	(nominal, static). 96 h LC50 0.16 mg/l
Daphnia magna,	-	(nominal, static). 48 h LC50 0.11 mg/l
Bobwhite quail	-	Dietary LC50 > 5,000 ppm
Mallard ducklings	-	Dietary LC50 > 5,000 ppm
Bobwhite quail	-	Oral LD50 3,474 mg/kg

Ecological Toxicity Values for: CALCIUM CHLORIDE

Bluegill	-	(nominal, static). 96 h LC50 = 10,650 mg/l
Mosquito fish	-	(nominal, static). 96 h LC50 = 13,400 mg/l

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- Pimephales promelas (fathead minnow) - (nominal, static). 96 h LC50 = 4,630 mg/l
- Daphnia magna, - (nominal, static). 48 h LC50= 2,770 mg/l
- Ceriodaphnia dubia - (nominal, static). 48 h LC50= 1,830 mg/l
- Nitzschia linearis (diatom) - (nominal, static). 5 day LC50 = 3,130 mg/l

SECTION 13. DISPOSAL CONSIDERATIONS

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THE MATERIAL. THE USER OF THE MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.

Waste Disposal Summary : If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D001. If this product becomes a waste, it will be a hazardous waste which is subject to the Land Disposal restrictions under 40 CFR 268 and must be managed accordingly. As a hazardous solid waste, it must be disposed of in accordance with local, state and federal regulations.

Disposal Methods : As a hazardous solid waste it should be disposed of in accordance with local, state and federal regulations.

Potential US EPA Waste Codes : D001

SECTION 14. TRANSPORT INFORMATION

DOT

UN number : 1748
Description of the goods : Calcium hypochlorite mixtures dry
Class : 5.1
Packing group : III
Labels : 5.1
Emergency Response : 140
Guidebook Number

TDG

UN number : 1748
Description of the goods : CALCIUM HYPOCHLORITE MIXTURE, DRY
Class : 5.1
Packing group : II



Labels : 5.1

IATA

UN number : 1748
Description of the goods : Calcium hypochlorite mixture, dry
Class : 5.1
Packing group : III
Labels : 5.1
Packing instruction (cargo aircraft) : 563
Packing instruction (passenger aircraft) : 559
Packing instruction (passenger aircraft) : Y546

IMDG-CODE

UN number : 1748
Description of the goods : CALCIUM HYPOCHLORITE MIXTURE, DRY
Class : 5.1
Packing group : III
Labels : 5.1
EmS Number 1 : F-H
EmS Number 2 : S-Q

Marine pollutant : yes

SECTION 15. REGULATORY INFORMATION

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals.

Signal word : DANGER!
Hazard statements : Causes substantial but temporary eye injury.
Corrosive. Causes skin burns.
Corrosive. Causes irreversible eye damage.
This pesticide is toxic to fish.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Calcium hypochlorite	7778-54-3	10	13

SARA 302



No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

Massachusetts Right To Know

Calcium hypochlorite	7778-54-3
Calcium chlorate	10137-74-3
Calcium carbonate	471-34-1
Calcium dihydroxide	1305-62-0

Pennsylvania Right To Know

Calcium hypochlorite	7778-54-3
Sodium chloride	7647-14-5
Calcium chlorate	10137-74-3
Calcium chloride	10043-52-4
Calcium carbonate	471-34-1
Calcium dihydroxide	1305-62-0

New Jersey Right To Know

Calcium hypochlorite	7778-54-3
Sodium chloride	7647-14-5
Calcium chlorate	10137-74-3
Calcium chloride	10043-52-4
Calcium carbonate	471-34-1
Calcium dihydroxide	1305-62-0

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

TSCA : This is an EPA registered pesticide.

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

SECTION 16. OTHER INFORMATION

SECTIONS REVISED: 1, 14
Major References : Available upon request.

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**Arch
Chemicals,
Inc.**

SAFETY DATA SHEET

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THE INFORMATION IN THIS MSDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. ARCH CHEMICALS BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION BUT, MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MSDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT ARCH CHEMICALS MSDS CONTROL AT THE PHONE NUMBER ON THE FRONT PAGE TO MAKE CERTAIN THAT THIS DOCUMENT IS CURRENT. .

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name ARMAFLEX 520 ADHESIVE
Synonym(s) ARMACELL ARMAFLEX 520

1.2 Uses and uses advised against

Use(s) ADHESIVE

1.3 Details of the supplier of the product

Supplier name ARMACELL AUSTRALIA PTY LTD
Address 13 - 17 Nathan Road, Dandenong, Victoria, 3175, AUSTRALIA
Telephone (03) 8710 5999
Fax (03) 8710 5900
Email info.au@armacell.com
Website <http://www.armacell.com.au>

1.4 Emergency telephone number(s)

Emergency (03) 8710 5999, 0418 607 066

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO AUSTRALIAN WHS REGULATIONS

GHS classification(s) Aquatic Toxicity (Chronic): Category 2
 Serious Eye Damage / Eye Irritation: Category 2A
 Skin Corrosion/Irritation: Category 2
 Specific Target Organ Systemic Toxicity (Single Exposure): Category 3
 Specific Target Organ Systemic Toxicity (Repeated Exposure): Category 2
 Toxic to Reproduction: Category 2
 Flammable Liquids: Category 2
 Aspiration Hazard: Category 1

2.2 Label elements

Signal word

DANGER

Pictogram(s)



Hazard statement(s)

H225 Highly flammable liquid and vapour.
 H304 May be fatal if swallowed and enters airways.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H336 May cause drowsiness or dizziness.
 H361 Suspected of damaging fertility or the unborn child.
 H373 May cause damage to organs through prolonged or repeated exposure.
 H411 Toxic to aquatic life with long lasting effects.

PRODUCT NAME ARMAFLEX 520 ADHESIVE**Prevention statement(s)**

P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting equipment.
P243	Take precautionary measures against static discharge.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response statement(s)

P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P321	Specific treatment is advised - see first aid instructions.
P331	Do NOT induce vomiting.
P362	Take off contaminated clothing and wash before re-use.
P370 + P378	In case of fire: Use appropriate media for extinction.
P391	Collect spillage.

Storage statement(s)

P403 + P233 + P235	Store in a well-ventilated place. Keep cool. Keep container tightly closed.
P405	Store locked up.

Disposal statement(s)

P501	Dispose of contents/container in accordance with relevant regulations.
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2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
N-HEXANE	110-54-3	203-777-6	30 to 40%
ACETONE	67-64-1	200-662-2	20 to 30%
TOLUENE	108-88-3	203-625-9	10 to 20%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. To protect rescuer, use a Type A (Organic vapour) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.
First aid facilities	Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

Acute: Irritating to the skin. Vapours may cause drowsiness and dizziness. Chronic: Central nervous system (CNS), liver and kidney damage. Possible risk of harm to the unborn child.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide or foam. Prevent contamination of drains and waterways.

5.2 Special hazards arising from the substance or mixture

Highly flammable. May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition. Vapour may form explosive mixtures with air. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights and mobile phones when handling. Earth containers when dispensing fluids.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

- 3YE
- 3 Alcohol Resistant Foam is the preferred firefighting medium but, if it is not available, normal foam can be used.
- Y Risk of violent reaction or explosion. Wear full fire kit and breathing apparatus. Contain spill and run-off.
- E Evacuation of people in and around the immediate vicinity of the incident should be considered.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal. Eliminate all sources of ignition.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, preferably flammables store, removed from direct sunlight, incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Large storage areas should have appropriate ventilation and fire protection systems.

7.3 Specific end use(s)

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Acetone	SWA (AUS)	500	1185	1000	2375
Toluene	SWA (AUS)	50	191	150	574
n-Hexane	SWA (AUS)	20	72	--	--

Biological limits

Ingredient	Determinant	Sampling Time	BEI
ACETONE	Acetone in urine	End of shift	-
	Aniline released from haemoglobin in blood	End of shift	-
	p-Aminophenol in urine	End of shift	50 mg/L
N-HEXANE	2,5-Hexanedione in urine (without hydrolysis)	End of shift at end of workweek	0.4 mg/L
TOLUENE	o-Cresol in urine	End of shift	0.02 mg/L
	Toluene in urine	End of shift	0.03 mg/L
	Toluene in blood	Prior to last shift of workweek	0.02 mg/L

Reference: ACGIH Biological Exposure Indices

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended. Flammable/ explosive vapours may accumulate in poorly ventilated areas. Vapours may travel some distance to an ignition source and flash back. Maintain vapour levels below the recommended exposure standard.

PPE

Eye / Face	Wear splash-proof goggles.
Hands	Wear PVA or viton (R) gloves.
Body	Wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Type A (Organic vapour) respirator. At high vapour levels, wear an Air-line respirator. If using product in a confined area, wear Self Contained Breathing Apparatus (SCBA).



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	YELLOW LIQUID
Odour	SOLVENT ODOUR
Flammability	HIGHLY FLAMMABLE
Flash point	-20°C
Boiling point	> 66°C
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	> 1 (Air = 1)
Specific gravity	0.82
Solubility (water)	INSOLUBLE
Vapour pressure	180 mm Hg @ 20°C
Upper explosion limit	13 % (based on hexane and acetone)
Lower explosion limit	1.1 % (based on hexane and acetone)
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	155 cps to 195 cps
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

% Volatiles	> 60 %
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10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), heat and ignition sources.

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Information available for the product:

No known toxicity data is available for this product. Based on available data, the classification criteria are not met.

Information available for the ingredient(s):

Ingredient	Oral Toxicity (LD50)	Dermal Toxicity (LD50)	Inhalation Toxicity (LC50)
N-HEXANE	25 g/kg (rat)	3000 mg/kg (rabbit)	48000 ppm/4 hours (rat)
ACETONE	3000 mg/kg (mouse)	> 9400 uL/kg (guinea)	44000 mg/m ³ /4 hours
TOLUENE	636 mg/kg (rat)	14100 µL/kg (rabbit)	400 ppm/24 hours

Skin

Irritating to the skin. Contact may result in irritation, redness, rash and dermatitis.

Eye

Irritating to the eyes. Contact may result in irritation, lacrimation, pain and redness.

Sensitization

This product is not known to be a skin or respiratory sensitiser.

Mutagenicity

This product is not classified as a mutagen.

Carcinogenicity

This product is not classified as a carcinogen.

Reproductive

Suspected of damaging fertility or the unborn child.

STOT – single exposure

Over exposure may result in dizziness and drowsiness.

STOT – repeated exposure

Long-term exposure to low concentrations damages the respiratory and central nervous system. Symptoms include pulmonary irritation, headaches, dizziness, muscular fatigue, weakness and occasional, transient tremors.

Aspiration

May be fatal if swallowed and enters airways.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

If aromatic hydrocarbons are released to soil, they will evaporate from near-surface soil & leach to groundwater. Biodegradation occurs in soil & groundwater but may be slow, especially at high concentrations, which can be toxic to microorganisms. Will exist largely as vapour in air. Half life in atmosphere depends on particular hydrocarbon (eg 1-2 days (xylene); 3 hrs-1 day (toluene)).

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Wearing the protective equipment outlined, ensure all ignition sources are extinguished. For small quantities, absorb on paper, sand or similar and evaporate under a fume cupboard or open area. For large volumes, atomise into incinerator (mixing with more flammable solvent if required) or recycle by gravimetric separation, distilling & reusing. Contact the manufacturer/supplier for additional information (if required).
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1133	1133	1133
14.2 Proper Shipping Name	ADHESIVES containing flammable liquid	ADHESIVES containing flammable liquid	ADHESIVES containing flammable liquid
14.3 Transport hazard class	3	3	3
14.4 Packing Group	II	II	II

14.5 Environmental hazards No information provided

14.6 Special precautions for user

Hazchem code	•3YE
GTEPG	3A1
EMS	F-E, S-D

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule	Classified as a Schedule 5 (S5) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).										
Classifications	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals. The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].										
Hazard codes	<table> <tr> <td>F</td><td>Flammable</td></tr> <tr> <td>N</td><td>Dangerous for the environment</td></tr> <tr> <td>Repr.</td><td>Reproductive toxin</td></tr> <tr> <td>Xi</td><td>Irritant</td></tr> <tr> <td>Xn</td><td>Harmful</td></tr> </table>	F	Flammable	N	Dangerous for the environment	Repr.	Reproductive toxin	Xi	Irritant	Xn	Harmful
F	Flammable										
N	Dangerous for the environment										
Repr.	Reproductive toxin										
Xi	Irritant										
Xn	Harmful										

PRODUCT NAME ARMAFLEX 520 ADHESIVE

Risk phrases	R11	Highly flammable.
	R36/38	Irritating to eyes and skin.
	R48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation.
	R51/53	Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.
	R62	Possible risk of impaired fertility.
	R63	Possible risk of harm to the unborn child.
	R65	Harmful: May cause lung damage if swallowed.
Safety phrases	R67	Vapours may cause drowsiness and dizziness.
	S16	Keep away from sources of ignition - No smoking.
	S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
	S29	Do not empty into drains.
	S33	Take precautionary measures against static discharges.
	S35	This material and its container must be disposed of in a safe way.
	S51	Use only in well ventilated areas.
Inventory listing(s)	S61	Avoid release to the environment. Refer to special instructions/safety data sheets.
	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.	

16. OTHER INFORMATION

Additional information	<p>RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.</p> <p>WORK PRACTICES - SOLVENTS: Organic solvents may present both a health and flammability hazard. It is recommended that engineering controls should be adopted to reduce exposure where practicable (for example, if using indoors, ensure explosion proof extraction ventilation is available). Flammable or combustible liquids with explosive limits have the potential for ignition from static discharge. Refer to AS 1020 (The control of undesirable static electricity) and AS 1940 (The storage and handling of flammable and combustible liquids) for control procedures.</p> <p>PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.</p> <p>HEALTH EFFECTS FROM EXPOSURE: It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a ChemAlert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.</p>
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PRODUCT NAME ARMAFLEX 520 ADHESIVE**Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

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[End of SDS]



SECTION 1 - IDENTIFICATION

Manufacturer:

Black Swan Mfg. Co.
4540 W. Thomas St.
Chicago, IL 60651-3318
Tel.: 800-252-5796
Fax: 773-227-3705
Web Site : www.blackswanmfg.com
E-mail : info@blackswanmfg.com

For any Transportation or Medical Chemical Emergencies call:

INFOTRAC(800) 535-5053 **OR** (352) 323-3500

24 hours per day - 7 days a week

Product Name: No-Hub Sealant**Recommended Use:** A sealant specifically designed as a coating for cast iron pipe to improve leak-free sealing of no-hub couplings.

SECTION 2 – HAZARD(S) IDENTIFICATION

Labels**Signal Word**

Danger

HMIS

HEALTH	1
FLAMMABILITY	3
REACTIVITY	0

NEPA**HEALTH HAZARD**

4 – Deadly
3 – Extreme Danger
2 – Hazardous
1 – Slight Hazardous
0 – Normal Material

SPECIFIC HAZARD

Oxidizer OX
Acid ACID
Alkali ALK
Corrosive COR
Use NO WATER
Radioactive

**FIRE HAZARD**

Flash Points
4 – Below 73°F
3 – Below 100°F
2 – Above 100°F, Not exceeding 200°F
1 – Above 200°F
0 – Will not burn

REACTIVITY

4 – May detonate
3 – Shock and heat may detonate
2 – Violent chemical change
1 – Unstable if heated
0 – Stable

GHS Classification**Health**

Acute Toxicity: Not Established

Skin Irritation: Not Established

Eye Irritation: Not Established

Skin Sensitization: NO

Environmental

Acute Aquatic Toxicity: Not Established

Chronic Aquatic Toxicity: Not Established

Physical

Flammability: Cat. 2

Hazardous Statements

H225: Highly flammable liquid and vapor
H304: May be fatal if swallowed and enters airways
H312: Harmful in contact with skin
H319: Causes serious eye irritation
H332: Harmful if inhaled
H335: May cause respiratory irritation
H336: May cause drowsiness or dizziness

Precautionary Statements

P102: Keep out of reach of children
P103: Read label before use
P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
P233/P235: Keep container tightly closed and cooled
P243: Take precautionary measures against static discharge
P261: Avoid breathing dust/fume/gas/mist/vapors/spray
P262: Do not get in eyes, on skin, or on clothing
P264: Wash thoroughly after handling
P270: Do not eat, drink or smoke when using this product
P271: Use only outdoors or in a well-ventilated area
P280/P284: Wear protective gloves/protective clothing/eye protection/face protection. Wear a NIOSH approved respirator for organic solvents.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Chemicals	CAS#	EINECS#	REACH Pre-registration Number	Approx %
ETHYL ALCOHOL	64-17-5	200-578-6	N/A	25-30%
METHYL ALCOHOL	67-56-1	200-659-6	N/A	1-2%
ETHYL ACETATE	141-78-6	205-500-4	N/A	<1%
ACETONE	67-64-1	200-662-2	N/A	35-45%
POLYVINYL BUTYRAL	7723-18-5	N/A	N/A	10-20%

*Unlisted ingredients are not classified as hazardous according to OSHA 1910.1200.

SECTION 4 – FIRST-AID MEASURES

Inhalation: Move into fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen and call physician.**Skin:** Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water.**Eyes:** Flush with water for 15 minutes. If irritation persists, get medical attention.**Ingestion:** Give 1 or 2 glasses of water. DO NOT INDUCE VOMITING. Contact physician immediately.

GHS SAFETY DATA SHEET

SECTION 5 – FIRE-FIGHTING MEASURES

Fire Hazard: Vapors may travel considerable distance to sources of ignition and flash back.
Combustion Products: None.
Extinguishing Media: Foam, Carbon Dioxide, Dry Chemical.
Unsuitable Extinguishing Media: None Known.
Protective Equipment: Self-contained breathing apparatus {(SCBA), MSHA/NIOSH}. Full protective gear.
Special Fire Fighting Procedures: Evacuate enclosed areas, stay upwind. Closed or confined quarters require self-contained breathing apparatus, positive pressure hose masks or airline masks. Use agents appropriate for surrounding fires.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions: None.
Protective Equipment: Wear suitable respiratory protective equipment.
Emergency Procedures: None.
Environmental Precautions: Avoid runoff into storm sewers, ditches and waterways.
Methods for Cleaning Up: Absorb with suitable inert material. Remove all sources of ignition.

SECTION 7 – HANDLING AND STORAGE

Handling

Use good personal hygiene practice. Avoid inhalation of vapors and personal contact with the product. Repeated and prolonged overexposure to solvents may cause brain and nervous system damage. Concentrating and inhaling the contents may be harmful or fatal.

Storage

Keep and store in a cool, dry place from sources of ignition. Ground during transfer. Keep container tightly closed when not in use.
Incompatible Materials: Strong oxidizing agents, strong acids.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Hazardous Chemicals</u>	<u>Exposure Limits</u>		
	<u>ACGIH-TLV</u>	<u>ACGIH-STEL</u>	<u>OSHA-PEL</u>
ETHYL ALCOHOL	1000 ppm	N/A	1000 ppm
METHYL ALCOHOL	200 ppm	N/A	200 ppm
ETHYL ACETATE	400 ppm	N/A	400 ppm
ACETONE	500 ppm	750 ppm	1000 ppm

Engineering Controls: A source of running water to flush or wash the eyes and skin in case of contact.
Ventilation: Mechanical.
Personal Protective Equipment – Respiratory: If use conditions generate vapors or mists, wear a NIOSH-approved respirator appropriate for those emission levels. Appropriate respirators may be a full face piece or a half mask air-purifying cartridge respirator equipped for organic vapors/mists, a self-contained breathing apparatus in the pressure demand mode, or a supplied-air respirator.
Personal Protective Equipment – Skin: Impermeable gloves. Chemical resistant coveralls.
Personal Protective Equipment – Eyes: Safety glasses with side shields or chemical goggles.

SECTION 9 – PHYSICAL & CHEMICAL PROPERTIES

Appearance:	Amber Viscous Liquid	Flash Point:	65°F (T.C.C.)	Vapor Pressure:	Not Established
Odor:	Characteristic Solvent	Specific Gravity:	Approx. 0.70	Flammability:	Not Established
pH:	Not Established	Solubility (H₂O):	Insoluble	Flammability Limits:	LEL – 0.9%
Melting Point:	Not Established	Evaporation Rate:	> 1.0		UEL – 7.0%
Freezing Point:	Not Established	Vapor Density:	> 1.0		
Boiling Point:	170°F	VOC:	250 g/l		

GHS SAFETY DATA SHEET

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable.

Hazardous polymerization: Will not occur.

Conditions to avoid: Sparks, open flames, hot surfaces and strong oxidizing agents.

Incompatible materials: Strong oxidizing agents, strong acids.

Hazardous decomposition products: Carbon Monoxide, Carbon Dioxide

SECTION 11 – TOXICOLOGICAL INFORMATION

<u>Hazardous Chemicals</u>	<u>Toxicity</u>
	<u>LD₅₀</u> <u>LC₅₀</u>
ETHYL ALCOHOL	N/A N/A
METHYL ALCOHOL	N/A N/A
ETHYL ACETATE	N/A N/A
ACETONE	N/A N/A
POLYVINYL BUTYRAL	N/A N/A

Likely Routes of Exposure: Inhalation, Skin Contact, Eye Contact and Ingestion.

Symptoms and Effect - Inhalation: It is a respiratory tract irritant and anesthetic and causes central nervous system depression (e.g. headache, drowsiness, dizziness, loss of coordination & fatigue). **Skin Contact:** May cause mild skin irritation. Prolonged or repeated contact may cause redness, burning, and drying and cracking of the skin. **Eye Contact:** May cause mild eye irritation. Direct contact with the liquid or exposure to vapors or mists may cause stinging, tearing and redness. **Ingestion:** Ingestion of excessive quantities may cause irritation of the digestive tract and signs of nervous system depression.

Long-Term Effect: None known.

Pre-Existing Conditions: Any pre-existing heart or skin condition or an impaired lung function.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: None known.

Persistence & Degradability: None known.

Bioaccumulative Potential: None known.

Mobility in soil: In normal use, emission of Volatile Organic Compounds (VOC's) to the air takes place, typically at a rate of ≤ 250 g/l.

SECTION 13 – DISPOSAL CONSIDERATION

Dispose of product or container in accordance with federal, state or local regulations.

SECTION 14 – TRANSPORTATION INFORMATION

Shipping Information

Shipping Name: Adhesives, Containing a Flammable Liquid
Hazardous Class: 3
I.D. Number: UN1133
Packing Group: II
Label Required: Flammable Liquid
Marine Pollutant: No

Exception to the rule: If the package that contains the hazardous material is in a small consumer size (Less than 1L), then the rules that apply to shipping hazardous materials do not apply. This is called an "Exception".
This is classified as Consumer Commodity ORM-D.

SECTION 15 – REGULATORY INFORMATION

Precautionary Label Information: Flammable, and Health Hazard.

Risk Phrases: R10-Flammable. R36/37-Irritant to eyes and respiratory system.

Safety Phrases: S2-Keep out of reach of children. S9-Keep container in a well-ventilated place. S16-Keep away from sources of ignition-No smoking. S25-Avoid contact with eyes. S26-In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S33-Take precautionary measures against static discharges.

SECTION 16 – OTHER INFORMATION

Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. Black Swan Mfg. Co. urges the customers receiving this Material Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents and contractors of the information on the sheets.

DATE: 01/01/2017

Safety Data Sheet

SDS ID: Stock Code 76020, 76022

Revision date: May 27, 2015

Section 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: Blue Monster® Nickel Anti-Seize Lubricant and Thread Sealant
Synonyms: None
Chemical family: N/A
Producer: The Mill-Rose Company
7310 Corporate Blvd.
Mentor, OH 44060

Telephone: 800-321-3598 Available during normal business hours

Emergency: 800-321-3598 Available during normal business hours

Section 2. HAZARD IDENTIFICATION

GHS Classification (Hazcom 2012):

Skin Sensitizer Category 1

Carcinogen Category 2

Specific Target Organ Toxicity – Single Exposure Category 1 (Inhalation)

Label Elements:

Danger



Hazard Phrases:

H317 May cause an allergic skin reaction

H370 Causes damage to respiratory tract through inhalation

H351 Suspected of causing cancer through inhalation

Precautionary Phrases:

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe mist or vapor.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P272 Contaminated work clothing should not be allowed out of the workplace.

P280 Wear protective gloves.

P302+P352 IF ON SKIN: Wash with plenty of water.

P333+P313 If skin irritation or rash occurs: Get medical attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

P308+P311 IF exposed or concerned: Call a POISON CENTER or doctor.

P405 Store locked up.

P308+P313 IF exposed or concerned: Get medical attention.

P501 Dispose of contents in accordance with local, regional and national regulations.

Section 3. COMPOSITION / INFORMATION ON INGREDIENTS

Material information:

Name	CAS No.	Weight %
Nickel Powder	7440-02-0	20-30
Graphite	7782-42-5	15-25
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	40-60
Rust inhibitor	Mixture	1-5
Aluminum Powder	7429-90-5	1-5

***Note:** The above weight percentages are represented in ranges as estimates. Due to variation among production batches, component percentages may vary.

Section 4. FIRST AID MEASURES

Inhalation: Not likely under normal conditions of use. If using in high temperature applications where thermal decomposition is likely, use a local exhaust to remove fumes. If dizziness or irritation occurs, seek fresh air.

Skin contact: Wash thoroughly with plenty of water. Get medical attention if irritation persists.

Ingestion: If large amounts ingested, seek medical attention.

Eye contact: Flush eyes with water, holding the eyelids apart. Get medical attention if irritation develops or persists.

Most Important symptoms and effects, both acute and delayed:

Skin contact may cause an allergic reaction. Inhalation of vapors or mist may cause respiratory irritation. Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Indication of any immediate medical attention and special treatment needed:

Immediate medical attention generally not required.

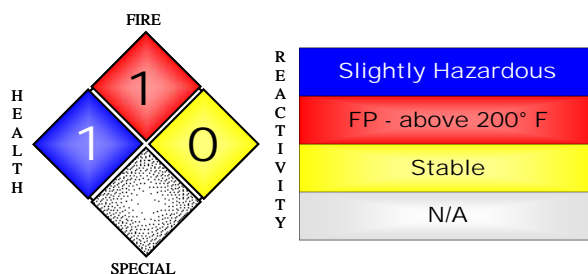
Section 5. FIREFIGHTING MEASURES

Suitable extinguishing media: Use foam, carbon dioxide or dry chemical.

Specific hazards: This compound will not burn unless it is pre-heated. Water fog may be used to cool the containers but do not spray directly into large containers of burning liquids as frothing may occur. Dense smoke and noxious or toxic fumes may be generated in a fire. The thermal decomposition products are highly dependent on the combustion conditions and may yield oxides of nickel, aluminum and carbon. Noxious or toxic fumes may be generated, some of which may be toxic or irritating.

Special protective equipment and precautions for firefighters: Wear NIOSH approved positive pressure, self-contained breathing apparatus and full protective clothing. Cool fire exposed containers with water.

	NFPA rating: HMIS rating:	
Health:	1	1
Flammability:	1	1
Instability/reactivity:	0	0
Other:	N/A	A (PPE)



Section 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Wear appropriate personal protective equipment. Use caution: slip hazard.
Large Spill:	Report spills and releases as required to appropriate authorities..
Methods for Containment and Clean up	Because of its viscous nature, this product is not expected to leak or spill. Collect liquid spill with an inert absorbent material and place into a suitable container for disposal. Clean area thoroughly with mineral spirits.

Section 7. HANDLING AND STORAGE

Handling:	Avoid contact with eyes. Avoid prolonged skin contact. Do not inhale. Do not transfer to unlabeled containers.
Storage:	Store away from extreme heat and open flames. Store away from oxidizers.

Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits:

Name	CAS No.	Exposure Limits:
Nickel Powder	7440-02-0	1.5 mg/m3 TWA ACGIH TLV (inhalable) 1 mg/m3 TWA OSHA PEL
Graphite	7782-42-5	2 mg/m3 TWA ACGIH TLV (respirable) 15 mg/m3 TWA OSHA PEL (total dust) 5 mg/m3 TWA OSHA PEL (respirable fraction)
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	5 mg/m3 TWA ACGIH TLV (inhalable) 5 mg/m3 TWA OSHA PEL
Rust inhibitor	Mixture	None Established
Aluminum Powder	7429-90-5	1 mg/m3 TWA ACGIH TLV (respirable) 15 mg/m3 TWA OSHA PEL (total dust) 5 mg/m3 TWA OSHA PEL (respirable fraction)

All exposure limits listed are 8-hour time weighted average (TWA) — except where noted otherwise.

Time Weighted Average (TWA) is an average exposure over the course of an 8-hour work shift.

A Short Term Exposure Limit TWA over the course of 15 minutes.

PEL — Permissible Exposure Limit is the maximum 8-hour TWA concentration of a chemical that a worker may be exposed to under Occupational Safety and Health Administration (OSHA) regulations.

Engineering measures: Use with adequate general or local exhaust ventilation to maintain exposure levels below the exposure limits. If the product is used at high temperatures, local exhaust ventilation may be required.

PERSONAL PROTECTIVE EQUIPMENT

- Respiratory protection:** In operations where the occupational exposure limits are exceeded, a NIOSH approved respirator with organic vapor/particulate cartridges or supplied air respirator appropriate for the form and concentration of the contaminants should be used. Selection and use of respiratory equipment must be in accordance with OSHA 1910.134 and good industrial hygiene practice.
- Skin and body protection:** Impervious gloves such as rubber or nitrile recommended where needed to avoid prolonged skin contact.
- Eye protection:** Safety glasses or goggles recommended where needed to avoid eye contact.
- Hygiene measures:** When using, do not eat, drink or smoke. Avoid contact with skin, eyes and clothing. Wash hands immediately after handling the product with soap and water, using a nail brush.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Metallic gray colored paste
Physical state (solid/liquid/gas):	Solid
Substance type (pure/mixture):	Mixture
Color:	Metallic gray
Odor:	Mild petroleum odor
Molecular weight:	Not available
pH:	Not available
Boiling point/range (5-95%):	Not available
Melting point/range:	Not available
Decomposition temperature:	Not available
Specific gravity:	1.2
Vapor density:	Not available
Vapor pressure:	Not established
Evaporation rate (Butyl acetate= 1):	Not available
Flash point, method used:	> 350°F (177°C)
Water solubility:	Not soluble
VOC Content:	<0.5%
Auto-ignition temperature:	Not available
Flammable limits in air — lower (%):	Not available
Flammable limits in air — upper (%):	Not available

Section 10. STABILITY AND REACTIVITY

Reactivity:	Not reactive under normal conditions of use.
Stability:	Stable under normal storage and handling conditions.
Possibly hazardous reactions:	None known.
Conditions to avoid:	Use with strong oxidizing chemicals such as concentrated acids.

Incompatible Materials:

Avoid strong oxidizing agents.

Hazardous decomposition products:

The thermal decomposition products are highly dependent on the combustion conditions and may yield oxides of nickel, aluminum and carbon. Noxious or toxic fumes may be generated, some of which may be toxic or irritating.

Polymerization:

Will not occur

Section 11. TOXICOLOGICAL INFORMATION
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Potential Health Effects:**Eye:** May cause mild irritation.**Skin:** Prolonged contact may cause irritation and drying of the skin. May cause an allergic reaction.**Inhalation:** No adverse effects expected at ambient temperatures. Inhalation of vapors and fumes from thermal decomposition may cause respiratory irritation and metal fume fever with symptoms of fever and chills.**Ingestion:** Swallowing may cause gastrointestinal irritation, nausea, vomiting, diarrhea.**Chronic Hazards:** Prolonged inhalation of nickel dust or fumes may cause perforation of the nasal septum and lung damage. Prolonged skin contact may cause an allergic reaction.**Carcinogen Status:** Metallic nickel is classified by IARC as possibly carcinogenic to humans (Group 2B) and by NTP as reasonably anticipated to be a carcinogen. None of the**Product information:**

Name	CAS No.	Inhalation:	Dermal:	Oral: LD ₅₀
Nickel Powder	7440-02-0			Oral rat LD ₅₀ > 9000 mg/kg
Graphite	7782-42-5	Inhalation rat LC ₅₀ > 2 mg/L		Oral rat LD ₅₀ > 2000 mg/kg
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	Inhalation rat LC ₅₀ : 2.18 mg/L	Dermal rabbit LD ₅₀ > 2000 mg/kg	Oral rat LD ₅₀ > 5000 mg/kg
Aluminum Powder	7429-90-5	Inhalation rat LC ₅₀ > 0.888 mg/L		Oral rat LD ₅₀ > 15900 mg/kg

LD₅₀ — The concentration of the chemical in air that kills 50% of the test animals in a given time (usually four hours).

Section 12. ECOLOGICAL INFORMATION

Nickel Powder: Oncorhynchus mykiss LC₅₀: 15.3 mg/L/96hr, Pimephales promelas NOEC: 0.057 mg/L/32days**Graphite:** Danio rerio LC₅₀ > 100 mg/L/96hr**Distillates (petroleum), hydrotreated heavy naphthenic:** Pimephales promelas LL₅₀ > 100 mg/L/96hr.**Aluminum Powder:** Lepomis cyanellus NOEC > 50 mg/L/96hr**Persistence and Degradability:** No data available**Bioaccumulative Potential:** No data available**Mobility in Soil:** No data available**Other Adverse Effects:** None known

Section 13. DISPOSAL CONSIDERATIONS

Cleanup considerations: Dispose in accordance with all local, regional and national regulations.

Section 14. TRANSPORT INFORMATION

Transportation by Land (49CFR): Unrestricted

Transportation by Air (ICAO/IATA): Unrestricted

Transportation by Ship (IMO/IMDG): Unrestricted

Section 15. REGULATORY INFORMATION

Safety, health, and environmental regulations specific for the product in question.

CERCLA Hazardous Substances (Section 103)/RQ: This product has a Reportable Quantity (RQ) of 500 lbs. based on the RQ for Nickel of 100 lbs. Releases above the RQ must be reported to the National Response Center. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

SARA Hazard Category (311/312): Acute Health, Chronic Health

SARA 313: This product contains the following chemicals regulated under SARA Title III, section 313: Aluminum Powder 1-5%, Nickel Powder 20-30%

EPA TSCA Inventory: All of the components of this product are listed on the TSCA inventory.

CALIFORNIA PROPOSITION 65: This product contains the following substances known to the state of California to cause cancer and/or reproductive toxicity:

Name	CAS No.	Weight %
Nickel Powder	7440-02-0	20-30

Section 16. OTHER INFORMATION

Standards and Certification Listings:

The information and recommendations contained herein are based upon tests, data, and information resources believed to be reliable. However, The Mill-Rose Company and its related operations or divisions do not guarantee the accuracy or completeness, nor shall any of this information constitute a warranty, whether expressed or implied, as to the safety of goods, the merchantability of the goods or the fitness of the goods for a particular purpose. Adjustment to conform to actual conditions of usage may be required. The Mill-Rose Company assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of this data. No warranty against infringement of any patent, copyright or trademark is made or implied.



MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Product name	Never-Seez Hi-Temp Stainless
Product name(s) covered	See Section 16 for Product Names Covered.
MSDS name	Never-Seez Hi-Temp Stainless Series
CAS number	Mixture
Generic description	Miscellaneous
Manufacturer	Bostik, Inc. 211 Boston Street Middleton, MA 01949 USA
24 hour emergency assistance	Telephone: 1-800-227-0332
General assistance	Telephone: 1-978-777-0100
MSDS assistance	Telephone: 1-414-607-1347

2. COMPOSITION / INFORMATION ON INGREDIENTS

Component(s)	CAS #	Percent
Aluminum	7429-90-5	1 - 5
Chromium	7440-47-3	0.5 - 1.5
Nickel	7440-02-0	0.1 - 1

3. HAZARDS IDENTIFICATION

Emergency overview	Extended contact with this material may cause irritation to the skin, eyes, and mucous membranes. Primary Routes of Exposure: eyes, skin, and inhalation. Irritating fumes and gases may be released upon thermal processing or during combustion.
Potential health effects	
Skin	This product may cause irritation to the skin. Prolonged and/or repeated skin contact with this product may cause irritation/dermatitis.
Eyes	This product may cause irritation to the eyes.
Inhalation	Fumes released during thermal processing may irritate respiratory system, skin and eyes.
Ingestion	Ingestion may cause gastrointestinal tract discomfort or damage.

4. FIRST AID MEASURES

First aid	
Skin	For minor exposures, wash thoroughly with soap and clean water. In situations involving considerable skin contact, place the contaminated person in a deluge shower for at least 15 minutes. Remove contaminated clothing to prevent further skin exposure and dispose of properly. Get medical attention if irritation persists.
Eye	Immediately flush eyes with water for at least 15 minutes, while holding eyelids open. Seek medical attention at once.
Inhalation	Move person to non-contaminated air. If the affected person is not breathing, apply artificial respiration. Seek medical attention.
Ingestion	Do not induce vomiting. If person is conscious and can swallow, immediately give two glasses of water. Seek immediate medical attention. Do not give anything by mouth to an unconscious or convulsing person.
Notes to physician	Treat symptomatically and supportively. Contact Bostik to determine whether any additional information is available.
Medical conditions aggravated by exposure	Dermatitis.

5. FIRE FIGHTING MEASURES

Hazardous combustion products	Hazardous gases produced in a fire may include oxides of nickel, carbon and nitrogen and various hydrocarbons.
Extinguishing media	Use dry chemical, carbon dioxide, or foam. Water spray (fog).
Dust explosion hazard	None Known
Sensitivity to mechanical impact	None Known
Sensitivity to static discharge	None Known
Unusual fire & explosion hazards	Product may burn and produce toxic gases in a fire.
Fire fighting equipment/instructions	Firefighters should wear full protective clothing including self contained breathing apparatus.
Flash point	> 300 °F (> 148.9 °C)

6. ACCIDENTAL RELEASE MEASURES

Emergency action	Appropriate safety measures and protective equipment should be used. See Section 8. Do not discharge to lakes, streams, ponds, or sewers. Dispose of in compliance with local, state, and federal regulations.
Spill or leak procedure	Scrape up grease and deposit into appropriate containers for disposal.
Reporting	See Federal reporting requirements listed in Section 15. We recommend you contact local authorities to determine if there may be other local reporting requirements.

7. HANDLING & STORAGE

Handling	Wear appropriate protective equipment to avoid contact with skin and eyes. See Section 8.
Storage	Store in a clean, dry area. Keep containers closed.
Empty container precaution	Attention! Follow label warnings even after container is emptied since empty containers may retain product residues. Do not reuse empty container without professional cleaning for food, clothing, or products for human or animal consumption, or where skin contact can occur.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering controls	Ventilation is not normally required.
Eye protection	Wear safety glasses with side shields.
Skin and body protection	Wear protective impervious gloves to minimize skin exposure. Work clothing sufficient to prevent all skin contact should be worn, such as coveralls and long sleeves.
Respiratory protection	Not normally needed. Special applications may necessitate the use of more stringent respiratory protection equipment. When dusts or thermal processing fumes are generated and ventilation is not sufficient to effectively remove them, appropriate NIOSH/MSHA approved respiratory protection must be provided.

Exposure limits

ACGIH - Threshold Limits Values - Time Weighted Averages (TLV-TWA)

Aluminum	7429-90-5	<u>10 mg/m3 TWA (metal dust)</u>
Chromium	7440-47-3	<u>0.5 mg/m3 TWA</u>
Nickel	7440-02-0	<u>1.5 mg/m3 TWA (inhalable fraction)</u>

NIOSH - Pocket Guide - TWAs

Aluminum	7429-90-5	<u>10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust)</u>
Chromium	7440-47-3	<u>0.5 mg/m3 TWA</u>
Nickel	7440-02-0	<u>0.015 mg/m3 TWA</u>

OSHA - Final PELs - Time Weighted Averages (TWAs)

Aluminum	7429-90-5	<u>15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)</u>
Chromium	7440-47-3	<u>1 mg/m3 TWA</u>
Nickel	7440-02-0	<u>1 mg/m3 TWA</u>

OSHA - Vacated PELs - TWAs

Aluminum	7429-90-5	<u>15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)</u>
Chromium	7440-47-3	<u>1 mg/m3 TWA</u>
Nickel	7440-02-0	<u>1 mg/m3 TWA</u>

9. PHYSICAL & CHEMICAL PROPERTIES

Density	1.19 g/cc
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Odor	Grease
Color	Silver / Gray
Physical state	Paste
Freeze protect	No
VOC (Volatile Organic Compounds)	0 %

10. STABILITY & REACTIVITY

Hazardous reactions/decomposition products	If product is burned hazardous gases such as oxides of nickel, carbon and nitrogen and various hydrocarbons may be produced.
Hazardous polymerization	Will not occur.
Materials to avoid	Avoid contact with Strong Oxidizers and Strong Acids.
Stability	Stable under normal conditions.

11. TOXICOLOGICAL INFORMATION

Toxicological data If any toxicological data is available, it will be listed below:

LD50

Toxicology Data - Selected LD50s and LC50s

Nickel 7440-02-0 Oral LD50 Rat: >9000 mg/kg

Chronic effects Chronic overexposure to the hazardous materials in this product has been associated with skin sensitization and dermatitis.

Carcinogenicity If this product contains any carcinogens, they will be noted below:

IARC - Group 1 (Carcinogenic to Humans)

Nickel 7440-02-0 Monograph 49, 1990 (Evaluated as a group)

IARC - Group 2B (Possibly Carcinogenic to Humans)

Nickel 7440-02-0 Monograph 49 [1990], Supplement 7 [1987]

NIOSH - Pocket Guide - Potential Occupational Carcinogens

Nickel 7440-02-0 potential occupational carcinogen

NTP (National Toxicology Program) - Report on Carcinogens - Known Carcinogens

Nickel 7440-02-0 Known Carcinogen

NTP (National Toxicology Program) - Report on Carcinogens - Reasonably Anticipated to be Human Carcinogens

Nickel 7440-02-0 Reasonably Anticipated To Be A Carcinogen

OSHA - Hazard Communication Carcinogens

Nickel 7440-02-0 Present

12. ECOLOGICAL INFORMATION

VOC (Volatile Organic Compounds) 0 %

Ecotoxicological information No data available for this product.

13. DISPOSAL CONSIDERATIONS

It is the obligation of each user of the product mentioned herein to determine and comply with the requirements of all applicable local, state and federal regulations.

Waste disposal Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations. Be aware that State and Local requirements may differ widely depending on location and may in many cases be different from Federal rules.

14. TRANSPORT INFORMATION

Department of Transportation (DOT) Requirements

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. REGULATORY INFORMATION

This MSDS is prepared and distributed pursuant to the Federal Hazard Communication Standard, 29 CFR 1910.1200.

Federal regulations All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA - Hazardous Substances and their Reportable Quantities

Chromium	7440-47-3	<u>5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 0.004 inches); 2270 kg final RQ (no reporting of releases of this hazardous material is required if the diameter of the pieces of the solid metal released is equal to or exceeds 0.004 inches)</u>
Nickel	7440-02-0	<u>100 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 0.004 inches); 45.4 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 0.004 inches)</u>

CERCLA/SARA - Section 313 - Emission Reporting

Aluminum	7429-90-5	<u>1.0 % de minimis concentration (dust or fume only)</u>
Chromium	7440-47-3	<u>1.0 % de minimis concentration</u>
Nickel	7440-02-0	<u>0.1 % de minimis concentration</u>

State regulations If this product contains any ingredients listed under California Proposition 65, they will be noted below:

California - Proposition 65 - Carcinogens List

Nickel	7440-02-0	<u>carcinogen, initial date 10/1/89</u>
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California - Proposition 65 - Developmental Toxicity

Lithium carbonate	554-13-2	<u>developmental toxicity, initial date 1/1/91</u>
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International regulations This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and contains all the information required by the Controlled Products Regulations.
All components are included on the Canadian Domestic Substances List (DSL).

HMIS Ratings

Health: 2*
Flammability: 1
Physical hazard: 0
Personal protection: X

SARA 311/312 HAZARD CATEGORIES

Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

WHMIS status

Controlled

WHMIS labeling



WHMIS classification

D2A - Other Toxic Effects-VERY TOXIC
D2B - Other Toxic Effects-TOXIC

16. OTHER INFORMATION

Product name(s) covered
V175740 - NEV-SZ HI TEMP SS NSS160 1L FL
V176208 - NEV-SZ HI TEMP SS NSSBT8 8OZ
V176216 - NEV-SZ HI TEMP SS NSSBT16 1LB
V176342 - NEV-SZ HI TEMP STAINLESS 42 LB
V176452 - NEV-SZ HT SS MILLED NSS425B

Disclaimer

The data in this MSDS has been compiled from publicly available sources. This data relates only to the designated product and not to the use of said product in combination with other materials. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Responsibility for proper precautions and safe use of the product lies with the user. All data in this MSDS is typical of the product as a whole, and does not represent any individual lot or batch, therefore, Bostik, Inc. makes no warranty about the accuracy of the data herein and assumes no liability for the use of such data. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.

Issue date	11/28/2006
Prepared by	Pam Larsen
Supersedes	11/28/2006



Wonder Gel Stainless Steel Pickling Gel

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 08/14/2015

Revision date: 02/11/2016

Version: 2.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : Wonder Gel Stainless Steel Pickling Gel
Product code : WG

1.2. Relevant identified uses of the substance or mixture and uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Bradford Derustit Corp
PO Box 1194
Yorba Linda, 92885
T (714) 695-0899
sales@derustit.com - www.DERUSTIT.com

1.4. Emergency telephone number

Emergency number : Chemtrec #3103 (within US) 800-424-9300; (outside US) 703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Ox. Liq. 3	H272 -	May intensify fire; oxidizer
Acute Tox. 3 (Oral)	H301 -	Toxic if swallowed
Acute Tox. 2 (Dermal)	H310 -	Fatal in contact with skin
Acute Tox. 3 (Inhalation:dust,mist)	H331 -	Toxic if inhaled
Skin Corr. 1A	H314 -	Causes severe skin burns and eye damage
Eye Dam. 1	H318 -	Causes serious eye damage

Full text of H statements : see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US)



Signal word (GHS-US)

: Danger

Hazard statements (GHS-US)

: H272 - May intensify fire; oxidizer
H301+H331 - Toxic if swallowed or if inhaled
H310 - Fatal in contact with skin
H314 - Causes severe skin burns and eye damage

Precautionary statements (GHS-US)

: P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P220 - Keep/Store away from combustible materials
P221 - Take any precaution to avoid mixing with combustible materials
P260 - Do not breathe dust, fume, vapors
P261 - Avoid breathing dust, fume, vapors
P262 - Do not get in eyes, on skin, or on clothing
P264 - Wash hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301+P310 - If swallowed: Immediately call a POISON CENTER
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER
P311 - Call a POISON CENTER

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P330 - Rinse mouth
P361 - Take off immediately all contaminated clothing
P363 - Wash contaminated clothing before reuse
P370+P378 - In case of fire: Use ABC-powder to extinguish
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards

Other hazards not contributing to the classification : None.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Calcium nitrate	(CAS No) 10124-37-5	15 - 40	Acute Tox. 4 (Oral), H302
Nitric acid	(CAS No) 7697-37-2	10 - 30	Ox. Liq. 3, H272 Skin Corr. 1A, H314
Ammonium bifluoride	(CAS No) 1341-49-7	10 - 20	Acute Tox. 3 (Oral), H301 Skin Corr. 1B, H314
Hydrofluoric acid	(CAS No) 7664-39-3	1 - 5	Acute Tox. 2 (Oral), H300 Acute Tox. 1 (Dermal), H310 Acute Tox. 2 (Inhalation:dust,mist), H330 Skin Corr. 1A, H314

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Call a physician immediately. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Call a doctor.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Call a physician immediately. Immediately remove contaminated clothing or footwear. Seek medical attention if burns develop. Wash skin with plenty of water.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately. Consult an ophthalmologist if irritation persists.

First-aid measures after ingestion : Rinse mouth. Call a physician immediately. Do not induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

Symptoms/injuries after skin contact : Burns.

Symptoms/injuries after eye contact : Serious damage to eyes.

Symptoms/injuries after ingestion : Burns.

4.3. Indication of any immediate medical attention and special treatment needed

Not applicable.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Fire hazard : May intensify fire; oxidizer.

Reactivity : May intensify fire; oxidizer.

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5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : No open flames, no sparks, and no smoking. Only qualified personnel equipped with suitable protective equipment may intervene. Do not breathe dust/fume/gas/mist/vapors/spray. Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Notify authorities if product enters sewers or public waters. In case of large spillages: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Shovel or sweep up and put in a closed container for disposal. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray.

Hygiene measures : Wash contaminated clothing before reuse. Separate work clothes from street clothes. Launder separately. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Incompatible materials : Combustible materials.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Nitric acid (7697-37-2)		
ACGIH	ACGIH TWA (ppm)	2 ppm
ACGIH	ACGIH STEL (ppm)	4 ppm
OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	2 ppm
Hydrofluoric acid (7664-39-3)		
ACGIH	ACGIH TWA (ppm)	0.5 ppm
ACGIH	ACGIH Ceiling (ppm)	2 ppm
OSHA	OSHA PEL (TWA) (ppm)	3 ppm

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Hand protection : Chemically resistant protective gloves.

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Eye protection	: Chemical goggles or safety glasses. Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles.
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: In case of insufficient ventilation, wear suitable respiratory equipment. Wear respiratory protection.
Environmental exposure controls	: Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Green
Odor	: acidic
Odor threshold	: No data available
pH	: 2.6
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: -212 °F
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: 1.2
Relative vapor density at 20 °C	: No data available
Solubility	: Water: Solubility in water of component(s) of the mixture : • Hydrofluoric acid: 719.8 g/l (at 20 °C) • Ammonium bifluoride: 630 g/l (at 20 °C)
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

May intensify fire; oxidizer.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Combustible materials.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. On combustion, forms: carbon oxides (CO and CO₂).

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Toxic if swallowed. Dermal: Fatal in contact with skin. Inhalation:dust,mist: Toxic if inhaled.

Wonder Gel Stainless Steel Pickling Gel	
ATE US (oral)	80.040 mg/kg body weight
ATE US (dermal)	100.000 mg/kg body weight
ATE US (dust, mist)	1.000 mg/l/4h
Calcium nitrate (10124-37-5)	
LD50 oral rat	302 mg/kg
ATE US (oral)	302.000 mg/kg body weight
Nitric acid (7697-37-2)	
LC50 inhalation rat (ppm)	67 ppm/4h
ATE US (gases)	67.000 ppmV/4h
Hydrofluoric acid (7664-39-3)	
LC50 inhalation rat (mg/l)	0.79 mg/l (Exposure time: 1 h)
ATE US (oral)	5.000 mg/kg body weight
ATE US (dermal)	5.000 mg/kg body weight
ATE US (vapors)	0.790 mg/l/4h
ATE US (dust, mist)	0.050 mg/l/4h
Ammonium bifluoride (1341-49-7)	
LD50 oral rat	130 mg/kg
ATE US (oral)	130.000 mg/kg body weight

Skin corrosion/irritation : Causes severe skin burns and eye damage.
pH: 2.6

Serious eye damage/irritation : Causes serious eye damage.
pH: 2.6

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/injuries after skin contact : Burns.

Symptoms/injuries after eye contact : Serious damage to eyes.

Symptoms/injuries after ingestion : Burns.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Before neutralisation, the product may represent a danger to aquatic organisms.

Calcium nitrate (10124-37-5)	
LC50 fish 1	10000 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
Hydrofluoric acid (7664-39-3)	
EC50 Daphnia 1	270 mg/l (Exposure time: 48 h - Species: Daphnia species)

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12.2. Persistence and degradability

Wonder Gel Stainless Steel Pickling Gel

Persistence and degradability	Not established.
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12.3. Bioaccumulative potential

Wonder Gel Stainless Steel Pickling Gel

Bioaccumulative potential	Not established.
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Nitric acid (7697-37-2)

Log Pow	-2.3 (at 25 °C)
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Hydrofluoric acid (7664-39-3)

BCF fish 1	(no bioaccumulation)
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Log Pow	-1.4
---------	------

Ammonium bifluoride (1341-49-7)

BCF fish 1	(completely dissociated in water)
------------	-----------------------------------

12.4. Mobility in soil

Wonder Gel Stainless Steel Pickling Gel

Ecology - soil	Not established.
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12.5. Other adverse effects

Effect on global warming	: No known ecological damage caused by this product. Not established
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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description	: UN3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, Hydrofluoric Acid), 8, III
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UN-No.(DOT)	: UN3264
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Proper Shipping Name (DOT)	: Corrosive liquid, acidic, inorganic, n.o.s. Nitric Acid, Hydrofluoric Acid
----------------------------	---

Class (DOT)	: 8 - Class 8 - Corrosive material 49 CFR 173.136
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Hazard labels (DOT)	: 8 - Corrosive
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Packing group (DOT)	: III - Minor Danger
---------------------	----------------------

DOT Packaging Non Bulk (49 CFR 173.xxx)	: 203
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DOT Packaging Bulk (49 CFR 173.xxx)	: 241
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DOT Symbols	: G - Identifies PSN requiring a technical name
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DOT Special Provisions (49 CFR 172.102)	: IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672) T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling TP28 - A portable tank having a minimum test pressure of 2.65 bar (265 kPa) may be used provided the calculated test pressure is 2.65 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP
DOT Packaging Exceptions (49 CFR 173.xxx)	: 154
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 5 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 60 L
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel
DOT Vessel Stowage Other	: 40 - Stow "clear of living quarters"
Other information	: No supplementary information available.

Transport by sea

UN-No. (IMDG)	: 3264
Proper Shipping Name (IMDG)	: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
Class (IMDG)	: 8 - Corrosive substances
Packing group (IMDG)	: III - substances presenting low danger

Air transport

UN-No. (IATA)	: 3264
Proper Shipping Name (IATA)	: Corrosive liquid, acidic, inorganic, n.o.s.
Class (IATA)	: 8 - Corrosives
Packing group (IATA)	: III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Nitric acid	CAS No 7697-37-2	10 - 30%
Hydrofluoric acid	CAS No 7664-39-3	1 - 5%

Calcium nitrate (10124-37-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Nitric acid (7697-37-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on the United States SARA Section 302

Subject to reporting requirements of United States SARA Section 313

SARA Section 302 Threshold Planning Quantity (TPQ)	1000
SARA Section 313 - Emission Reporting	1.0 %

Hydrofluoric acid (7664-39-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on the United States SARA Section 302

Subject to reporting requirements of United States SARA Section 313

SARA Section 302 Threshold Planning Quantity (TPQ)	100
SARA Section 313 - Emission Reporting	1.0 %

Ammonium bifluoride (1341-49-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Wonder Gel Stainless Steel Pickling Gel

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

15.2. International regulations

National regulations

Wonder Gel Stainless Steel Pickling Gel

All chemical substances in this product are listed in the EPA (Environment Protection Agency) TSCA (Toxic Substances Control Act) Inventory

Calcium nitrate (10124-37-5)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican national Inventory of Chemical Substances)
Listed on CICR (Turkish Inventory and Control of Chemicals)

Nitric acid (7697-37-2)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Japanese Poisonous and Deleterious Substances Control Law
Listed on the Canadian IDL (Ingredient Disclosure List)
Listed on INSQ (Mexican national Inventory of Chemical Substances)
Listed on CICR (Turkish Inventory and Control of Chemicals)

Hydrofluoric acid (7664-39-3)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Japanese Poisonous and Deleterious Substances Control Law
Japanese Pollutant Release and Transfer Register Law (PRTR Law)
Listed on the Canadian IDL (Ingredient Disclosure List)
Listed on INSQ (Mexican national Inventory of Chemical Substances)
Listed on CICR (Turkish Inventory and Control of Chemicals)

Ammonium bifluoride (1341-49-7)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Japanese Poisonous and Deleterious Substances Control Law
Japanese Pollutant Release and Transfer Register Law (PRTR Law)
Listed on INSQ (Mexican national Inventory of Chemical Substances)
Listed on CICR (Turkish Inventory and Control of Chemicals)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

Calcium nitrate (10124-37-5)

U.S. - New Jersey - Right to Know Hazardous Substance List

Nitric acid (7697-37-2)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List

Wonder Gel Stainless Steel Pickling Gel

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Hydrofluoric acid (7664-39-3)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List

Ammonium bifluoride (1341-49-7)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Revision date : 02/11/2016

Full text of H-phrases:

H272	May intensify fire; oxidizer
H300	Fatal if swallowed
H301	Toxic if swallowed
H302	Harmful if swallowed
H310	Fatal in contact with skin
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H330	Fatal if inhaled
H331	Toxic if inhaled

SDS GHS US CUSTOM BLUE w/FIFRA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

SAFETY DATA SHEET

1. Identification

Product identifier	Carlton All Weather QuickSet Cement
Other means of identification	
SDS number	SDS - 00005
Product code	VC9981P, VC9982, VC9983, VC9983C, VC9984, VC9985C
Recommended use	Joining PVC Pipes
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Company name	Thomas & Betts Corporation
Address	8155 T & B Boulevard Memphis, TN 38125 US
Telephone	901-252-5000 ext.8324
E-mail	Not available.
Emergency phone number	CHEMTREC - 24 HOURS: 1-800-424-9300

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Acute toxicity, oral	Category 4
	Serious eye damage/eye irritation	Category 2A
	Carcinogenicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
OSHA defined hazards	Not classified.	
Label elements		



Signal word	Danger
Hazard statement	Highly flammable liquid and vapor. Harmful if swallowed. May cause cancer. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.
Precautionary statement	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If exposed or concerned: Get medical advice/attention. If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. In case of fire: Use appropriate media to extinguish.
Storage	Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)
Supplemental information

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.
None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Tetrahydrofuran	109-99-9	30-55
Acetone	67-64-1	10-25
Ethene, chloro-, homopolymer, Polyvinyl chloride; PVC;	9002-86-2	12-20
Cyclohexanone	108-94-1	10-20
Silica, amorphous, fumed	112945-52-5	1-5
Other components below reportable levels		6

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. If vomiting occurs, keep head low so that stomach content does not get into the lungs. Get medical attention immediately.

Most important symptoms/effects, acute and delayed May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Alcohol resistant foam. Carbon dioxide (CO₂). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards Highly flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recovery or safe disposal. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Use water spray to reduce vapors or divert vapor cloud drift. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Containers must be labeled. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist or vapor. Avoid contact with eyes. Avoid prolonged exposure. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS). Periodically test for peroxide formation on long-term storage.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Components	Type	Value
Ethene, chloro-, homopolymer, Polyvinyl chloride; PVC; (CAS 9002-86-2)	STEL	5 ppm
	TWA	1 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Acetone (CAS 67-64-1)	PEL	2400 mg/m3	
		1000 ppm	
Cyclohexanone (CAS 108-94-1)	PEL	200 mg/m3	

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Ethene, chloro-, homopolymer, Polyvinyl chloride; PVC; (CAS 9002-86-2)	PEL	50 ppm	Respirable fraction.
		5 mg/m3	
Tetrahydrofuran (CAS 109-99-9)	PEL	15 mg/m3	Total dust.
		590 mg/m3	
		200 ppm	

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Ethene, chloro-, homopolymer, Polyvinyl chloride; PVC; (CAS 9002-86-2)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.
Silica, amorphous, fumed (CAS 112945-52-5)	TWA	0.8 mg/m3	
		20 mppcf	

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Acetone (CAS 67-64-1)	STEL	750 ppm	Respirable particles.
	TWA	500 ppm	
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm	
	TWA	20 ppm	
Ethene, chloro-, homopolymer, Polyvinyl chloride; PVC; (CAS 9002-86-2)	TWA	3 mg/m3	
Tetrahydrofuran (CAS 109-99-9)	STEL	100 ppm	
	TWA	50 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Acetone (CAS 67-64-1)	TWA	590 mg/m3
		250 ppm
Cyclohexanone (CAS 108-94-1)	TWA	100 mg/m3
		25 ppm
Silica, amorphous, fumed (CAS 112945-52-5)	TWA	6 mg/m3
Tetrahydrofuran (CAS 109-99-9)	STEL	735 mg/m3
		250 ppm
		590 mg/m3
	TWA	200 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	50 mg/l	Acetone	Urine	*

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Cyclohexanone (CAS 108-94-1)	80 mg/l	1,2-Cyclohexanediol, with hydrolysis	Urine	*
	8 mg/l	Cyclohexanol, with hydrolysis	Urine	*
Tetrahydrofuran (CAS 109-99-9)	2 mg/l	Tetrahydrofuran	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Cyclohexanone (CAS 108-94-1)

Skin designation applies.

US - Tennessee OELs: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

Tetrahydrofuran (CAS 109-99-9)

Can be absorbed through the skin.

US. NIOSH: Pocket Guide to Chemical Hazards

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash fountain and emergency showers are recommended.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

Skin protection

Other

Wear suitable protective clothing. Use of an impervious apron is recommended.

Respiratory protection

Chemical respirator with organic vapor cartridge.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Observe any medical surveillance requirements. When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state

Liquid.

Form

Liquid.

Color

Clear.

Odor

Ether-like.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

Not available.

Initial boiling point and boiling range

150.8 °F (66 °C)

Flash point

14.0 - 23.0 °F (-10.0 - -5.0 °C)

Evaporation rate	5.5 - 8 (BuAc = 1)
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	1.8
Flammability limit - upper (%)	11.8
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	145 mm Hg (20°C/68°F)
Vapor density	2.5
Relative density	0.91 - 0.95
Relative density temperature	68 °F (20 °C)
Solubility(ies)	
Solubility (water)	Negligible in water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
VOC (Weight %)	< 510 g/l

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Ammonia. Amines. Caustics.
Hazardous decomposition products	Carbon oxides. Hydrogen chloride.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause drowsiness and dizziness. Headache. Nausea, vomiting. May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Prolonged skin contact may cause redness and irritation. The product contains components which may penetrate skin.
Eye contact	Causes serious eye irritation.
Ingestion	Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity	Harmful if swallowed.
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Components	Species	Test Results
Acetone (CAS 67-64-1)		
Acute		
Dermal		
LD50	Rabbit	20 ml/kg

Components	Species	Test Results
<i>Inhalation</i>		
LC50	Rat	50 mg/l, 8 Hours
<i>Oral</i>		
LD50	Rat	5800 mg/kg
Cyclohexanone (CAS 108-94-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	948 mg/kg
<i>Inhalation</i>		
LC50	Rat	8000 ppm, 4 hours
<i>Oral</i>		
LD50	Rat	800 mg/kg
Tetrahydrofuran (CAS 109-99-9)		
Acute		
<i>Dermal</i>		
LD50	Rat	> 2000 mg/kg, 24 Hours
<i>Oral</i>		
LD50	Rat	1650 mg/kg
Skin corrosion/irritation	Prolonged and frequent contact may cause redness and irritation. The product contains components which may penetrate skin.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	Not a respiratory sensitizer.	
Skin sensitization	This product is not expected to cause skin sensitization.	
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity	Suspected of causing cancer.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Cyclohexanone (CAS 108-94-1)	3 Not classifiable as to carcinogenicity to humans.	
Ethene, chloro-, homopolymer, Polyvinyl chloride; PVC; (CAS 9002-86-2)	3 Not classifiable as to carcinogenicity to humans.	
Silica, amorphous, fumed (CAS 112945-52-5)	3 Not classifiable as to carcinogenicity to humans.	
NTP Report on Carcinogens		
Not listed.		
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		
Ethene, chloro-, homopolymer, Polyvinyl chloride; PVC; (CAS 9002-86-2)	Cancer	
Reproductive toxicity	Cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.	
Specific target organ toxicity - single exposure	May cause respiratory irritation. May cause drowsiness and dizziness.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	Not an aspiration hazard.	
Chronic effects	Prolonged inhalation may be harmful. May cause central nervous system effects.	
12. Ecological information		
Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.	

Components	Species	Test Results
Acetone (CAS 67-64-1)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) > 100 mg/l, 96 hours
Cyclohexanone (CAS 108-94-1)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) 481 - 578 mg/l, 96 hours
Tetrahydrofuran (CAS 109-99-9)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) 2160 mg/l, 96 Hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential Not expected to bioaccumulate on the basis of the low octanol-water partition coefficient.

Partition coefficient n-octanol / water (log Kow)

Acetone (CAS 67-64-1)	-0.24
Cyclohexanone (CAS 108-94-1)	0.81
Tetrahydrofuran (CAS 109-99-9)	0.46

Mobility in soil Expected to be highly mobile in soil.

Other adverse effects The product contains volatile organic compounds which have a photochemical ozone creation potential.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN1133
UN proper shipping name	Adhesives
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II
Environmental hazards	
Marine pollutant	No
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	149, B52, IB2, T4, TP1, TP8
Packaging exceptions	150
Packaging non bulk	173
Packaging bulk	242

IATA

UN number	UN1133
UN proper shipping name	Adhesives
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3

Packing group	II
Environmental hazards	No
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1133
UN proper shipping name	ADHESIVES
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II
Environmental hazards	
Marine pollutant	No
EmS	F-E, S-D
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Ethene, chloro-, homopolymer, Polyvinyl chloride; PVC; Cancer
(CAS 9002-86-2)

Central nervous system
Liver
Blood
Flammability

CERCLA Hazardous Substance List (40 CFR 302.4)

Acetone (CAS 67-64-1)	LISTED
Cyclohexanone (CAS 108-94-1)	LISTED
Tetrahydrofuran (CAS 109-99-9)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes
	Delayed Hazard - Yes
	Fire Hazard - Yes
	Pressure Hazard - No
	Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Acetone (CAS 67-64-1) 6532

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Acetone (CAS 67-64-1) 35 %WV

DEA Exempt Chemical Mixtures Code Number

Acetone (CAS 67-64-1) 6532

US state regulations

US. Massachusetts RTK - Substance List

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Silica, amorphous, fumed (CAS 112945-52-5)
Tetrahydrofuran (CAS 109-99-9)

US. New Jersey Worker and Community Right-to-Know Act

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Ethene, chloro-, homopolymer, Polyvinyl chloride; PVC; (CAS 9002-86-2)
Tetrahydrofuran (CAS 109-99-9)

US. Pennsylvania Worker and Community Right-to-Know Law

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Silica, amorphous, fumed (CAS 112945-52-5)
Tetrahydrofuran (CAS 109-99-9)

US. Rhode Island RTK

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Tetrahydrofuran (CAS 109-99-9)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 08-December-2015
Revision date -
Version # 01
HMIS® ratings Health: 2*
Flammability: 3
Physical hazard: 0

NFPA ratings



Disclaimer

Thomas & Betts Corporation cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

SAFETY DATA SHEET

1. Identification

Product identifier	Royston A51 Low VOC Mastic	
Other means of identification		
Synonyms	Roskote A51 Low VOC	
Recommended use	Not available.	
Recommended restrictions	None known.	
Manufacturer/Importer/Supplier/Distributor information		
Manufacturer		
Company name	CHASE CORPORATION Blawnox Plant	
Address	128 1st Street Blawnox, PA 15238-3223 United States	
Telephone	866-932-0800	
E-mail	Not available.	
Emergency phone number	800-424-9300	Chemtrec, US
	703-527-3887	Chemtrec, outside of US

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Sensitization, skin	Category 1
	Germ cell mutagenicity	Category 1B
	Carcinogenicity	Category 1A
	Reproductive toxicity (fertility, the unborn child)	Category 1B
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement	Highly flammable liquid and vapor. Harmful if swallowed. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause drowsiness or dizziness. May cause genetic defects. May cause cancer. May damage the unborn child. May damage fertility. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.
Precautionary statement	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Call a poison center/doctor if you feel unwell. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned: Get medical advice/attention. Call a poison center/doctor if you feel unwell. Specific treatment (see this label). Rinse mouth. If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish. Collect spillage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.
Supplemental information	72.78% of the mixture consists of component(s) of unknown acute oral toxicity. 35.78% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 35.78% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Pitch, Coal Tar, High-temp.		65996-93-2	40 - < 50
TOLUENE		108-88-3	20 - < 30
MICA		12001-26-2	5 - < 10
METHYL ETHYL KETONE		78-93-3	3 - < 5
Coal Tar Pitch		8007-45-2	1 - < 3
Talc (powder)		14807-96-6	1 - < 3
Other components below reportable levels			20 - < 30

Constituents

Chemical name	CAS number	%
Fluoranthene	206-44-0	2 - 2.75
Phenanthrene	85-01-8	1.8 - 2.5
Pyrene	129-00-0	1.5 - 2
1,2-benzanthracene	56-55-3	0.7 - 1
1,2-benzphenanthrene	218-01-9	0.7 - 1
Benzo(a) Pyrene	50-32-8	0.7 - 1
Benzo[ghi]perylene	191-24-2	0.5 - 1
Indeno[1,2,3-cd]pyrene	193-39-5	0.5 - 0.7
Benzo (b) Fluoranthene	205-99-2	0.5 - 0.7
Dibenzo(a,h)pyrene	189-64-0	0.4 - 0.6
Benzo[j]fluoranthene	205-82-3	0.4 - 0.5
Benzo[k]fluoranthene	207-08-9	0.4 - 0.5

Constituents

Chemical name	CAS number	%
Carbazole	86-74-8	0.3 - 0.4
Acenaphthene	83-32-9	0.2 - 0.3
Dibenzo(a,e)pyrene	192-65-4	0.15 - 0.25
Dibenzo[a,i]pyrene	189-55-9	0.15 - 0.15
Dibenz[a,h]anthracene	53-70-3	0.15 - 0.15
Naphthalene	91-20-3	0.02 - 0.15

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments Occupational Exposure Limits for constituents are listed in Section 8. All the Constituents listed are part of the Coal Tar Pitch (25036-25-3).

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Take off immediately all contaminated clothing. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.
Most important symptoms/effects, acute and delayed	Dermatitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Irritation of nose and throat. Rash. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Carbon dioxide (CO2). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Highly flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recovery or safe disposal. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Clean surface thoroughly to remove residual contamination.

Environmental precautions

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not breathe mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Pregnant or breastfeeding women must not handle this product. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices. Avoid release to the environment. Do not empty into drains.

For additional information on equipment bonding and grounding, refer to the Canadian Electrical Code in Canada, (CSA C22.1), or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity" or National Fire Protection Association (NFPA) 70, "National Electrical Code".

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Avoid spark promoters. Eliminate sources of ignition. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Refrigeration recommended. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
METHYL ETHYL KETONE (CAS 78-93-3)	PEL	590 mg/m3
		200 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Pitch, Coal Tar, High-temp. (CAS 65996-93-2)	PEL	0.2 mg/m3
Constituents	Type	Value
Naphthalene (CAS 91-20-3)	PEL	50 mg/m3 10 ppm

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
TOLUENE (CAS 108-88-3)	Ceiling TWA	300 ppm 200 ppm

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
MICA (CAS 12001-26-2)	TWA	20 mppcf	
Talc (powder) (CAS 14807-96-6)	TWA	0.3 mg/m3	Total dust.
		0.1 mg/m3	Respirable.
		20 mppcf	
		2.4 mppcf	Respirable.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
METHYL ETHYL KETONE (CAS 78-93-3)	STEL	300 ppm	
	TWA	200 ppm	
MICA (CAS 12001-26-2)	TWA	3 mg/m3	Respirable fraction.
Pitch, Coal Tar, High-temp. (CAS 65996-93-2)	TWA	0.2 mg/m3	Aerosol.
Talc (powder) (CAS 14807-96-6)	TWA	2 mg/m3	Respirable fraction.
TOLUENE (CAS 108-88-3)	TWA	20 ppm	
Constituents	Type	Value	
Naphthalene (CAS 91-20-3)	TWA	10 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
METHYL ETHYL KETONE (CAS 78-93-3)	STEL	885 mg/m3	
	TWA	300 ppm 590 mg/m3	
MICA (CAS 12001-26-2)	TWA	200 ppm 3 mg/m3	Respirable.
Pitch, Coal Tar, High-temp. (CAS 65996-93-2)	TWA	0.1 mg/m3	Cyclohexane-extractable fraction.
Talc (powder) (CAS 14807-96-6)	TWA	2 mg/m3	Respirable.
TOLUENE (CAS 108-88-3)	STEL	560 mg/m3 150 ppm	
	TWA	375 mg/m3 100 ppm	
Constituents	Type	Value	
Naphthalene (CAS 91-20-3)	STEL	75 mg/m3	
	TWA	15 ppm 50 mg/m3	

10 ppm

Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
METHYL ETHYL KETONE (CAS 78-93-3)	2 mg/l	MEK	Urine	*
TOLUENE (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*

* - For sampling details, please see the source document.

Exposure guidelines**US - California OELs: Skin designation**

TOLUENE (CAS 108-88-3)

Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

TOLUENE (CAS 108-88-3)

Skin designation applies.

US ACGIH Threshold Limit Values: Skin designation

Naphthalene (CAS 91-20-3)

Can be absorbed through the skin.

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection**Hand protection**

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties**Appearance****Physical state**

Liquid.

Form

Viscous Liquid.

Color

Black.

Odor

Aromatic Solvent.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

-138.82 °F (-94.9 °C) estimated

Initial boiling point and boiling range

231.08 °F (110.6 °C) estimated

Flash point

40.0 °F (4.4 °C) estimated

Evaporation rate

Not available.

Flammability (solid, gas)

Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) 1.3 % estimated

Explosive limit - lower (%)	1.8 %
Explosive limit - upper (%)	11.5 %
Vapor pressure	12.29 hPa estimated
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	896 °F (480 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	9.80 g/cm3 estimated
Flammability class	Flammable IB estimated
Percent volatile	40 - 50 %
Specific gravity	1.2 estimated
VOC (Weight %)	< 250 g/l

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Harmful if swallowed.
Inhalation	Prolonged inhalation may be harmful. May cause drowsiness and dizziness. Headache. Nausea, vomiting. May cause damage to organs through prolonged or repeated exposure by inhalation.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Dermatitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Irritation of nose and throat. Rash. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction.

Information on toxicological effects

Acute toxicity	Harmful if swallowed. Narcotic effects. May cause an allergic skin reaction.
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Product	Species	Test Results
Royston A51 Low VOC Mastic (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	45670.8047 mg/kg estimated 64.0909 ml/kg estimated
<i>Inhalation</i>		
LC50	Mouse	24181.8184 ppm, 8 Hours estimated 1818.1818 ppm, 24 Hours estimated

Product	Species	Test Results
	Rat	55454.5469 ppm, 2 Hours estimated 36363.6367 ppm, 4 Hours estimated
<i>Oral</i> LD50	Mouse	22333.334 mg/kg estimated
	Rat	11.8182 g/kg estimated
<i>Other</i> LD50	Mouse	55333.332 g/kg, 24 Hours estimated 268.1818 mg/kg estimated
	Rat	5966.3672 mg/kg estimated
Components	Species	Test Results
METHYL ETHYL KETONE (CAS 78-93-3)		
Acute		
<i>Dermal</i> LD50	Rabbit	> 8000 mg/kg
<i>Inhalation</i> LC50	Mouse	11000 ppm, 45 Minutes
	Rat	11700 ppm, 4 Hours
<i>Oral</i> LD50	Mouse	670 mg/kg
	Rat	2300 - 3500 mg/kg
<i>Other</i> LD50	Mouse	1660 g/kg, 24 Hours
	Rat	12290 mg/kg, 24 Hours
TOLUENE (CAS 108-88-3)		
Acute		
<i>Dermal</i> LD50	Rabbit	12124 mg/kg 14.1 ml/kg
<i>Inhalation</i> LC50	Mouse	5320 ppm, 8 Hours 400 ppm, 24 Hours
	Rat	26700 ppm, 1 Hours 12200 ppm, 2 Hours 8000 ppm, 4 Hours
<i>Oral</i> LD50	Rat	2.6 g/kg
<i>Other</i> LD50	Mouse	59 mg/kg
	Rat	1332 mg/kg
Constituents	Species	Test Results
Naphthalene (CAS 91-20-3)		
Acute		
<i>Dermal</i> LD50	Rabbit	> 2 g/kg
	Rat	> 20 g/kg
<i>Oral</i> LD50	Guinea pig	1200 mg/kg
	Rat	490 mg/kg

Constituents	Species	Test Results
<i>Other</i> LD50	Mouse	100 mg/kg
Carbazole (CAS 86-74-8)		
Acute		
<i>Oral</i> LD50	Rat	> 5000 mg/kg
1,2-benzphenanthrene (CAS 218-01-9)		
Acute		
<i>Other</i> LD50	Mouse	> 320 mg/kg
Benzo(a) Pyrene (CAS 50-32-8)		
Acute		
<i>Other</i> LD50	Mouse	250 mg/kg
Phenanthrene (CAS 85-01-8)		
Acute		
<i>Oral</i> LD50	Mouse	700 mg/kg
<i>Other</i> LD50	Mouse	56 mg/kg
Fluoranthene (CAS 206-44-0)		
Acute		
<i>Dermal</i> LD50	Rabbit	3180 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity May cause genetic defects.

Carcinogenicity May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

1,2-benzanthracene (CAS 56-55-3)	2B Possibly carcinogenic to humans.
1,2-benzphenanthrene (CAS 218-01-9)	2B Possibly carcinogenic to humans.
Acenaphthene (CAS 83-32-9)	3 Not classifiable as to carcinogenicity to humans.
Benzo (b) Fluoranthene (CAS 205-99-2)	2B Possibly carcinogenic to humans.
Benzo(a) Pyrene (CAS 50-32-8)	1 Carcinogenic to humans.
Benzo[ghi]perylene (CAS 191-24-2)	3 Not classifiable as to carcinogenicity to humans.
Benzo[j]fluoranthene (CAS 205-82-3)	2B Possibly carcinogenic to humans.
Benzo[k]fluoranthene (CAS 207-08-9)	2B Possibly carcinogenic to humans.
Carbazole (CAS 86-74-8)	2B Possibly carcinogenic to humans.
Coal Tar Pitch (CAS 8007-45-2)	1 Carcinogenic to humans.
Dibenz[a,h]anthracene (CAS 53-70-3)	2A Probably carcinogenic to humans.
Dibenzo(a,e)pyrene (CAS 192-65-4)	3 Not classifiable as to carcinogenicity to humans.
Dibenzo(a,h)pyrene (CAS 189-64-0)	2B Possibly carcinogenic to humans.
Dibenzo[a,i]pyrene (CAS 189-55-9)	2B Possibly carcinogenic to humans.
Fluoranthene (CAS 206-44-0)	3 Not classifiable as to carcinogenicity to humans.
Indeno[1,2,3-cd]pyrene (CAS 193-39-5)	2B Possibly carcinogenic to humans.
Naphthalene (CAS 91-20-3)	2B Possibly carcinogenic to humans.
Phenanthrene (CAS 85-01-8)	3 Not classifiable as to carcinogenicity to humans.
Pitch, Coal Tar, High-temp. (CAS 65996-93-2)	1 Carcinogenic to humans.
Pyrene (CAS 129-00-0)	3 Not classifiable as to carcinogenicity to humans.

Talc (powder) (CAS 14807-96-6)

2B Possibly carcinogenic to humans.

TOLUENE (CAS 108-88-3)

3 Not classifiable as to carcinogenicity to humans.

3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

1,2-benzanthracene (CAS 56-55-3)

Reasonably Anticipated to be a Human Carcinogen.

Benzo (b) Fluoranthene (CAS 205-99-2)

Reasonably Anticipated to be a Human Carcinogen.

Benzo(a) Pyrene (CAS 50-32-8)

Reasonably Anticipated to be a Human Carcinogen.

Benzo[k]fluoranthene (CAS 205-82-3)

Reasonably Anticipated to be a Human Carcinogen.

Benzo[k]fluoranthene (CAS 207-08-9)

Reasonably Anticipated to be a Human Carcinogen.

Dibenz[a,h]anthracene (CAS 53-70-3)

Reasonably Anticipated to be a Human Carcinogen.

Dibenzo(a,e)pyrene (CAS 192-65-4)

Reasonably Anticipated to be a Human Carcinogen.

Dibenzo(a,h)pyrene (CAS 189-64-0)

Reasonably Anticipated to be a Human Carcinogen.

Dibenzo[a,i]pyrene (CAS 189-55-9)

Reasonably Anticipated to be a Human Carcinogen.

Indeno[1,2,3-cd]pyrene (CAS 193-39-5)

Reasonably Anticipated to be a Human Carcinogen.

Naphthalene (CAS 91-20-3)

Reasonably Anticipated to be a Human Carcinogen.

Pitch, Coal Tar, High-temp. (CAS 65996-93-2)

Known To Be Human Carcinogen.

Reproductive toxicity

May damage the unborn child. May damage fertility.

Specific target organ toxicity - single exposure

May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

Not available.

Chronic effects

Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects. May cause damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity

Very toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

Product	Species	Test Results
Royston A51 Low VOC Mastic (CAS Mixture)		
Aquatic		
Crustacea	EC50	Daphnia
		46.4498 mg/l, 48 hours estimated
Fish	LC50	Fish
		399.551 mg/l, 96 hours estimated
Components	Species	Test Results
METHYL ETHYL KETONE (CAS 78-93-3)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna)
		4025 - 6440 mg/l, 48 hours
Fish	LC50	Sheepshead minnow (Cyprinodon variegatus)
		> 400 mg/l, 96 hours
TOLUENE (CAS 108-88-3)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna)
		5.46 - 9.83 mg/l, 48 hours
Fish	LC50	Coho salmon,silver salmon (Oncorhynchus kisutch)
		8.11 mg/l, 96 hours
Constituents	Species	Test Results
Naphthalene (CAS 91-20-3)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna)
		1.09 - 3.4 mg/l, 48 hours
Fish	LC50	Pink salmon (Oncorhynchus gorbuscha)
		1.11 - 1.68 mg/l, 96 hours
Acenaphthene (CAS 83-32-9)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna)
		1.102 - 1.475 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)
		0.52 - 0.71 mg/l, 96 hours

Constituents		Species	Test Results
Carbazole (CAS 86-74-8)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	2.3 - 4.88 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	0.93 mg/l, 96 hours
Pyrene (CAS 129-00-0)			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	> 2 mg/l, 96 hours
Phenanthrene (CAS 85-01-8)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	0.185 - 0.243 mg/l, 48 hours
Fish	LC50	Sheepshead minnow (Cyprinodon variegatus)	0.438 - 0.523 mg/l, 96 hours
Fluoranthene (CAS 206-44-0)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	0.0054 - 0.0085 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential Not available.

Partition coefficient n-octanol / water (log Kow)

METHYL ETHYL KETONE	0.29
TOLUENE	2.73
Dibenz[a,h]anthracene	6.5
Naphthalene	3.3
Acenaphthene	3.92
Benzo[k]fluoranthene	6.84
Benzo (b) Fluoranthene	6.6
1,2-benzanthracene	5.79
1,2-benzphenanthrene	5.73
Benzo(a) Pyrene	5.97
Benzo[ghi]perylene	6.63
Pyrene	4.88
Phenanthrene	4.57
Fluoranthene	5.16

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

US RCRA Hazardous Waste U List: Reference

1,2-benzanthracene (CAS 56-55-3)	U018
1,2-benzphenanthrene (CAS 218-01-9)	U050
Benzo(a) Pyrene (CAS 50-32-8)	U022
Dibenz[a,h]anthracene (CAS 53-70-3)	U063
Dibenzo[a,i]pyrene (CAS 189-55-9)	U064
Fluoranthene (CAS 206-44-0)	U120
Indeno[1,2,3-cd]pyrene (CAS 193-39-5)	U137
METHYL ETHYL KETONE (CAS 78-93-3)	U159
Naphthalene (CAS 91-20-3)	U165
TOLUENE (CAS 108-88-3)	U220

Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1139
UN proper shipping name	Coating solution (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining) (TOLUENE RQ = 4545 LBS, METHYL ETHYL KETONE RQ = 166667 LBS), MARINE POLLUTANT
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II
Environmental hazards	
Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	149, IB2, T4, TP1, TP8
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1139
UN proper shipping name	Coating solution (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining) (TOLUENE, METHYL ETHYL KETONE)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	Yes
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1139
UN proper shipping name	COATING SOLUTION (includes surface treatments or coatings used for industrial purposes such as vehicle under-coating, drum or barrel lining) (TOLUENE, METHYL ETHYL KETONE), MARINE POLLUTANT
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	Yes
EmS	F-E, S-E*
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code This substance/mixture is not intended to be transported in bulk.

DOT



IATA; IMDG



Marine pollutant



General information

DOT Regulated Marine Pollutant. IMDG Regulated Marine Pollutant.

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Coal Tar Pitch (CAS 8007-45-2)

0.1 % One-Time Export Notification only.

CERCLA Hazardous Substance List (40 CFR 302.4)

1,2-benzanthracene (CAS 56-55-3)
1,2-benzphenanthrene (CAS 218-01-9)
Acenaphthene (CAS 83-32-9)
Benzo (b) Fluoranthene (CAS 205-99-2)
Benzo(a) Pyrene (CAS 50-32-8)
Benzo[ghi]perylene (CAS 191-24-2)
Benzo[k]fluoranthene (CAS 207-08-9)
Dibenz[a,h]anthracene (CAS 53-70-3)
Dibenzo[a,i]pyrene (CAS 189-55-9)
Fluoranthene (CAS 206-44-0)
Indeno[1,2,3-cd]pyrene (CAS 193-39-5)
METHYL ETHYL KETONE (CAS 78-93-3)
Naphthalene (CAS 91-20-3)
Phenanthrene (CAS 85-01-8)
Pyrene (CAS 129-00-0)
TOLUENE (CAS 108-88-3)

Listed.
Listed.
Listed.
Listed.
Listed.
Listed.
Listed.
Listed.
Listed.
Listed.
Listed.
Listed.
Listed.
Listed.
Listed.

SARA 304 Emergency release notification

Pyrene (CAS 129-00-0)

5000 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
 Delayed Hazard - Yes
 Fire Hazard - Yes
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
Pyrene	129-00-0	5000		1000 lbs	10000 lbs

SARA 311/312 Hazardous chemical

No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
TOLUENE	108-88-3	20 - < 30
Benzo[ghi]perylene	191-24-2	0.5 - 1
Indeno[1,2,3-cd]pyrene	193-39-5	0.5 - 0.7
Benzo (b) Fluoranthene	205-99-2	0.5 - 0.7
Dibenzo(a,h)pyrene	189-64-0	0.4 - 0.6
Benzo[j]fluoranthene	205-82-3	0.4 - 0.5
Benzo[k]fluoranthene	207-08-9	0.4 - 0.5
Dibenzo(a,e)pyrene	192-65-4	0.15 - 0.25
Dibenz[a,h]anthracene	53-70-3	0.15 - 0.15
Dibenzo[a,i]pyrene	189-55-9	0.15 - 0.15
Naphthalene	91-20-3	0.02 - 0.15
Fluoranthene	206-44-0	2 - 2.75
Phenanthrene	85-01-8	1.8 - 2.5
1,2-benzphenanthrene	218-01-9	0.7 - 1
1,2-benzanthracene	56-55-3	0.7 - 1
Benzo(a) Pyrene	50-32-8	0.7 - 1

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

1,2-benzanthracene (CAS 56-55-3)
 1,2-benzphenanthrene (CAS 218-01-9)
 Acenaphthene (CAS 83-32-9)
 Benzo (b) Fluoranthene (CAS 205-99-2)
 Benzo(a) Pyrene (CAS 50-32-8)
 Benzo[ghi]perylene (CAS 191-24-2)
 Benzo[j]fluoranthene (CAS 205-82-3)
 Benzo[k]fluoranthene (CAS 207-08-9)
 Dibenz[a,h]anthracene (CAS 53-70-3)
 Dibenzo(a,e)pyrene (CAS 192-65-4)
 Dibenzo(a,h)pyrene (CAS 189-64-0)
 Dibenzo[a,i]pyrene (CAS 189-55-9)
 Fluoranthene (CAS 206-44-0)
 Indeno[1,2,3-cd]pyrene (CAS 193-39-5)
 Naphthalene (CAS 91-20-3)
 Phenanthrene (CAS 85-01-8)
 Pyrene (CAS 129-00-0)
 TOLUENE (CAS 108-88-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

METHYL ETHYL KETONE (CAS 78-93-3) 6714
 TOLUENE (CAS 108-88-3) 6594

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

METHYL ETHYL KETONE (CAS 78-93-3) 35 %WV
 TOLUENE (CAS 108-88-3) 35 %WV

DEA Exempt Chemical Mixtures Code Number

METHYL ETHYL KETONE (CAS 78-93-3)	6714
TOLUENE (CAS 108-88-3)	594

US state regulations**US. Massachusetts RTK - Substance List**

1,2-benzanthracene (CAS 56-55-3)
1,2-benzphenanthrene (CAS 218-01-9)
Acenaphthene (CAS 83-32-9)
Benzo (b) Fluoranthene (CAS 205-99-2)
Benzo(a) Pyrene (CAS 50-32-8)
Benzo[ghi]perylene (CAS 191-24-2)
Benzo[j]fluoranthene (CAS 205-82-3)
Benzo[k]fluoranthene (CAS 207-08-9)
Dibenz[a,h]anthracene (CAS 53-70-3)
Dibenzo(a,e)pyrene (CAS 192-65-4)
Dibenzo(a,h)pyrene (CAS 189-64-0)
Dibenzo[a,i]pyrene (CAS 189-55-9)
Fluoranthene (CAS 206-44-0)
Indeno[1,2,3-cd]pyrene (CAS 193-39-5)
METHYL ETHYL KETONE (CAS 78-93-3)
MICA (CAS 12001-26-2)
Naphthalene (CAS 91-20-3)
Phenanthrene (CAS 85-01-8)
Pitch, Coal Tar, High-temp. (CAS 65996-93-2)
Pyrene (CAS 129-00-0)
Talc (powder) (CAS 14807-96-6)
TOLUENE (CAS 108-88-3)

US. New Jersey Worker and Community Right-to-Know Act

1,2-benzanthracene (CAS 56-55-3)
1,2-benzphenanthrene (CAS 218-01-9)
Acenaphthene (CAS 83-32-9)
Benzo (b) Fluoranthene (CAS 205-99-2)
Benzo(a) Pyrene (CAS 50-32-8)
Benzo[ghi]perylene (CAS 191-24-2)
Benzo[j]fluoranthene (CAS 205-82-3)
Benzo[k]fluoranthene (CAS 207-08-9)
Dibenz[a,h]anthracene (CAS 53-70-3)
Dibenzo(a,e)pyrene (CAS 192-65-4)
Dibenzo(a,h)pyrene (CAS 189-64-0)
Dibenzo[a,i]pyrene (CAS 189-55-9)
Fluoranthene (CAS 206-44-0)
Indeno[1,2,3-cd]pyrene (CAS 193-39-5)
METHYL ETHYL KETONE (CAS 78-93-3)
MICA (CAS 12001-26-2)
Naphthalene (CAS 91-20-3)
Phenanthrene (CAS 85-01-8)
Pitch, Coal Tar, High-temp. (CAS 65996-93-2)
Pyrene (CAS 129-00-0)
Talc (powder) (CAS 14807-96-6)
TOLUENE (CAS 108-88-3)

US. Pennsylvania Worker and Community Right-to-Know Law

1,2-benzanthracene (CAS 56-55-3)
1,2-benzphenanthrene (CAS 218-01-9)
Acenaphthene (CAS 83-32-9)
Benzo (b) Fluoranthene (CAS 205-99-2)
Benzo(a) Pyrene (CAS 50-32-8)
Benzo[ghi]perylene (CAS 191-24-2)
Benzo[j]fluoranthene (CAS 205-82-3)
Benzo[k]fluoranthene (CAS 207-08-9)
Coal Tar Pitch (CAS 8007-45-2)
Dibenz[a,h]anthracene (CAS 53-70-3)
Dibenzo(a,e)pyrene (CAS 192-65-4)
Dibenzo(a,h)pyrene (CAS 189-64-0)
Dibenzo[a,i]pyrene (CAS 189-55-9)

Fluoranthene (CAS 206-44-0)
 Indeno[1,2,3-cd]pyrene (CAS 193-39-5)
 METHYL ETHYL KETONE (CAS 78-93-3)
 MICA (CAS 12001-26-2)
 Naphthalene (CAS 91-20-3)
 Phenanthrene (CAS 85-01-8)
 Pitch, Coal Tar, High-temp. (CAS 65996-93-2)
 Pyrene (CAS 129-00-0)
 Talc (powder) (CAS 14807-96-6)
 TOLUENE (CAS 108-88-3)

US. Rhode Island RTK

1,2-benzanthracene (CAS 56-55-3)
 1,2-benzphenanthrene (CAS 218-01-9)
 Acenaphthene (CAS 83-32-9)
 Benzo (b) Fluoranthene (CAS 205-99-2)
 Benzo(a) Pyrene (CAS 50-32-8)
 Benzo[ghi]perylene (CAS 191-24-2)
 Benzo[j]fluoranthene (CAS 205-82-3)
 Benzo[k]fluoranthene (CAS 207-08-9)
 Dibenz[a,h]anthracene (CAS 53-70-3)
 Dibenzo(a,e)pyrene (CAS 192-65-4)
 Dibenzo(a,h)pyrene (CAS 189-64-0)
 Dibenzo[a,i]pyrene (CAS 189-55-9)
 Fluoranthene (CAS 206-44-0)
 Indeno[1,2,3-cd]pyrene (CAS 193-39-5)
 METHYL ETHYL KETONE (CAS 78-93-3)
 Naphthalene (CAS 91-20-3)
 Phenanthrene (CAS 85-01-8)
 Pyrene (CAS 129-00-0)
 TOLUENE (CAS 108-88-3)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

1,2-benzanthracene (CAS 56-55-3)	Listed: July 1, 1987
1,2-benzphenanthrene (CAS 218-01-9)	Listed: January 1, 1990
Benzo (b) Fluoranthene (CAS 205-99-2)	Listed: July 1, 1987
Benzo(a) Pyrene (CAS 50-32-8)	Listed: July 1, 1987
Benzo[j]fluoranthene (CAS 205-82-3)	Listed: July 1, 1987
Benzo[k]fluoranthene (CAS 207-08-9)	Listed: July 1, 1987
Carbazole (CAS 86-74-8)	Listed: May 1, 1996
Dibenz[a,h]anthracene (CAS 53-70-3)	Listed: January 1, 1988
Dibenzo(a,e)pyrene (CAS 192-65-4)	Listed: January 1, 1988
Dibenzo(a,h)pyrene (CAS 189-64-0)	Listed: January 1, 1988
Dibenzo[a,i]pyrene (CAS 189-55-9)	Listed: January 1, 1988
Indeno[1,2,3-cd]pyrene (CAS 193-39-5)	Listed: January 1, 1988
Naphthalene (CAS 91-20-3)	Listed: April 19, 2002

US - California Proposition 65 - CRT: Listed date/Developmental toxin

TOLUENE (CAS 108-88-3)	Listed: January 1, 1991
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US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

TOLUENE (CAS 108-88-3)	Listed: August 7, 2009
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International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	05-19-2015
Version #	01
HMIS® ratings	Health: 2* Flammability: 3 Physical hazard: 0
NFPA ratings	Health: 2 Flammability: 3 Instability: 0
Disclaimer	The information offered in this data sheet is designed only as guidance for the safe use, storage and handling of the product. This information is correct to the best of our knowledge and belief at the date of publication, however, no guarantee is made to its accuracy. This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. This material is intended for industrial use only. No warranty, expressed or implied is made.



Freon™ 404A refrigerant

Version 3.0

Revision Date 05/11/2016

Ref. 130000000494

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	: Freon™ 404A refrigerant
Tradename/Synonym	: Suva HP62 404A
Product Grade/Type	: ASHRAE Refrigerant number designation: R-404A
Product Use	: Refrigerant, For professional users only.
Restrictions on use	: Do not use product for anything outside of the above specified uses
Manufacturer/Supplier	: The Chemours Company FC, LLC 1007 Market Street Wilmington, DE 19899 United States of America
Product Information	: 1-844-773-CHEM (outside the U.S. 1-302-773-1000)
Medical Emergency	: 1-866-595-1473 (outside the U.S. 1-302-773-2000)
Transport Emergency	: CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Product hazard category

Gases under pressure

Liquefied gas

**Freon™ 404A refrigerant**

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Label content

Pictogram :



Signal word : Warning

Hazardous warnings : Contains gas under pressure; may explode if heated.

Hazardous prevention measures : Protect from sunlight. Store in a well-ventilated place.

Other hazards

Misuse or intentional inhalation abuse may lead to death without warning.

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Rapid evaporation of the liquid may cause frostbite.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
1,1,1-Trifluoroethane (HFC-143a)	420-46-2	52 %
Pentafluoroethane (HFC-125)	354-33-6	44 %



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1,1,1,2-Tetrafluoroethane (HFC-134a)	811-97-2	4 %
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SECTION 4. FIRST AID MEASURES

General advice	: Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.
Inhalation	: Remove from exposure, lie down. Artificial respiration and/or oxygen may be necessary. Call a physician.
Skin contact	: Flush area with lukewarm water. Do not use hot water. If frostbite has occurred, call a physician.
Eye contact	: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.
Ingestion	: Is not considered a potential route of exposure.
Most important symptoms/effects, acute and delayed	: Misuse or intentional inhalation abuse may cause death without warning symptoms, due to cardiac effects. Other symptoms potentially related to misuse or inhalation abuse are: Anaesthetic effects Light-headedness dizziness, confusion, incoordination, drowsiness, or unconsciousness irregular heartbeat with a strange sensation in the chest, heart thumping, apprehension, feeling of fainting, dizziness or weakness
Protection of first-aiders	: If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Notes to physician	: Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.



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SECTION 5. FIREFIGHTING MEASURES

- | | |
|---|---|
| Suitable extinguishing media | : As appropriate for combustibles in area. Extinguishant for other burning material in area is sufficient to stop burning. |
| Unsuitable extinguishing media | : No applicable data available. |
| Specific hazards | : Cylinders are equipped with pressure and temperature relief devices, but may still rupture under fire conditions. Decomposition may occur. Contact of welding or soldering torch flame with high concentrations of refrigerant can result in visible changes in the size and colour of the torch flame. This flame effect will only occur in concentrations of product well above the recommended exposure limit. Therefore stop all work and ventilate to disperse refrigerant vapors from the work area before using any open flames. This substance is not flammable in air at temperatures up to 100 deg. C (212 deg. F) at atmospheric pressure. However, mixtures of this substance with high concentrations of air at elevated pressure and/or temperature can become combustible in the presence of an ignition source. This substance can also become combustible in an oxygen enriched environment (oxygen concentrations greater than that in air). Whether a mixture containing this substance and air, or this substance in an oxygen enriched atmosphere become combustible depends on the inter-relationship of 1) the temperature 2) the pressure, and 3) the proportion of oxygen in the mixture. In general, this substance should not be allowed to exist with air above atmospheric pressure or at high temperatures; or in an oxygen enriched environment. For example this substance should NOT be mixed with air under pressure for leak testing or other purposes. Experimental data have also been reported which indicate combustibility of this substance in the presence of certain concentrations of chlorine. |
| Special protective equipment for firefighters | : In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. Wear neoprene gloves during cleaning up work after a fire. |



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Further information : Use water spray or fog to protect the fire fighters and to cool container. Self-contained breathing apparatus (SCBA) is required if containers rupture and contents are released under fire conditions.
Water runoff should be contained and neutralized prior to release.
Cool containers/tanks with water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel) : Ventilate area, especially low or enclosed places where heavy vapours might collect.

Environmental precautions : Should not be released into the environment.
In accordance with local and national regulations.

Spill Cleanup : Evaporates.
Ventilate area using forced ventilation, especially low or enclosed places where heavy vapors might collect.

Accidental Release Measures : Avoid open flames and high temperatures. Self-contained breathing apparatus (SCBA) is required if a large release occurs.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel) : Avoid breathing vapours or mist. Avoid contact with skin, eyes and clothing. Provide sufficient air exchange and/or exhaust in work rooms. For personal protection see section 8.
Handle in accordance with good industrial hygiene and safety practice.

Handling (Physical Aspects) : The product should not be mixed with air for leak testing or used with air for any other purpose above atmospheric pressure. Contact with chlorine or other strong oxidizing agents should also be avoided.

Dust explosion class : Not applicable



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Storage : Valve protection caps and valve outlet threaded plugs must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (<3000 psig) piping or systems. Never attempt to lift cylinder by its cap. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over.

Separate full containers from empty containers. Keep at temperature not exceeding 52°C. Do not store near combustible materials. Avoid area where salt or other corrosive materials are present.

see user defined free text

The product has an indefinite shelf life when stored properly.

Storage period : > 10 yr

Storage temperature : < 52 °C (< 126 °F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low or enclosed places. Refrigerant Concentration monitors may be necessary to determine vapor concentrations in work areas prior to use of torches or other open flames, or if employees are entering enclosed areas.

Personal protective equipment

Respiratory protection : Under normal manufacturing conditions, no respiratory protection is required when using this product.

Hand protection : Material: Impervious gloves

Eye protection : Wear safety glasses with side shields. Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.

Protective measures : Self-contained breathing apparatus (SCBA) is required if a large release

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occurs.

Exposure Guidelines
Exposure Limit Values1,1,1-Trifluoroethane
No applicable data available.Pentafluoroethane
No applicable data available.1,1,1,2-Tetrafluoroethane
No applicable data available.**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance

Physical state	: gaseous
Form	: Liquefied gas
Color	: colourless

Odor	: slight, ether-like
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Odor threshold	: No applicable data available.
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pH	: No applicable data available.
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Melting point/freezing point	: Melting point Not available for this mixture.
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Boiling point/boiling range	: Boiling point -46.2 °C (-51.2 °F)
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Flash point	: does not flash
Evaporation rate	: > 1 (CCL4=1.0)
Flammability (solid, gas)	: No applicable data available.
Upper explosion limit	: Method: None per ASTM E681
Lower explosion limit	: Method: None per ASTM E681
Vapor pressure	: 12,546 hPa at 25 °C (77 °F)
Vapor density	: 3.4 at 25°C (77°F) and 1013 hPa (Air=1.0)
Density	: 1.044 g/cm ³ at 25 °C (77 °F) (as liquid)
Specific gravity (Relative density)	: 1.05 at 25 °C (77 °F)
Water solubility	: not determined
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: No applicable data available.
Auto-ignition temperature	: No applicable data available.
Ignition temperature	: no data available
Decomposition temperature	: No applicable data available.
Viscosity, kinematic	: No applicable data available.
Viscosity, dynamic	: No applicable data available.
% Volatile	: 100 %



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SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Decomposes on heating.
Chemical stability	: Stable at normal temperatures and storage conditions.
Possibility of hazardous reactions	: Polymerization will not occur.
Conditions to avoid	: Avoid open flames and high temperatures.
Incompatible materials	: Alkali metals Alkaline earth metals, Powdered metals, Powdered metal salts
Hazardous decomposition products	: Decomposition products are hazardous., This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrofluoric acid and possibly carbonyl fluoride., These materials are toxic and irritating., Avoid contact with decomposition products

SECTION 11. TOXICOLOGICAL INFORMATION

1,1,1-Trifluoroethane (HFC-143a)	
Inhalation 4 h LC50	: > 591000 ppm , Rat
Inhalation No Observed Adverse Effect Concentration	: 250000 ppm , Dog Cardiac sensitization
Inhalation Low Observed Adverse Effect Concentration (LOAEC)	: 300000 ppm , Dog Cardiac sensitization
Skin sensitization	: Does not cause respiratory sensitisation., human
Repeated dose toxicity	: Inhalation Rat - gas NOAEL: > 40000, Method: OECD Test Guideline 413 No toxicologically significant effects were found.



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Carcinogenicity	: Not classifiable as a human carcinogen. Animal testing did not show any carcinogenic effects.
Mutagenicity	: Animal testing did not show any mutagenic effects. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Reproductive toxicity	: No toxicity to reproduction No effects on or via lactation Animal testing showed no reproductive toxicity.
Teratogenicity	: Animal testing showed no developmental toxicity.
Further information	: Cardiac sensitisation threshold limit : 862068.97 mg/m3

Pentafluoroethane (HFC-125)

Inhalation 4 h LC50	: > 800000 ppm , Rat
Inhalation No Observed Adverse Effect Concentration	: 75000 ppm , Dog Cardiac sensitization
Inhalation Low Observed Adverse Effect Concentration (LOAEC)	: 100000 ppm , Dog Cardiac sensitization
Skin sensitization	: Does not cause respiratory sensitisation., human
Repeated dose toxicity	: Inhalation Rat - gas No toxicologically significant effects were found.
Carcinogenicity	: Not classifiable as a human carcinogen. Overall weight of evidence indicates that the substance is not carcinogenic.
Mutagenicity	: Animal testing did not show any mutagenic effects. Evidence suggests this substance does not cause genetic damage in cultured mammalian cells. Did not cause genetic damage in cultured bacterial cells.



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Reproductive toxicity : No toxicity to reproduction
Animal testing showed no reproductive toxicity.

Teratogenicity : Animal testing showed no developmental toxicity.

Further information : Cardiac sensitisation threshold limit : 490000 mg/m3

1,1,1,2-Tetrafluoroethane (HFC-134a)

Inhalation 4 h LC50 : > 567000 ppm , Rat

Inhalation No Observed Adverse Effect Concentration : 40000 ppm , Dog
Cardiac sensitization

Inhalation Low Observed Adverse Effect Concentration (LOAEC) : 80000 ppm , Dog
Cardiac sensitization

Skin irritation : No skin irritation, Rabbit

Eye irritation : No eye irritation, Rabbit

Skin sensitization : Does not cause skin sensitisation., Guinea pig
Does not cause respiratory sensitisation., Rat

Repeated dose toxicity : Inhalation
Rat
-
gas
NOAEL: 50000,
No toxicologically significant effects were found.

Carcinogenicity : Not classifiable as a human carcinogen.
Overall weight of evidence indicates that the substance is not carcinogenic.

Mutagenicity : Animal testing did not show any mutagenic effects.
Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

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Reproductive toxicity	: No toxicity to reproduction No effects on or via lactation Animal testing showed no reproductive toxicity.
Teratogenicity	: Animal testing showed no developmental toxicity.
Further information	: Cardiac sensitisation threshold limit : 334000 mg/m3

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION**Aquatic Toxicity****1,1,1-Trifluoroethane (HFC-143a)**

96 h LC50	: Oncorhynchus mykiss (rainbow trout) > 40 mg/l OECD Test Guideline 203
96 h ErC50	: Pseudokirchneriella subcapitata (green algae) > 44 mg/l OECD Test Guideline 201
48 h EC50	: Daphnia magna (Water flea) 300 mg/l OECD Test Guideline 202

Pentafluoroethane (HFC-125)

96 h LC50	: Oncorhynchus mykiss (rainbow trout) 450 mg/l Information given is based on data obtained from similar substances.
96 h ErC50	: Algae 142 mg/l Information given is based on data obtained from similar substances.
72 h NOEC	: Pseudokirchneriella subcapitata (green algae) 13.2 mg/l



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Information given is based on data obtained from similar substances.

48 h EC50 : Daphnia magna (Water flea) 980 mg/l
Information given is based on data obtained from similar substances.

1,1,1,2-Tetrafluoroethane (HFC-134a)

96 h LC50 : Oncorhynchus mykiss (rainbow trout) 450 mg/l

96 h ErC50 : Algae 142 mg/l
Information given is based on data obtained from similar substances.

72 h NOEC : Pseudokirchneriella subcapitata (green algae) 13.2 mg/l
Information given is based on data obtained from similar substances.

48 h EC50 : Daphnia magna (Water flea) 980 mg/l

Environmental Fate

1,1,1-Trifluoroethane (HFC-143a)

Bioaccumulation : Information given is based on data obtained from similar substances.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product : Can be used after re-conditioning. Recover by distillation or remove to a permitted waste disposal facility. Comply with applicable Federal, State/Provincial and Local Regulations.

Contaminated packaging : Empty pressure vessels should be returned to the supplier.

SECTION 14. TRANSPORT INFORMATION

DOT UN number : 3337
Proper shipping name : Refrigerant gas R 404A
Class : 2.2

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IATA_C	Labelling No.	: 2.2
	UN number	: 3337
	Proper shipping name	: Refrigerant gas R 404A
IMDG	Class	: 2.2
	Labelling No.	: 2.2
	UN number	: 3337
	Proper shipping name	: REFRIGERANT GAS R 404A
	Class	: 2.2
	Labelling No.	: 2.2

SECTION 15. REGULATORY INFORMATION

TSCA	: On the inventory, or in compliance with the inventory
SARA 313 Regulated Chemical(s)	: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
California Prop. 65	: Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

SECTION 16. OTHER INFORMATION

Freon™ and any associated logos are trademarks or copyrights of The Chemours Company FC, LLC. Chemours™ and the Chemours Logo are trademarks of The Chemours Company. Before use read Chemours safety information. For further information contact the local Chemours office or nominated distributors.

Revision Date : 05/11/2016

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the

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date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Significant change from previous version is denoted with a double bar.

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This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	: Freon™ 410A refrigerant
Tradename/Synonym	: Suva™ 9100 R-410A Suva™ R-410A 410A HFC 410A
Product Grade/Type	: ASHRAE Refrigerant number designation: R-410A
Product Use	: Refrigerant, For professional users only.
Restrictions on use	: Do not use product for anything outside of the above specified uses
Manufacturer/Supplier	: The Chemours Company FC, LLC 1007 Market Street Wilmington, DE 19899 United States of America
Product Information	: 1-844-773-CHEM (outside the U.S. 1-302-773-1000)
Medical Emergency	: 1-866-595-1473 (outside the U.S. 1-302-773-2000)
Transport Emergency	: CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION**Product hazard category**

Gases under pressure

Liquefied gas

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Label content

Pictogram :



Signal word : Warning

Hazardous warnings : Contains gas under pressure; may explode if heated.

Hazardous prevention measures : Protect from sunlight. Store in a well-ventilated place.

Other hazards

Misuse or intentional inhalation abuse may lead to death without warning.

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Rapid evaporation of the liquid may cause frostbite.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Pentafluoroethane (HFC-125)	354-33-6	50 %
Difluoromethane (HFC-32)	75-10-5	50 %



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SECTION 4. FIRST AID MEASURES

General advice	: Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.
Inhalation	: Remove from exposure, lie down. Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Consult a physician.
Skin contact	: Take off contaminated clothing and shoes immediately. Flush area with lukewarm water. Do not use hot water. If frostbite has occurred, call a physician.
Eye contact	: Rinse immediately with plenty of water and seek medical advice.
Ingestion	: Is not considered a potential route of exposure.
Most important symptoms/effects, acute and delayed	: Anaesthetic effects Light-headedness irregular heartbeat with a strange sensation in the chest, heart thumping, apprehension, feeling of fainting, dizziness or weakness
Protection of first-aiders	: If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Notes to physician	: Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	: No applicable data available.



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Specific hazards	: Cylinders are equipped with pressure and temperature relief devices, but may still rupture under fire conditions. Decomposition may occur. Contact of welding or soldering torch flame with high concentrations of refrigerant can result in visible changes in the size and colour of the torch flame. This flame effect will only occur in concentrations of product well above the recommended exposure limit. Therefore stop all work and ventilate to disperse refrigerant vapors from the work area before using any open flames. This substance is not flammable in air at temperatures up to 100 deg. C (212 deg. F) at atmospheric pressure. However, mixtures of this substance with high concentrations of air at elevated pressure and/or temperature can become combustible in the presence of an ignition source. This substance can also become combustible in an oxygen enriched environment (oxygen concentrations greater than that in air). Whether a mixture containing this substance and air, or this substance in an oxygen enriched atmosphere become combustible depends on the inter-relationship of 1) the temperature 2) the pressure, and 3) the proportion of oxygen in the mixture. In general, this substance should not be allowed to exist with air above atmospheric pressure or at high temperatures; or in an oxygen enriched environment. For example this substance should NOT be mixed with air under pressure for leak testing or other purposes. Experimental data have also been reported which indicate combustibility of this substance in the presence of certain concentrations of chlorine.
Special protective equipment for firefighters	: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. Wear neoprene gloves during cleaning up work after a fire.
Further information	: Cool containers/tanks with water spray. Self-contained breathing apparatus (SCBA) is required if containers rupture and contents are released under fire conditions. Water runoff should be contained and neutralized prior to release.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.



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Safeguards (Personnel)	: Evacuate personnel to safe areas. Ventilate area, especially low or enclosed places where heavy vapours might collect. Refer to protective measures listed in sections 7 and 8.
Environmental precautions	: Should not be released into the environment. In accordance with local and national regulations.
Spill Cleanup	: Evaporates. Ventilate area using forced ventilation, especially low or enclosed places where heavy vapors might collect.
Accidental Release Measures	: Avoid open flames and high temperatures. Self-contained breathing apparatus (SCBA) is required if a large release occurs.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel)	: Avoid breathing vapours or mist. Avoid contact with skin, eyes and clothing. Provide sufficient air exchange and/or exhaust in work rooms. For personal protection see section 8.
Handling (Physical Aspects)	: The product should not be mixed with air for leak testing or used with air for any other purpose above atmospheric pressure. Contact with chlorine or other strong oxidizing agents should also be avoided.
Dust explosion class	: Not applicable
Storage	: Valve protection caps and valve outlet threaded plugs must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (<3000 psig) piping or systems. Never attempt to lift cylinder by its cap. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Separate full containers from empty containers. Keep at temperature not exceeding 52°C. Do not store near combustible materials. Avoid area where salt or other corrosive materials are present.



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The product has an indefinite shelf life when stored properly.

Storage period : > 10 yr

Storage temperature : < 52 °C (< 126 °F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : Use sufficient ventilation to keep employee exposure below recommended limits. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low or enclosed places. Refrigerant Concentration monitors may be necessary to determine vapor concentrations in work areas prior to use of torches or other open flames, or if employees are entering enclosed areas.

Personal protective equipment

Respiratory protection : Under normal manufacturing conditions, no respiratory protection is required when using this product.

Hand protection : Additional protection: Impervious gloves

Hand protection : Additional protection: The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other., Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

Eye protection : Wear safety glasses with side shields. Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.

Protective measures : Self-contained breathing apparatus (SCBA) is required if a large release occurs.

Exposure Guidelines
Exposure Limit Values



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Pentafluoroethane
No applicable data available.

Difluoromethane
No applicable data available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state : gaseous
Form : Liquefied gas
Color : colourless

Odor : slight, ether-like

Odor threshold : No applicable data available.

pH : neutral

Melting point/range : No applicable data available.

Boiling point/boiling range : Boiling point
-51.4 °C (-60.5 °F)

Flash point : does not flash

Evaporation rate : > 1
(CCL4=1.0)

Flammability (solid, gas) : No applicable data available.

Upper explosion limit : Method: None per ASTM E681

Lower explosion limit : Method: None per ASTM E681



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Vapor pressure	: 16,574 hPa at 25 °C (77 °F)
Vapor density	: 2.5 at 25°C (77°F) and 1013 hPa (Air=1.0)
Density	: 1.062 g/cm ³ at 25 °C (77 °F) (as liquid)
Density	: 0.0066 g/cm ³ at ca. 26 °C (79 °F) at (1,013 hPa)
Specific gravity (Relative density)	: 1.06 at 25 °C (77 °F)
Water solubility	: not determined
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: No applicable data available.
Auto-ignition temperature	: No applicable data available.
Decomposition temperature	: No applicable data available.
Viscosity, kinematic	: No applicable data available.
Viscosity, dynamic	: No applicable data available.
% Volatile	: 100 %

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Stable at normal ambient temperature and pressure.
Chemical stability	: Stable under recommended storage conditions.
Possibility of hazardous reactions	: Polymerization will not occur.
Conditions to avoid	: Avoid open flames and high temperatures.



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Incompatible materials	: No applicable data available.
Hazardous decomposition products	: Decomposition products are hazardous., This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrofluoric acid and possibly carbonyl fluoride., These materials are toxic and irritating., Avoid contact with decomposition products

SECTION 11. TOXICOLOGICAL INFORMATION

Pentafluoroethane (HFC-125)

Inhalation 4 h LC50	: > 800000 ppm , Rat
Inhalation No Observed Adverse Effect Concentration	: 75000 ppm , Dog Cardiac sensitization
Inhalation Low Observed Adverse Effect Concentration (LOAEC)	: 100000 ppm , Dog Cardiac sensitization
Skin sensitization	: Does not cause respiratory sensitisation., human
Repeated dose toxicity	: Inhalation Rat - gas No toxicologically significant effects were found.
Carcinogenicity	: Not classifiable as a human carcinogen. Overall weight of evidence indicates that the substance is not carcinogenic.
Mutagenicity	: Animal testing did not show any mutagenic effects. Evidence suggests this substance does not cause genetic damage in cultured mammalian cells. Did not cause genetic damage in cultured bacterial cells.
Reproductive toxicity	: No toxicity to reproduction Animal testing showed no reproductive toxicity.
Teratogenicity	: Animal testing showed no developmental toxicity.

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Further information	: Cardiac sensitisation threshold limit : 490000 mg/m3
Difluoromethane (HFC-32)	
Inhalation 4 h LC50	: > 520000 ppm , Rat
Inhalation Low Observed Adverse Effect Concentration (LOAEC)	: > 350000 ppm , Dog Cardiac sensitization
Inhalation No Observed Adverse Effect Concentration	: 350000 ppm , Dog Cardiac sensitization
Skin irritation	: No skin irritation, Not tested on animals Not expected to cause skin irritation based on expert review of the properties of the substance.
Eye irritation	: No eye irritation, Not tested on animals Not expected to cause eye irritation based on expert review of the properties of the substance.
Skin sensitization	: Does not cause skin sensitisation., Not tested on animals Not expected to cause sensitization based on expert review of the properties of the substance. There are no reports of human respiratory sensitization.
Repeated dose toxicity	: Inhalation Rat - No toxicologically significant effects were found.
Mutagenicity	: Animal testing did not show any mutagenic effects. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Reproductive toxicity	: No toxicity to reproduction Animal testing showed no reproductive toxicity. Information given is based on data obtained from similar substances.
Teratogenicity	: Animal testing showed no developmental toxicity.

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Further information : Cardiac sensitisation threshold limit : > 735000 mg/m3

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION**Aquatic Toxicity****Pentafluoroethane (HFC-125)**

- | | |
|------------|---|
| 96 h LC50 | : Oncorhynchus mykiss (rainbow trout) 450 mg/l
Information given is based on data obtained from similar substances. |
| 96 h ErC50 | : Algae 142 mg/l
Information given is based on data obtained from similar substances. |
| 72 h NOEC | : Pseudokirchneriella subcapitata (green algae) 13.2 mg/l
Information given is based on data obtained from similar substances. |
| 48 h EC50 | : Daphnia magna (Water flea) 980 mg/l
Information given is based on data obtained from similar substances. |

Difluoromethane (HFC-32)

- | | |
|-----------|---|
| 96 h LC50 | : Fish 1,507 mg/l |
| 96 h EC50 | : Algae 142 mg/l |
| 48 h EC50 | : Daphnia (water flea) 652 mg/l |
| 30 d | : NOEC Fish (unspecified species) 65.8 mg/l |

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Environmental Fate

Difluoromethane (HFC-32)

Biodegradability

: 5 % OECD Test Guideline 301D
Not readily biodegradable.**SECTION 13. DISPOSAL CONSIDERATIONS**

Waste disposal methods - Product : Can be used after re-conditioning. Recover by distillation or remove to a permitted waste disposal facility. Comply with applicable Federal, State/Provincial and Local Regulations.

Contaminated packaging : Empty pressure vessels should be returned to the supplier.

SECTION 14. TRANSPORT INFORMATION

DOT	UN number	: 3163
	Proper shipping name	: Liquefied gas, n.o.s. (Pentafluoroethane, Difluoromethane)
	Class	: 2.2
	Labelling No.	: 2.2
IATA_C	UN number	: 3163
	Proper shipping name	: Liquefied gas, n.o.s. (Pentafluoroethane, Difluoromethane)
	Class	: 2.2
	Labelling No.	: 2.2
IMDG	UN number	: 3163
	Proper shipping name	: LIQUEFIED GAS, N.O.S. (Pentafluoroethane, Difluoromethane)
	Class	: 2.2
	Labelling No.	: 2.2



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SECTION 15. REGULATORY INFORMATION

TSCA	: On the inventory, or in compliance with the inventory
SARA 313 Regulated Chemical(s)	: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
PA Right to Know Regulated Chemical(s)	: Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Difluoromethane
NJ Right to Know Regulated Chemical(s)	: Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Difluoromethane
California Prop. 65	: Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

SECTION 16. OTHER INFORMATION

Freon™ and any associated logos are trademarks or copyrights of The Chemours Company FC, LLC. Chemours™ and the Chemours Logo are trademarks of The Chemours Company. Before use read Chemours safety information. For further information contact the local Chemours office or nominated distributors.

Revision Date : 05/12/2016

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Significant change from previous version is denoted with a double bar.



FreonTM 410A refrigerant

Version 3.0

Revision Date 05/12/2016

Ref. 130000050990

**Freon™ 507 refrigerant**

Version 3.0

Revision Date 05/12/2016

Ref. 130000050989

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	: Freon™ 507 refrigerant
Tradename/Synonym	: R-507 R-507A 507 507A
Product Grade/Type	: ASHRAE Refrigerant number designation: R-507 or R-507A
Product Use	: Refrigerant, For professional users only.
Restrictions on use	: Do not use product for anything outside of the above specified uses
Manufacturer/Supplier	: The Chemours Company FC, LLC 1007 Market Street Wilmington, DE 19899 United States of America
Product Information	: 1-844-773-CHEM (outside the U.S. 1-302-773-1000)
Medical Emergency	: 1-866-595-1473 (outside the U.S. 1-302-773-2000)
Transport Emergency	: CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION**Product hazard category**

Gases under pressure

Liquefied gas

**Freon™ 507 refrigerant**

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Ref. 130000050989

Label content

Pictogram

:



Signal word

: Warning

Hazardous warnings

: Contains gas under pressure; may explode if heated.

Hazardous prevention
measures

: Protect from sunlight. Store in a well-ventilated place.

Other hazards

Misuse or intentional inhalation abuse may lead to death without warning.

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Rapid evaporation of the liquid may cause frostbite.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Pentafluoroethane (HFC-125)	354-33-6	50 %
1,1,1-Trifluoroethane (HFC-143a)	420-46-2	50 %



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SECTION 4. FIRST AID MEASURES

General advice	: Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.
Inhalation	: Remove from exposure, lie down. Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Consult a physician.
Skin contact	: In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Take off all contaminated clothing immediately. Consult a physician. Wash contaminated clothing before re-use. Treat for frostbite if necessary by gently warming affected area.
Eye contact	: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Consult a physician if necessary.
Ingestion	: Is not considered a potential route of exposure.
Most important symptoms/effects, acute and delayed	: Anaesthetic effects Light-headedness irregular heartbeat with a strange sensation in the chest, heart thumping, apprehension, feeling of fainting, dizziness or weakness
Protection of first-aiders	: If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Notes to physician	: Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
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Unsuitable extinguishing media : No applicable data available.

Specific hazards : Cylinders are equipped with pressure and temperature relief devices, but may still rupture under fire conditions. Decomposition may occur. Contact of welding or soldering torch flame with high concentrations of refrigerant can result in visible changes in the size and colour of the torch flame. This flame effect will only occur in concentrations of product well above the recommended exposure limit. Therefore stop all work and ventilate to disperse refrigerant vapors from the work area before using any open flames. This substance is not flammable in air at temperatures up to 100 deg. C (212 deg. F) at atmospheric pressure. However, mixtures of this substance with high concentrations of air at elevated pressure and/or temperature can become combustible in the presence of an ignition source. This substance can also become combustible in an oxygen enriched environment (oxygen concentrations greater than that in air). Whether a mixture containing this substance and air, or this substance in an oxygen enriched atmosphere become combustible depends on the inter-relationship of 1) the temperature 2) the pressure, and 3) the proportion of oxygen in the mixture. In general, this substance should not be allowed to exist with air above atmospheric pressure or at high temperatures; or in an oxygen enriched environment. For example this substance should NOT be mixed with air under pressure for leak testing or other purposes. Experimental data have also been reported which indicate combustibility of this substance in the presence of certain concentrations of chlorine.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. Wear neoprene gloves during cleaning up work after a fire.

Further information : Cool containers/tanks with water spray. Self-contained breathing apparatus (SCBA) is required if containers rupture and contents are released under fire conditions.
Water runoff should be contained and neutralized prior to release.



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SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

- | | |
|-----------------------------|---|
| Safeguards (Personnel) | : Evacuate personnel to safe areas. Ventilate area, especially low or enclosed places where heavy vapours might collect. |
| Environmental precautions | : Should not be released into the environment.
In accordance with local and national regulations. |
| Spill Cleanup | : Evaporates.
Ventilate area using forced ventilation, especially low or enclosed places where heavy vapors might collect. |
| Accidental Release Measures | : Avoid open flames and high temperatures. Self-contained breathing apparatus (SCBA) is required if a large release occurs. |

SECTION 7. HANDLING AND STORAGE

- | | |
|-----------------------------|---|
| Handling (Personnel) | : Avoid breathing vapours or mist. Avoid contact with skin, eyes and clothing. Provide sufficient air exchange and/or exhaust in work rooms. For personal protection see section 8. |
| Handling (Physical Aspects) | : The product should not be mixed with air for leak testing or used with air for any other purpose above atmospheric pressure. Contact with chlorine or other strong oxidizing agents should also be avoided. |
| Dust explosion class | : Not applicable |
| Storage | : Valve protection caps and valve outlet threaded plugs must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (<3000 psig) piping or systems. Never attempt to lift cylinder by its cap. Use a check valve or trap in the discharge line to prevent hazardous back flow into |

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the cylinder. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over.

Separate full containers from empty containers. Keep at temperature not exceeding 52°C. Do not store near combustible materials. Avoid area where salt or other corrosive materials are present.

The product has an indefinite shelf life when stored properly.

Storage period : > 10 yr

Storage temperature : < 52 °C (< 126 °F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : Refrigerant Concentration monitors may be necessary to determine vapor concentrations in work areas prior to use of torches or other open flames, or if employees are entering enclosed areas. Use sufficient ventilation to keep employee exposure below recommended limits. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low or enclosed places.

Personal protective equipment

Respiratory protection : For rescue and maintenance work in storage tanks use self-contained breathing apparatus. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Hand protection : Additional protection: Impervious gloves

Eye protection : Wear safety glasses with side shields. Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.

Protective measures : Self-contained breathing apparatus (SCBA) is required if a large release occurs.

Exposure Guidelines
Exposure Limit Values

Pentafluoroethane

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No applicable data available.

1,1,1-Trifluoroethane

No applicable data available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state : gaseous
Form : Liquefied gas
Color : colourless

Odor : Slight odour, ether-like

Odor threshold : No applicable data available.

pH : No applicable data available.

Melting point/range : No applicable data available.

Boiling point/boiling range : Boiling point
-46.7 °C (-52.1 °F) at 1,013.25 hPa

Flash point : does not flash

Evaporation rate : > 1
(CCL4=1.0)

Flammability (solid, gas) : No applicable data available.

Upper explosion limit : Method: None per ASTM E681

Lower explosion limit : Method: None per ASTM E681

Vapor pressure : 12,826 hPa at 25 °C (77 °F)

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Vapor density	: 3.5 at 25 °C (77 °F) (Air = 1.0)
Density	: 1.05 g/cm ³ at 25 °C (77 °F) (as liquid)
Specific gravity (Relative density)	: 1.05 at 25 °C (77 °F)
Water solubility	: not determined
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: No applicable data available.
Auto-ignition temperature	: No applicable data available.
Ignition temperature	: no data available
Decomposition temperature	: No applicable data available.
Viscosity, kinematic	: No applicable data available.
Viscosity, dynamic	: No applicable data available.
% Volatile	: 100 %

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Decomposes on heating.
Chemical stability	: Stable at normal temperatures and storage conditions.
Possibility of hazardous reactions	: Polymerization will not occur.
Conditions to avoid	: Avoid open flames and high temperatures.



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Incompatible materials : Alkali metals Alkaline earth metals, Powdered metals, Powdered metal salts

Hazardous decomposition products : Decomposition products are hazardous., This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrofluoric acid and possibly carbonyl fluoride., These materials are toxic and irritating., Avoid contact with decomposition products

SECTION 11. TOXICOLOGICAL INFORMATION

Pentafluoroethane (HFC-125)

Inhalation 4 h LC50 : > 800000 ppm , Rat

Inhalation No Observed Adverse Effect Concentration : 75000 ppm , Dog
Cardiac sensitization

Inhalation Low Observed Adverse Effect Concentration (LOAEC) : 100000 ppm , Dog
Cardiac sensitization

Skin sensitization : Does not cause respiratory sensitisation., human

Repeated dose toxicity : Inhalation
Rat
-
gas
No toxicologically significant effects were found.

Carcinogenicity : Not classifiable as a human carcinogen.
Overall weight of evidence indicates that the substance is not carcinogenic.

Mutagenicity : Animal testing did not show any mutagenic effects.
Evidence suggests this substance does not cause genetic damage in cultured mammalian cells.
Did not cause genetic damage in cultured bacterial cells.

Reproductive toxicity : No toxicity to reproduction
Animal testing showed no reproductive toxicity.

Teratogenicity : Animal testing showed no developmental toxicity.



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Further information	: Cardiac sensitisation threshold limit : 490000 mg/m3
1,1,1-Trifluoroethane (HFC-143a)	
Inhalation 4 h LC50	: > 591000 ppm , Rat
Inhalation No Observed Adverse Effect Concentration	: 250000 ppm , Dog Cardiac sensitization
Inhalation Low Observed Adverse Effect Concentration (LOAEC)	: 300000 ppm , Dog Cardiac sensitization
Skin sensitization	: Does not cause respiratory sensitisation., human
Repeated dose toxicity	: Inhalation Rat - gas NOAEL: > 40000, Method: OECD Test Guideline 413 No toxicologically significant effects were found.
Carcinogenicity	: Not classifiable as a human carcinogen. Animal testing did not show any carcinogenic effects.
Mutagenicity	: Animal testing did not show any mutagenic effects. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Reproductive toxicity	: No toxicity to reproduction No effects on or via lactation Animal testing showed no reproductive toxicity.
Teratogenicity	: Animal testing showed no developmental toxicity.
Further information	: Cardiac sensitisation threshold limit : 862068.97 mg/m3

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according



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to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

Pentafluoroethane (HFC-125)

96 h LC50	: Oncorhynchus mykiss (rainbow trout) 450 mg/l Information given is based on data obtained from similar substances.
96 h ErC50	: Algae 142 mg/l Information given is based on data obtained from similar substances.
72 h NOEC	: Pseudokirchneriella subcapitata (green algae) 13.2 mg/l Information given is based on data obtained from similar substances.
48 h EC50	: Daphnia magna (Water flea) 980 mg/l Information given is based on data obtained from similar substances.

1,1,1-Trifluoroethane (HFC-143a)

96 h LC50	: Oncorhynchus mykiss (rainbow trout) > 40 mg/l OECD Test Guideline 203
96 h ErC50	: Pseudokirchneriella subcapitata (green algae) > 44 mg/l OECD Test Guideline 201
48 h EC50	: Daphnia magna (Water flea) 300 mg/l OECD Test Guideline 202

Environmental Fate

1,1,1-Trifluoroethane (HFC-143a)

Bioaccumulation	: Information given is based on data obtained from similar substances.
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SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product : Can be used after re-conditioning. Recover by distillation or remove to a permitted waste disposal facility. Comply with applicable Federal, State/Provincial and Local Regulations.

Contaminated packaging : Empty pressure vessels should be returned to the supplier.

SECTION 14. TRANSPORT INFORMATION

DOT	UN number	: 3163
	Proper shipping name	: Liquefied gas, n.o.s. (Pentafluoroethane, 1,1,1-Trifluoroethane)
	Class	: 2.2
	Labelling No.	: 2.2
IATA_C	UN number	: 3163
	Proper shipping name	: Liquefied gas, n.o.s. (Pentafluoroethane, 1,1,1-Trifluoroethane)
	Class	: 2.2
	Labelling No.	: 2.2
IMDG	UN number	: 3163
	Proper shipping name	: LIQUEFIED GAS, N.O.S. (Pentafluoroethane, 1,1,1-Trifluoroethane)
	Class	: 2.2
	Labelling No.	: 2.2

SECTION 15. REGULATORY INFORMATION

TSCA : On the inventory, or in compliance with the inventory



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SARA 313 Regulated Chemical(s)	: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
NJ Right to Know Regulated Chemical(s)	: Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): 1,1,1-Trifluoroethane
California Prop. 65	: Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

SECTION 16. OTHER INFORMATION

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Revision Date : 05/12/2016

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Significant change from previous version is denoted with a double bar.

**Freon™ 22 refrigerant**

Version 3.0

Revision Date 05/04/2016

Ref. 130000024323

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Freon™ 22 refrigerant
Tradename/Synonym	:	R-22 CHLORODIFLUOROMETHANE HCFC-22 DYMEL™ 22
Product Grade/Type	:	ASHRAE Refrigerant number designation: R-22
Product Use	:	Refrigerant, For industrial use only.
Restrictions on use	:	Do not use product for anything outside of the above specified uses
Manufacturer/Supplier	:	The Chemours Company FC, LLC 1007 Market Street Wilmington, DE 19899 United States of America
Product Information	:	1-844-773-CHEM (outside the U.S. 1-302-773-1000)
Medical Emergency	:	1-866-595-1473 (outside the U.S. 1-302-773-2000)
Transport Emergency	:	CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION**Product hazard category**

Gases under pressure

Liquefied gas

**Freon™ 22 refrigerant**

Version 3.0

Revision Date 05/04/2016

Ref. 130000024323

Label content

Pictogram

:



Signal word

: Warning

Hazardous warnings

: Contains gas under pressure; may explode if heated.

Hazardous prevention
measures

: Protect from sunlight. Store in a well-ventilated place.

Other hazards

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing., Rapid evaporation of the liquid may cause frostbite., Misuse or intentional inhalation abuse may cause death without warning symptoms, due to cardiac effects., May cause cardiac arrhythmia.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Chlorodifluoromethane (HCFC-22)	75-45-6	100 %



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Ref. 130000024323

SECTION 4. FIRST AID MEASURES

General advice	: Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.
Inhalation	: Remove from exposure, lie down. Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Call a physician.
Skin contact	: Take off all contaminated clothing immediately. Flush area with lukewarm water. Do not use hot water. If frostbite has occurred, call a physician.
Eye contact	: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.
Ingestion	: Is not considered a potential route of exposure.
Most important symptoms/effects, acute and delayed	: No applicable data available.
Protection of first-aiders	: If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Notes to physician	: Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: As appropriate for combustibles in area. Extinguishant for other burning material in area is sufficient to stop burning.
Unsuitable extinguishing media	: No applicable data available.

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- Specific hazards** : Cylinders are equipped with pressure and temperature relief devices, but may still rupture under fire conditions. Decomposition may occur. Contact of welding or soldering torch flame with high concentrations of refrigerant can result in visible changes in the size and colour of the torch flame. This flame effect will only occur in concentrations of product well above the recommended exposure limit. Therefore stop all work and ventilate to disperse refrigerant vapors from the work area before using any open flames. This substance is not flammable in air at temperatures up to 100 deg. C (212 deg. F) at atmospheric pressure. However, mixtures of this substance with high concentrations of air at elevated pressure and/or temperature can become combustible in the presence of an ignition source. This substance can also become combustible in an oxygen enriched environment (oxygen concentrations greater than that in air). Whether a mixture containing this substance and air, or this substance in an oxygen enriched atmosphere become combustible depends on the inter-relationship of 1) the temperature 2) the pressure, and 3) the proportion of oxygen in the mixture. In general, this substance should not be allowed to exist with air above atmospheric pressure or at high temperatures; or in an oxygen enriched environment. For example this substance should NOT be mixed with air under pressure for leak testing or other purposes. Experimental data have also been reported which indicate combustibility of this substance in the presence of certain concentrations of chlorine.
- Special protective equipment for firefighters** : In the event of fire, wear self-contained breathing apparatus. Wear neoprene gloves during cleaning up work after a fire.
- Further information** : Self-contained breathing apparatus (SCBA) is required if containers rupture and contents are released under fire conditions.
Cool containers/tanks with water spray. Water runoff should be contained and neutralized prior to release.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.



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- | | |
|-----------------------------|--|
| Safeguards (Personnel) | : Evacuate personnel to safe areas. Ventilate the area. Refer to protective measures listed in sections 7 and 8. |
| Environmental precautions | : Should not be released into the environment. |
| Spill Cleanup | : Evaporates.
Ventilate area using forced ventilation, especially low or enclosed places where heavy vapors might collect. |
| Accidental Release Measures | : Ventilate area, especially low or enclosed places where heavy vapours might collect. Avoid open flames and high temperatures. Self-contained breathing apparatus (SCBA) is required if a large release occurs. |

SECTION 7. HANDLING AND STORAGE

- | | |
|-----------------------------|---|
| Handling (Personnel) | : Avoid breathing vapours or mist. Avoid contact with skin, eyes and clothing. Provide sufficient air exchange and/or exhaust in work rooms. For personal protection see section 8.
The product should not be mixed with air for leak testing or used with air for any other purpose above atmospheric pressure. Contact with chlorine or other strong oxidizing agents should also be avoided.
Handle in accordance with good industrial hygiene and safety practice. |
| Handling (Physical Aspects) | : No special protective measures against fire required. |
| Dust explosion class | : No applicable data available. |
| Storage | : Valve protection caps and valve outlet threaded plugs must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (<3000 psig) piping or systems. Never attempt to lift cylinder by its cap. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over.
Separate full containers from empty containers. Keep at temperature not exceeding 52°C. Do not store near combustible materials. Avoid area where salt or other corrosive materials are present.
The product has an indefinite shelf life when stored properly. |



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Storage period : > 10 yr

Storage temperature : < 52 °C (< 126 °F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : Ensure adequate ventilation, especially in confined areas. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low or enclosed places.

Personal protective equipment
Respiratory protection : Under normal manufacturing conditions, no respiratory protection is required when using this product. For rescue and maintenance work in storage tanks use self-contained breathing apparatus.

Hand protection : Additional protection: Impervious gloves

Hand protection : Additional protection: Protective gloves complying with EN 374., or, US OSHA guidelines

Eye protection : Safety glasses with side-shields Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.

Protective measures : Self-contained breathing apparatus (SCBA) is required if a large release occurs.

Exposure Guidelines Exposure Limit Values

Chlorodifluoromethane			
TLV	(ACGIH)	1,000 ppm	TWA

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state : gaseous
Form : Liquefied gas
Color : clear

Odor : slight, ether-like

Odor threshold : No applicable data available.

pH : neutral

Melting point/range : No applicable data available.

Boiling point/boiling range : Boiling point
-40.8 °C (-41.4 °F) at 1,013 hPa

Flash point : does not flash

Evaporation rate : > 1
(CCL4=1.0)

Flammability (solid, gas) : No applicable data available.

Upper explosion limit : Method: None per ASTM E681

Lower explosion limit : Method: None per ASTM E681

Vapor pressure : 10,439.0 hPa at 25 °C (77 °F)

Vapor density : 3.0 at 25°C (77°F) and 1013 hPa (Air=1.0)

Density : 1.191 g/cm³ at 25 °C (77 °F)
(as liquid)

Specific gravity (Relative density) : 1.19 at 25 °C (77 °F)



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Water solubility	: 2.6 g/l at 25 °C (77 °F)
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: No applicable data available.
Auto-ignition temperature	: No applicable data available.
Decomposition temperature	: 632 °C
Viscosity, kinematic	: No applicable data available.
Viscosity, dynamic	: No applicable data available.
% Volatile	: 100 %

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Decomposes on heating.
Chemical stability	: Stable at normal temperatures and storage conditions.
Possibility of hazardous reactions	: Polymerization will not occur. Other burning materials may cause HCFC 22 to burn weakly. Chlorodifluoromethane is not flammable at ambient temperatures and atmospheric pressure. However, chlorodifluoromethane has been shown in tests to be combustible at pressures as low as 60 psig at ambient temperature when mixed with air at concentrations of 65 volume % air. Experimental data have also been reported which indicate combustibility of HCFC 22 in the presence of certain concentrations of chlorine.
Conditions to avoid	: The product is not flammable in air under ambient conditions of temperature and pressure. When pressurised with air or oxygen, the mixture may become flammable. Certain mixtures of HCFCs or HFCs with chlorine may become flammable or reactive under certain conditions. Avoid open flames and high temperatures.
Incompatible materials	: Alkali metals Alkaline earth metals, Powdered metals, Powdered metal salts



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Hazardous decomposition products : Decomposition products are hazardous., This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrochloric and hydrofluoric acids, and possibly carbonyl halides., These materials are toxic and irritating., Avoid contact with decomposition products

SECTION 11. TOXICOLOGICAL INFORMATION

Chlorodifluoromethane (HCFC-22)

- | | | |
|--|---|---|
| Inhalation 4 h LC50 | : | > 150000 ppm , Mouse |
| Inhalation Low Observed Adverse Effect Concentration (LOAEC) | : | 50000 ppm , Dog
Cardiac sensitization |
| Inhalation No Observed Adverse Effect Concentration | : | 25000 ppm , Dog
Cardiac sensitization |
| Skin irritation | : | Not expected to cause skin irritation based on expert review of the properties of the substance. |
| Eye irritation | : | Not expected to cause eye irritation based on expert review of the properties of the substance. |
| Skin sensitization | : | Not expected to cause sensitization based on expert review of the properties of the substance. |
| Repeated dose toxicity | : | Inhalation
Mouse
-
gas
No toxicologically significant effects were found. |
| Carcinogenicity | : | Not classifiable as a human carcinogen.
Overall weight of evidence indicates that the substance is not carcinogenic. |
| Mutagenicity | : | Animal testing did not show any mutagenic effects.
Experiments showed mutagenic effects in cultured bacterial cells. |
| Reproductive toxicity | : | No toxicity to reproduction |



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Teratogenicity : Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

Chlorodifluoromethane (HCFC-22)

96 h LC50 : Zebra fish 777 mg/l
96 h EC50 : Algae 250 mg/l
48 h EC50 : Daphnia magna (Water flea) 433 mg/l

Environmental Fate

Chlorodifluoromethane (HCFC-22)

Biodegradability : According to the results of tests of biodegradability this product is not readily biodegradable.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product : Can be used after re-conditioning. Recover, reclaim by distillation, or remove to a permitted waste disposal facility. Comply with applicable Federal, State/Provincial and Local Regulations.

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Contaminated packaging : Empty pressure vessels should be returned to the supplier.

SECTION 14. TRANSPORT INFORMATION

DOT	UN number	: 1018
	Proper shipping name	: Chlorodifluoromethane
	Class	: 2.2
IATA_C	Labelling No.	: 2.2
	UN number	: 1018
	Proper shipping name	: Chlorodifluoromethane
IMDG	Class	: 2.2
	Labelling No.	: 2.2
	UN number	: 1018
	Proper shipping name	: CHLORODIFLUOROMETHANE
	Class	: 2.2
	Labelling No.	: 2.2

SECTION 15. REGULATORY INFORMATION

TSCA : On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION

Freon™ and any associated logos are trademarks or copyrights of The Chemours Company FC, LLC.
Chemours™ and the Chemours Logo are trademarks of The Chemours Company.
Before use read Chemours safety information. For further information contact the local Chemours office or nominated distributors.



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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Significant change from previous version is denoted with a double bar.



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This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Used Refrigerants and Refrigerant Blends
Tradename/Synonym	:	USED REFRIGERANT R-22
		USED REFRIGERANT R-134a
		USED REFRIGERANT R-125
		USED REFRIGERANT R-32
		USED REFRIGERANT R-124
		USED REFRIGERANT R-12
		USED REFRIGERANT R-13
		USED REFRIGERANT R-14
		USED REFRIGERANT R-11
		USED REFRIGERANT R-23
		USED REFRIGERANT R-113
		USED REFRIGERANT R-114
		USED REFRIGERANT R-116
		USED REFRIGERANT R-123
		USED REFRIGERANT R-401A
		USED REFRIGERANT R-401B
		USED REFRIGERANT R-401C
		USED REFRIGERANT R-402A
		USED REFRIGERANT R-402B
		USED REFRIGERANT R-404A
		USED REFRIGERANT R-407A
		USED REFRIGERANT R-407C
		USED REFRIGERANT R-408A
		USED REFRIGERANT R-409A
		USED REFRIGERANT R-410A
		USED REFRIGERANT R-417A
		USED REFRIGERANT R-422A
		USED REFRIGERANT R-422D
		USED REFRIGERANT R-423A
		USED REFRIGERANT R-437A
		USED REFRIGERANT R-438A
		USED REFRIGERANT R-449A
		USED REFRIGERANT R-452A



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USED REFRIGERANT R-500
 USED REFRIGERANT R-503
 USED REFRIGERANT R-502
 USED REFRIGERANT R-507
 USED REFRIGERANT R-508B
 USED REFRIGERANT R-513A
 USED REFRIGERANT R-236fa
 USED REFRIGERANT R-1234yf
 USED REFRIGERANT R-514A

Restrictions on use : Do not use product for anything outside of the above specified uses
 Manufacturer/Supplier : The Chemours Company FC, LLC
 1007 Market Street
 Wilmington, DE 19899
 United States of America

Product Information : 1-844-773-CHEM (outside the U.S. 1-302-773-1000)
 Medical Emergency : 1-866-595-1473 (outside the U.S. 1-302-773-2000)
 Transport Emergency : CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

Other information : The above components represent Chemours Refrigerant and Refrigerant Blends that are returned for reclamation. Any (and/or all) components may be contained in the material returned. The information is representative for any and all components.
 This specification for used refrigerant returned for reclamation is a maximum of 30% TOTAL lubricating oil content. Most used refrigerant contains significantly less.

SECTION 2. HAZARDS IDENTIFICATION

Product hazard category

Gases under pressure
 Gases under pressure

Compressed gas
 Liquefied gas
 Category 2A



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Label content

Pictogram

:



Signal word

: Warning

Hazardous warnings

: Contains gas under pressure; may explode if heated.
May cause respiratory irritation.
May cause drowsiness or dizziness.



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Hazardous prevention measures

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Avoid release to the environment.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
IF exposed or concerned: Get medical advice/ attention.
IF exposed or if you feel unwell: Call a POISON CENTER or doctor/ physician.
Specific treatment (see supplemental first aid instructions on this label).
Rinse mouth.
If skin irritation occurs: Get medical advice/ attention.
If eye irritation persists: Get medical advice/ attention.
Take off contaminated clothing and wash it before reuse.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Protect from sunlight. Store in a well-ventilated place.
Dispose of contents/ container to an approved waste disposal plant.

Other hazards

Misuse or intentional inhalation abuse may cause death without warning symptoms, due to cardiac effects., May cause cardiac arrhythmia., Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing., Rapid evaporation of the liquid may cause frostbite., Lubricants can cause skin irritation.

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Chlorodifluoromethane (HCFC-22)	75-45-6	0 - 100 %
1,1,1,2-Tetrafluoroethane (HFC-134a)	811-97-2	0 - 100 %
Pentafluoroethane (HFC-125)	354-33-6	0 - 70 %
Difluoromethane (HFC-32)	75-10-5	0 - 50 %
2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124)	2837-89-0	0 - 100 %
Trifluoromethane (HFC-23)	75-46-7	0 - 100 %
2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)	306-83-2	0 - 100 %
1-Chloro-1,1-difluoroethane (HCFC-142b)	75-68-3	0 - 100 %
1,1,1,3,3,3-Hexafluoropropane (HFC-236fa)	690-39-1	0 - 100 %
2,3,3,3-Tetrafluoropropene (HFO-1234yf)	754-12-1	0 - 56 %
1,1,1-Trifluoroethane (HFC-143a)	420-46-2	0 - 55 %

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1,1,1,2,3,3,3-Heptafluoropropane (HFC-227ea)	431-89-0	0 - 50 %
1,1-Difluoroethane (HFC-152a)	75-37-6	0 - 30 %
Perfluoropropane (FC-218)	76-19-7	0 - 10 %
Trichlorofluoromethane (CFC-11)	75-69-4	0 - 60 %
Dichlorodifluoromethane (CFC-12)	75-71-8	0 - 60 %
Chlorotrifluoromethane (CFC-13)	75-72-9	0 - 60 %
Carbon Tetrafluoride(FC-14)	75-73-0	0 - 60 %
1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)	76-13-1	0 - 60 %
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC-114)	76-14-2	0 - 60 %
Chloropentafluoroethane (CFC-115)	76-15-3	0 - 60 %
Perfluoroethane (FC-116)	76-16-4	0 - 60 %
Propane(HC-290)	74-98-6	0 - 6 %
n-Butane (HC-600)	106-97-8	0 - 5 %

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Pentane(HC-601)	109-66-0	0 - 1 %
Isobutane (HC-600a)	75-28-5	0 - 5 %
2-Methylbutane (HC-601a)	78-78-4	0 - 1 %
Alkylated Benzene	68648-86-2	0 - 30 %
Polypropylene Glycol, monobutyl ether	9003-13-8	0 - 30 %
Polyalkylene Glycol, monobutyl ether	9038-95-3	0 - 30 %
Distillates (Petroleum), clay treated heavy naphthenic; base oil unspecified	64742-44-5	0 - 30 %
Distillates (Petroleum), Solvent-Refined Heavy Paraffinic	64741-88-4	0 - 30 %
Pentaerythritol esters of heptanoic and isononionic acids	118685-29-3	0 - 30 %
Unspecified impurities		0 - 3 %

SECTION 4. FIRST AID MEASURES

General advice : When symptoms persist or in all cases of doubt seek medical advice.



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Inhalation	: Remove from exposure, lie down. Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Consult a physician.
Skin contact	: Flush area with lukewarm water. Do not use hot water. If frostbite has occurred, call a physician.
Eye contact	: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Consult a physician if necessary.
Ingestion	: Do not induce vomiting. If conscious, give 2 glasses of water. Get immediate medical attention. Never give anything by mouth to an unconscious person.
Most important symptoms/effects, acute and delayed	: Anaesthetic effects Light-headedness irregular heartbeat with a strange sensation in the chest, heart thumping, apprehension, feeling of fainting, dizziness or weakness
Protection of first-aiders	: If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Notes to physician	: Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: As appropriate for combustibles in area. Extinguishant for other burning material in area is sufficient to stop burning.
Unsuitable extinguishing media	: No applicable data available.
Specific hazards	: Drums may rupture under fire conditions. Cylinders are equipped with pressure and temperature relief devices, but may still rupture under fire conditions. Decomposition may occur.



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Special protective equipment for firefighters : No applicable data available.

Further information : Use water spray or fog to protect the fire fighters and to cool container. Self-contained breathing apparatus (SCBA) is required if containers rupture and contents are released under fire conditions.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel) : Ventilate spill area. Comply with Federal, State and Local regulations on reporting releases

Environmental precautions : Prevent material from entering sewers, waterways, or low areas.

Spill Cleanup : Dike spill. Collect on absorbent material and transfer to steel drums for recovery/disposal.

Accidental Release Measures : Self-contained breathing apparatus (SCBA) is required if a large release occurs.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel) : Avoid breathing vapours or mist. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Use sufficient ventilation to keep employee exposure below recommended limits.

Handling (Physical Aspects) : No applicable data available.
Dust explosion class : Not applicable

Storage : Keep containers tightly closed and in an upright position. Store in a clean, dry place. Keep away from direct sunlight. Do not expose recovery cylinders to temperature above 52°C (125°F). Do not expose drums to direct heat or

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temperature above 46°C (115°F) to avoid pressurizing and possibly distorting the drums.

The product has an indefinite shelf life when stored properly.

Storage period : > 10 yr

Storage temperature : < 52 °C (< 126 °F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : Normal ventilation for standard manufacturing procedures is generally adequate. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low or enclosed places.

Personal protective equipment

Respiratory protection : Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH approved respiratory protection.

Hand protection : Additional protection: Impervious gloves

Eye protection : Wear safety glasses with side shields. Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.

Exposure Guidelines**Exposure Limit Values****Dichlorodifluoromethane (CFC-12)**

Permissible exposure limit:	(OSHA)	1,000 ppm	4,950 mg/m ³	8 hr. TWA
TLV	(ACGIH)	1,000 ppm	TWA	

Trichlorofluoromethane (CFC-11)

Permissible exposure limit:	(OSHA)	1,000 ppm	5,600 mg/m ³	8 hr. TWA
TLV	(ACGIH)	1,000 ppm	TLV-C	

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1,1,1,2-Tetrafluoroethane (HFC-134a)

No applicable data available.

1-Chloro-1,1-difluoroethane (HCFC-142b)

No applicable data available.

2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)

No applicable data available.

Chlorotrifluoromethane (CFC-13)

No applicable data available.

Chlorodifluoromethane (HCFC-22)

TLV (ACGIH) 1,000 ppm TWA

2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124)

No applicable data available.

Trichlorotrifluoroethane (CFC-113A)

No applicable data available.

1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC-114)

Permissible (OSHA) 1,000 ppm 7,000 mg/m³ 8 hr. TWA

exposure limit:

TLV (ACGIH) 1,000 ppm TWA

Pentafluoroethane (HFC-125)

No applicable data available.

1,1,1-Trifluoroethane (HFC-143a)

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No applicable data available.

1,1,1,2,3,3,3-Heptafluoropropane (HFC-227ea)

No applicable data available.

1,1-Difluoroethane (HFC-152a)

No applicable data available.

Difluoromethane (HFC-32)

No applicable data available.

Perfluoropropane (FC-218)

No applicable data available.

Propane(HC-290)

Permissible
exposure limit:

(OSHA)

1,000 ppm

1,800 mg/m3

8 hr. TWA

Isobutane (HC-600a)

TLV

(ACGIH)

1,000 ppm

STEL

TLV

(ACGIH)

1,000 ppm

STEL

n-Butane (HC-600)

TLV

(ACGIH)

1,000 ppm

STEL

Pentane(HC-601)

Permissible
exposure limit:

(OSHA)

1,000 ppm

2,950 mg/m3

8 hr. TWA

TLV

(ACGIH)

1,000 ppm

TWA



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2-Methylbutane (HC-601a)
TLV (ACGIH) 1,000 ppm TWA

Carbon Tetrafluoride(FC-14)
No applicable data available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state : gaseous
Form : liquid, Compressed gas, Liquefied gas
Color : clear, colourless, light yellow

Odor : slight

Odor threshold : No applicable data available.

pH : No applicable data available.

Melting point/range : No applicable data available.

Boiling point/boiling range : No applicable data available.

Flash point : Pure refrigerants will not burn. However, the lubricating oil contaminants will burn and they may be at a high enough concentration that the mixture will burn.

Evaporation rate : No applicable data available.

Flammability (solid, gas) : No applicable data available.

Upper explosion limit : No applicable data available.



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Lower explosion limit	: No applicable data available.
Vapor pressure	: no data available
Vapour density	: No applicable data available.
Specific gravity (Relative density)	: no data available
Water solubility	: no data available
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: No applicable data available.
Auto-ignition temperature	: No applicable data available.
Decomposition temperature	: No applicable data available.
Viscosity, kinematic	: No applicable data available.
Viscosity, dynamic	: No applicable data available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No applicable data available.
Chemical stability	: Stable
Possibility of hazardous reactions	: Polymerization will not occur.
Conditions to avoid	: Avoid open flames and high temperatures.
Incompatible materials	: Alkali metals Alkaline earth metals, Powdered metals, Powdered metal salts, The Refined Mineral Oils are incompatible with strong oxidizers.
Hazardous decomposition products	: Decomposition products are hazardous., This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrochloric and hydrofluoric acids, and possibly carbonyl halides., Refined

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Mineral Oils, if present, can produce carbon monoxide and carbon dioxide upon combustion.

SECTION 11. TOXICOLOGICAL INFORMATION

Chlorodifluoromethane (HCFC-22)

Inhalation 4 h LC50	:	> 150000 ppm , Mouse
Inhalation Low Observed Adverse Effect Concentration (LOAEC)	:	50000 ppm , Dog Cardiac sensitization
Inhalation No Observed Adverse Effect Concentration	:	25000 ppm , Dog Cardiac sensitization
Skin irritation	:	Not expected to cause skin irritation based on expert review of the properties of the substance.
Eye irritation	:	Not expected to cause eye irritation based on expert review of the properties of the substance.
Skin sensitization	:	Not expected to cause sensitization based on expert review of the properties of the substance.
Repeated dose toxicity	:	Inhalation Mouse - gas No toxicologically significant effects were found.
Carcinogenicity	:	Not classifiable as a human carcinogen. Overall weight of evidence indicates that the substance is not carcinogenic.
Mutagenicity	:	Animal testing did not show any mutagenic effects. Experiments showed mutagenic effects in cultured bacterial cells.
Reproductive toxicity	:	No toxicity to reproduction
Teratogenicity	:	Animal testing showed effects on embryo-fetal development at levels

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equal to or above those causing maternal toxicity.

Further information : Cardiac sensitisation threshold limit : 175000 mg/m3

1,1,1,2-Tetrafluoroethane (HFC-134a)

Inhalation 4 h LC50 : > 567000 ppm , Rat

Inhalation No Observed
Adverse Effect : 40000 ppm , Dog
Cardiac sensitizationConcentration
Inhalation Low Observed
Adverse Effect : 80000 ppm , Dog
Cardiac sensitizationConcentration (LOAEC)
Skin irritation : No skin irritation, Rabbit

Eye irritation : No eye irritation, Rabbit

Skin sensitization : Does not cause skin sensitisation., Guinea pig

Does not cause respiratory sensitisation., Rat

Repeated dose toxicity : Inhalation
Rat
-
gas
NOAEL: 50000,
No toxicologically significant effects were found.Carcinogenicity : Not classifiable as a human carcinogen.
Overall weight of evidence indicates that the substance is not
carcinogenic.Mutagenicity : Animal testing did not show any mutagenic effects.
Tests on bacterial or mammalian cell cultures did not show mutagenic
effects.Reproductive toxicity : No toxicity to reproduction
No effects on or via lactation
Animal testing showed no reproductive toxicity.



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Teratogenicity : Animal testing showed no developmental toxicity.

Further information : Cardiac sensitisation threshold limit : 334000 mg/m3

Pentafluoroethane (HFC-125)

Inhalation 4 h LC50 : > 800000 ppm , Rat

Inhalation No Observed Adverse Effect Concentration : 75000 ppm , Dog
Cardiac sensitization

Inhalation Low Observed Adverse Effect Concentration (LOAEC) : 100000 ppm , Dog
Cardiac sensitization

Skin sensitization : Does not cause respiratory sensitisation., human

Repeated dose toxicity : Inhalation
Rat
-
gas
No toxicologically significant effects were found.

Carcinogenicity : Not classifiable as a human carcinogen.
Overall weight of evidence indicates that the substance is not carcinogenic.

Mutagenicity : Animal testing did not show any mutagenic effects.
Evidence suggests this substance does not cause genetic damage in cultured mammalian cells.
Did not cause genetic damage in cultured bacterial cells.

Reproductive toxicity : No toxicity to reproduction
Animal testing showed no reproductive toxicity.

Teratogenicity : Animal testing showed no developmental toxicity.

Further information : Cardiac sensitisation threshold limit : 490000 mg/m3

Difluoromethane (HFC-32)

Inhalation 4 h LC50 : > 520000 ppm , Rat

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Inhalation Low Observed Adverse Effect Concentration (LOAEC)	:	> 350000 ppm , Dog Cardiac sensitization
Inhalation No Observed Adverse Effect Concentration	:	350000 ppm , Dog Cardiac sensitization
Skin irritation	:	No skin irritation, Not tested on animals Not expected to cause skin irritation based on expert review of the properties of the substance.
Eye irritation	:	No eye irritation, Not tested on animals Not expected to cause eye irritation based on expert review of the properties of the substance.
Skin sensitization	:	Does not cause skin sensitisation., Not tested on animals Not expected to cause sensitization based on expert review of the properties of the substance. There are no reports of human respiratory sensitization.
Repeated dose toxicity	:	Inhalation Rat - No toxicologically significant effects were found.
Mutagenicity	:	Animal testing did not show any mutagenic effects. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Reproductive toxicity	:	No toxicity to reproduction Animal testing showed no reproductive toxicity. Information given is based on data obtained from similar substances.
Teratogenicity	:	Animal testing showed no developmental toxicity.
Further information	:	Cardiac sensitisation threshold limit : > 735000 mg/m3

2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124)

Inhalation 4 h LC50	:	> 230000 ppm , Rat Anaesthetic effects
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Central nervous system effects

Inhalation Low Observed Adverse Effect Concentration (LOAEC)	:	25000 ppm , Dog Cardiac sensitization
Inhalation No Observed Adverse Effect Concentration	:	10000 ppm , Dog Cardiac sensitization
Skin irritation	:	Not expected to cause skin irritation based on expert review of the properties of the substance.
Eye irritation	:	Not expected to cause eye irritation based on expert review of the properties of the substance.
Skin sensitization	:	Not expected to cause sensitization based on expert review of the properties of the substance.
		Does not cause respiratory sensitisation., There are no reports of human respiratory sensitization.
Repeated dose toxicity	:	Inhalation multiple species - No toxicologically significant effects were found.
Carcinogenicity	:	Not classifiable as a human carcinogen.
Mutagenicity	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Animal testing did not show any mutagenic effects.
Teratogenicity	:	Animal testing showed no developmental toxicity.
Further information	:	Cardiac sensitisation threshold limit : 140000 mg/m3

Trifluoromethane (HFC-23)

Inhalation 4 h LC50	:	> 663000 ppm , Rat
Inhalation Low Observed Adverse Effect	:	> 500000 ppm , Dog Cardiac sensitization

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Concentration (LOAEC)	
Inhalation No Observed Adverse Effect Concentration	: 500000 ppm , Dog Cardiac sensitization
Repeated dose toxicity	: Inhalation Rat - NOAEL: 28.634 mg/l No toxicologically significant effects were found.
Mutagenicity	: Animal testing did not show any mutagenic effects. Evidence suggests this substance does not cause genetic damage in animals.
Reproductive toxicity	: No toxicity to reproduction Evidence suggests the substance is not a reproductive toxin in animals.
Teratogenicity	: Animal testing showed no developmental toxicity.
Further information	: Cardiac sensitisation threshold limit : > 172414 mg/m3

2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)

Inhalation	:	Target Organs: Central nervous systemCentral nervous system effects
Inhalation Low Observed Adverse Effect Concentration (LOAEC)	:	20000 ppm , Dog Cardiac sensitization
Inhalation No Observed Adverse Effect Concentration	:	10000 ppm , Dog Cardiac sensitization
Dermal LD50	:	> 2,000 mg/kg , Rabbit
Dermal LD50	:	> 2,000 mg/kg , Rat
Oral LD50	:	9,000 mg/kg , Rat Respiratory effects Abnormal posture

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Skin irritation	: No skin irritation, Rabbit Not expected to cause skin irritation based on expert review of the properties of the substance.
Eye irritation	: No eye irritation, Rabbit Not expected to cause eye irritation based on expert review of the properties of the substance.
Skin sensitization	: Does not cause skin sensitisation., Guinea pig Did not cause sensitisation on laboratory animals. Not expected to cause sensitization based on expert review of the properties of the substance. Does not cause respiratory sensitisation., multiple species
Repeated dose toxicity	: Inhalation Rat - vapour No toxicological effects warranting significant target organ toxicity classification were seen below the recommended guidance values for classification.
Carcinogenicity	: Not classifiable as a human carcinogen. The observed tumors do not appear to be relevant for men.
Mutagenicity	: Animal testing did not show any mutagenic effects. Did not cause genetic damage in cultured bacterial cells.
Reproductive toxicity	: No toxicity to reproduction Animal testing showed no reproductive toxicity. No effects on or via lactation
Teratogenicity	: Animal testing showed no developmental toxicity.
Further information	: Cardiac sensitisation threshold limit : 124000 mg/m3
1-Chloro-1,1-difluoroethane (HCFC-142b) Inhalation 4 h LC50	: > 400000 ppm , Rat Target Organs: Central nervous system



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narcosis
Lethargy
Laboured breathing
lung effects
Kidney effects

Inhalation Low Observed Adverse Effect Concentration (LOAEC) : 50000 ppm , Dog
Cardiac sensitization

Inhalation No Observed Adverse Effect Concentration : 25000 ppm , Dog
Cardiac sensitization

Repeated dose toxicity : Inhalation
multiple species
-
No toxicologically significant effects were found.

Carcinogenicity : Not classifiable as a human carcinogen.

Mutagenicity : Animal testing did not show any mutagenic effects.
Genetic damage in cultured mammalian cells was observed in some laboratory tests but not in others.
Genetic damage in cultured bacterial cells was observed in some laboratory tests but not in others.

Teratogenicity : Animal testing showed no developmental toxicity.

Further information : Cardiac sensitisation threshold limit : 205000 mg/m3

1,1,1,3,3,3-Hexafluoropropane (HFC-236fa)

Inhalation 4 h LC50 : > 457000 ppm , Rat

Inhalation 4 h LC50 : > 189000 ppm , Rat
Target Organs: Central nervous system
Narcotic effects
Central nervous system effects

Inhalation Low Observed Adverse Effect Concentration (LOAEC) : 150000 ppm , Dog
Cardiac sensitization

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Inhalation No Observed Adverse Effect Concentration	:	100000 ppm , Dog Cardiac sensitization
Skin irritation	:	No skin irritation, Not tested on animals Not expected to cause skin irritation based on expert review of the properties of the substance.
Eye irritation	:	No eye irritation, Not tested on animals Not expected to cause eye irritation based on expert review of the properties of the substance.
Skin sensitization	:	Does not cause skin sensitisation., Not tested on animals Not expected to cause sensitization based on expert review of the properties of the substance. There are no reports of human respiratory sensitization.
Repeated dose toxicity	:	Inhalation Rat - gas No toxicologically significant effects were found.
Mutagenicity	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Animal testing did not show any mutagenic effects.
Reproductive toxicity	:	No toxicity to reproduction Evidence suggests the substance is not a reproductive toxin in animals.
Teratogenicity	:	Animal testing showed no developmental toxicity.
Further information	:	Cardiac sensitisation threshold limit : 932751 mg/m3

2,3,3,3-Tetrafluoropropene (HFO-1234yf)

Inhalation 4 h LC50	:	> 405000 ppm , Rat
Inhalation Low Observed Adverse Effect	:	> 120000 ppm , Dog Cardiac sensitization



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Concentration (LOAEC)	
Inhalation No Observed Adverse Effect Concentration	: 120000 ppm , Dog Cardiac sensitization
Skin irritation	: No skin irritation, Not tested on animals Not expected to cause skin irritation based on expert review of the properties of the substance.
Eye irritation	: No eye irritation, Not tested on animals Not expected to cause eye irritation based on expert review of the properties of the substance.
Skin sensitization	: Not tested on animals Not expected to cause sensitization based on expert review of the properties of the substance. There are no reports of human respiratory sensitization.
Repeated dose toxicity	: Inhalation Rat - gas NOAEL: 233 mg/l, 50,000 ppm, No toxicologically significant effects were found. Inhalation Rabbit - gas NOAEL: 2.33 mg/l, 500 ppm, No toxicological effects warranting significant target organ toxicity classification were seen below the recommended guidance values for classification. Inhalation Mini-pig - gas NOAEL: 50 mg/l, 10,000 ppm, No toxicologically significant effects were found.

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Carcinogenicity	: Not classifiable as a human carcinogen. Sufficient data are available to conclude that the substance is not expected to be carcinogenic.
Mutagenicity	: Animal testing did not show any mutagenic effects. Did not cause genetic damage in cultured mammalian cells. Experiments showed mutagenic effects in cultured bacterial cells.
Reproductive toxicity	: No toxicity to reproduction Animal testing showed no reproductive toxicity.
Teratogenicity	: Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.
Further information	: Cardiac sensitisation threshold limit : > 559509 mg/m3
1,1,1-Trifluoroethane (HFC-143a)	
Inhalation 4 h LC50	: > 591000 ppm , Rat
Inhalation No Observed Adverse Effect Concentration	: 250000 ppm , Dog Cardiac sensitization
Inhalation Low Observed Adverse Effect Concentration (LOAEC)	: 300000 ppm , Dog Cardiac sensitization
Skin sensitization	: Does not cause respiratory sensitisation., human
Repeated dose toxicity	: Inhalation Rat - gas NOAEL: > 40000, Method: OECD Test Guideline 413 No toxicologically significant effects were found.
Carcinogenicity	: Not classifiable as a human carcinogen. Animal testing did not show any carcinogenic effects.
Mutagenicity	: Animal testing did not show any mutagenic effects. Tests on bacterial or mammalian cell cultures did not show mutagenic

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effects.

- Reproductive toxicity : No toxicity to reproduction
No effects on or via lactation
Animal testing showed no reproductive toxicity.
- Teratogenicity : Animal testing showed no developmental toxicity.
- Further information : Cardiac sensitisation threshold limit : 862068.97 mg/m3

1,1,1,2,3,3,3-Heptafluoropropane (HFC-227ea)

- Inhalation 4 h LC50 : > 788696 ppm , Rat
Central nervous system effects
Respiratory effects
- Inhalation No Observed Adverse Effect Concentration : 90000 ppm , Dog
Cardiac sensitization
- Inhalation Low Observed Adverse Effect Concentration (LOAEC) : 105000 ppm , Dog
Cardiac sensitization
- Skin sensitization : Does not cause respiratory sensitisation., human
- Repeated dose toxicity : Inhalation
Rat
-
gas
NOAEL: 731.69 mg/l
No toxicologically significant effects were found.
- Carcinogenicity : Not classifiable as a human carcinogen.
Animal testing did not show any carcinogenic effects.
- Mutagenicity : Animal testing did not show any mutagenic effects.
Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
- Reproductive toxicity : No toxicity to reproduction
Animal testing showed no reproductive toxicity.



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Teratogenicity : Animal testing showed no developmental toxicity.

Further information : Cardiac sensitisation threshold limit : 730190 mg/m3

1,1-Difluoroethane (HFC-152a)

Inhalation 4 h LC50 : > 437500 ppm , Rat

Inhalation No Observed Adverse Effect Concentration : 50000 ppm , Dog
Cardiac sensitization

Inhalation Low Observed Adverse Effect Concentration (LOAEC) : 150000 ppm , Dog
Cardiac sensitization

Skin sensitization : Does not cause respiratory sensitisation., Rat

Repeated dose toxicity : Inhalation
Rat
-
NOAEL: 67.485 mg/l
No toxicologically significant effects were found.

Carcinogenicity : Not classifiable as a human carcinogen.
Animal testing did not show any carcinogenic effects.

Mutagenicity : Animal testing did not show any mutagenic effects.
Did not cause genetic damage in cultured bacterial cells.
Tests on mammalian cell cultures showed mutagenic effects.

Reproductive toxicity : No toxicity to reproduction
Animal testing showed no reproductive toxicity.

Teratogenicity : Animal testing showed no developmental toxicity.

Further information : Cardiac sensitisation threshold limit : 405000 mg/m3

Perfluoropropane (FC-218)

Inhalation 4 h LC50 : 400000 ppm , Rat

Inhalation No Observed Adverse Effect : 300000 ppm , Dog
Cardiac sensitization

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Concentration
Inhalation Low Observed
Adverse Effect : 400000 ppm , Dog
Cardiac sensitization
Concentration (LOAEC)
Mutagenicity : Animal testing did not show any mutagenic effects.
Did not cause genetic damage in cultured bacterial cells.

Further information : Cardiac sensitisation threshold limit : 3080000 mg/m3

Trichlorofluoromethane (CFC-11)

Inhalation 4 h LC50 : > 65680 ppm , Rat

Inhalation Low Observed
Adverse Effect : Dog
Cardiac sensitization

Concentration (LOAEC)
Inhalation No observed
adverse effect level : Dog
Cardiac sensitization

Dermal LD50 : > 9,300 mg/kg , Rabbit

Oral LD50 : > 11,000 mg/kg , Rat

Repeated dose toxicity : Ingestion
multiple species
- 90 d
NOAEL: > 450 mg/kg
No toxicologically significant effects were found.

Inhalation
multiple species
- 28 d
No toxicologically significant effects were found.

Carcinogenicity : Not classifiable as a human carcinogen.
Overall weight of evidence indicates that the substance is not
carcinogenic.

Mutagenicity : Animal testing did not show any mutagenic effects.
Tests on bacterial or mammalian cell cultures did not show mutagenic
effects.

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Dichlorodifluoromethane (CFC-12)

Inhalation 4 h LC50	:	1200000 ppm , Rat Central nervous system effects
Inhalation No observed adverse effect level	:	25000 ppm , multiple species Cardiac sensitization
Dermal	:	no data available
Oral LD50	:	> 1,000 mg/kg , Rat
Skin irritation	:	No skin irritation, Guinea pig
Eye irritation	:	slight irritation, Rabbit
Repeated dose toxicity	:	Inhalation Rat - No toxicologically significant effects were found. Oral multiple species - No toxicologically significant effects were found.
Carcinogenicity	:	Not classifiable as a human carcinogen. Animal testing did not show any carcinogenic effects.
Mutagenicity	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Animal testing did not show any mutagenic effects.
Teratogenicity	:	Animal testing showed no developmental toxicity.

Chlorotrifluoromethane (CFC-13)

Inhalation 4 h LC50	:	> 425000 ppm , Rat narcosis
Inhalation	:	Dog



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Cardiac sensitization

Dermal	:	Not applicable
Oral	:	Not applicable
Skin irritation	:	No skin irritation, Not tested on animals Not expected to cause skin irritation based on expert review of the properties of the substance.
Eye irritation	:	No eye irritation, Not tested on animals Not expected to cause eye irritation based on expert review of the properties of the substance.
Skin sensitization	:	Not tested on animals Not expected to cause sensitization based on expert review of the properties of the substance.
Repeated dose toxicity	:	Inhalation Rat - No toxicologically significant effects were found.
Mutagenicity	:	Did not cause genetic damage in cultured bacterial cells.
Further information	:	Cardiac sensitisation threshold limit : 3419222 mg/m3

Carbon Tetrafluoride(FC-14)
Inhalation : Target Organs: Central nervous systemCentral nervous system depression

1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)
Inhalation 4 h : 521 mg/l , Rat
Target Organs: Central nervous system
Central nervous system effects
Breathing difficulties
Tremors
Hyperactivity
Convulsions



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		altered hematology
Inhalation 4 h LC50	:	404 mg/l , Rat Target Organs: Central nervous system Central nervous system effects Liver effects Kidney effects lung effects Altered respiratory rate Anaesthetic effects Incoordination Convulsions
Inhalation	:	5000 ppm , Dog Cardiac sensitization
Dermal LD50	:	> 11,000 mg/kg , Rabbit
Oral LD50	:	43,000 mg/kg , Rat Liver effects Kidney effects lung effects Gastrointestinal effects Lethargy Altered respiratory rate Fluid retention in lungs (pulmonary oedema)
Skin irritation	:	slight irritation, Rabbit
Eye irritation	:	slight irritation, Rabbit
Skin sensitization	:	Did not cause sensitisation on laboratory animals., Guinea pig
Repeated dose toxicity	:	Dermal Rabbit - Skin irritation, Kidney damage, Liver damage Oral Rabbit



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-
Increased mortality or reduced survival

Inhalation
Rat

-
Weight loss, altered blood chemistry

Inhalation
Rat

-
No toxicologically significant effects were found.

Inhalation
Rat

-
lung effects

Inhalation
human

-
No toxicologically significant effects were found.

Carcinogenicity : Not classifiable as a human carcinogen.

Mutagenicity : Animal testing did not show any mutagenic effects.
Tests on mammalian cell cultures showed mutagenic effects.
Did not cause genetic damage in cultured bacterial cells.

Reproductive toxicity : No toxicity to reproduction
Animal testing showed no reproductive toxicity.

Teratogenicity : Animal testing showed no developmental toxicity.

Further information : Cardiac sensitisation threshold limit : 38300 mg/m3

1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC-114)

Inhalation 4 h ALC - : > 424000 ppm , Rat
Approximate Lethal Target Organs: Central nervous system
Concentration Central nervous system depression

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Inhalation	: Cardiac sensitization
Repeated dose toxicity	: Inhalation multiple species - No toxicologically significant effects were found. Oral multiple species - No toxicologically significant effects were found.
Carcinogenicity	: Not classifiable as a human carcinogen. Animal testing did not show any carcinogenic effects.
Mutagenicity	: Animal testing did not show any mutagenic effects. Did not cause genetic damage in cultured bacterial cells.
Reproductive toxicity	: No toxicity to reproduction Animal testing showed no reproductive toxicity.
Teratogenicity	: Animal testing showed no developmental toxicity.
Further information	: Cardiac sensitisation threshold limit : 175000 mg/m3
Chloropentafluoroethane (CFC-115)	
Inhalation 4 h LC50	: > 800000 ppm , Rat
Inhalation Low Observed Adverse Effect Concentration (LOAEC)	: 150000 ppm , Dog Cardiac sensitization
Repeated dose toxicity	: Inhalation multiple species - gas No toxicologically significant effects were found.
Mutagenicity	: Did not cause genetic damage in cultured bacterial cells.



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Further information : Cardiac sensitisation threshold limit : 947669 mg/m³

Further information : Cardiac sensitisation threshold limit : 1263803 mg/m³

Perfluoroethane (FC-116)

Inhalation 4 h LC₅₀ : > 500000 ppm , Rat

Inhalation No Observed Adverse Effect Concentration : 200000 ppm , Dog
Cardiac sensitization

Repeated dose toxicity : Inhalation
Rat
- Method: OECD Test Guideline 412
No toxicologically significant effects were found.

Mutagenicity : Animal testing did not show any mutagenic effects.
Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Reproductive toxicity : No toxicity to reproduction
Animal testing showed no reproductive toxicity.

Teratogenicity : Animal testing showed no developmental toxicity.

Further information : Cardiac sensitisation threshold limit : 1129943.5 mg/m³

Propane(HC-290)

Inhalation 4 h LC₅₀ : > 200000 ppm , Rat

Inhalation Low Observed Adverse Effect Concentration (LOAEC) : 100000 ppm , Dog
Cardiac sensitization

Inhalation No Observed Adverse Effect Concentration : 50000 ppm , Dog
Cardiac sensitization

Dermal : Not applicable

Oral : Not applicable

Skin irritation : Not applicable

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Eye irritation	: Not applicable
Skin sensitization	: Not applicable
Repeated dose toxicity	: Inhalation Rat - gas No toxicologically significant effects were found.
Mutagenicity	: Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Animal testing did not show any mutagenic effects.
Reproductive toxicity	: No toxicity to reproduction Animal testing showed no reproductive toxicity.
Teratogenicity	: Animal testing showed no developmental toxicity.
Further information	: Cardiac sensitisation threshold limit : 180369 mg/m3
n-Butane (HC-600)	
Inhalation 4 h LC50	: 277018 ppm , Rat Target Organs: Respiratory Tract, Central nervous system Irritating to respiratory system. Central nervous system depression narcosis
Dermal	: Not applicable
Oral	: Not applicable
Skin irritation	: No skin irritation, Not tested on animals Not expected to cause skin irritation based on expert review of the properties of the substance.
Eye irritation	: No eye irritation, Not tested on animals Not expected to cause eye irritation based on expert review of the properties of the substance.



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Skin sensitization : Not tested on animals
There are no reports of human skin sensitization. Not expected to cause sensitization based on expert review of the properties of the substance.

Repeated dose toxicity : Inhalation
multiple species
-
No toxicologically significant effects were found.

Mutagenicity : Animal testing did not show any mutagenic effects.

Pentane(HC-601)

Inhalation 4 h LC50 : 70000 ppm , Mouse
Irritating to respiratory system.
narcosis

Inhalation 4 h LC50 : > 20 mg/l , Rat

Dermal : Not applicable

Oral LD50 : > 2,000 mg/kg , Rat
Not applicable

Skin irritation : slight irritation, Rabbit

Eye irritation : No eye irritation, Rabbit

Skin sensitization : Animal test did not cause sensitization by skin contact., Guinea pig

Repeated dose toxicity : Oral
Rat
-
No toxicologically significant effects were found.

Inhalation
Rat
-
No toxicologically significant effects were found.



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Mutagenicity : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Animal testing did not show any mutagenic effects.

Reproductive toxicity : No toxicity to reproduction
Animal testing showed no reproductive toxicity.

Teratogenicity : Animal testing showed no developmental toxicity.

Isobutane (HC-600a)

Inhalation 4 h LC50 : 276808 ppm , Rat
The toxicological data has been taken from products of similar composition.

Inhalation 4 h LC50 : > 31 mg/l , Rat

Inhalation Low Observed Adverse Effect Concentration (LOAEC) : 50000 ppm , Dog
Cardiac sensitization

Inhalation No Observed Adverse Effect Concentration : 25000 ppm , Dog
Cardiac sensitization

Dermal : Not applicable

Oral : Not applicable

Skin irritation : No skin irritation, Not tested on animals
Not expected to cause skin irritation based on expert review of the properties of the substance.

Eye irritation : No eye irritation, Not tested on animals
Not expected to cause eye irritation based on expert review of the properties of the substance.

Skin sensitization : Not tested on animals
Not expected to cause sensitization based on expert review of the properties of the substance.

Repeated dose toxicity : Inhalation



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Rat

-

No toxicologically significant effects were found.

- | | | |
|-----------------------|---|---|
| Mutagenicity | : | Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Animal testing did not show any mutagenic effects. |
| Reproductive toxicity | : | No toxicity to reproduction
Animal testing showed no reproductive toxicity. |
| Teratogenicity | : | Animal testing showed no developmental toxicity. |
| Further information | : | Cardiac sensitisation threshold limit : 118.9 mg/m3 |

2-Methylbutane (HC-601a)

- | | | |
|------------------------|---|---|
| Inhalation 4 h LC50 | : | 1,281.9 mg/l , Rat
Target Organs: Central nervous system
Central nervous system depression
narcosis |
| Inhalation 4 h LC50 | : | 70000 ppm , Rat |
| Oral LD50 | : | > 2,000 mg/kg , Rat |
| Skin irritation | : | slight irritation, human |
| Eye irritation | : | No eye irritation, Rabbit |
| Skin sensitization | : | Did not cause sensitisation on laboratory animals., Guinea pig |
| Repeated dose toxicity | : | Inhalation
Rat
-
No toxicologically significant effects were found. |
| Mutagenicity | : | Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Animal testing did not show any mutagenic effects. |

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Reproductive toxicity : No toxicity to reproduction
Animal testing showed no reproductive toxicity.

Teratogenicity : Animal testing showed no developmental toxicity.

Alkylated Benzene

Dermal LD50 : > 2,000 mg/kg , Rat

Oral LD50 : > 5,000 mg/kg , Rat

Skin irritation : No skin irritation, Rabbit
slight irritation

Eye irritation : No eye irritation, Rabbit
slight irritation

Skin sensitization : Patch test on human volunteers did not demonstrate sensitisation
properties., human

Repeated dose toxicity : Inhalation
Rat
-
No toxicologically significant effects were found.

Dermal
Mouse
-
No toxicologically significant effects were found.

Carcinogenicity : Not classifiable as a human carcinogen.
Animal testing did not show any carcinogenic effects.

Mutagenicity : Animal testing did not show any mutagenic effects.
Tests on bacterial or mammalian cell cultures did not show mutagenic
effects.

Reproductive toxicity : No toxicity to reproduction
Animal testing showed no reproductive toxicity.

Teratogenicity : Animal testing showed effects on embryo-fetal development at levels

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equal to or above those causing maternal toxicity.

Polypropylene Glycol, monobutyl ether

Inhalation 4 h LC50	:	> 100 mg/l , Rat
Dermal LD50	:	> 2,000 mg/kg , Rat
Oral LD50	:	300 - 2,000 mg/kg , Rat
Skin irritation	:	Skin irritation, Rabbit
Eye irritation	:	Eye irritation, Rabbit
Skin sensitization	:	Does not cause skin sensitisation., human Patch test on human volunteers did not demonstrate sensitisation properties.
Repeated dose toxicity	:	Oral Rat - No toxicologically significant effects were found. Inhalation Rat - No toxicologically significant effects were found.
Carcinogenicity	:	Not classifiable as a human carcinogen. Animal testing did not show any carcinogenic effects.
Mutagenicity	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Evidence suggests this substance does not cause genetic damage in animals.
Reproductive toxicity	:	No toxicity to reproduction No effects on or via lactation Animal testing showed no reproductive toxicity.
Teratogenicity	:	Animal testing showed no developmental toxicity.

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Polyalkylene Glycol, monobutyl ether

Dermal LD50	:	> 2,000 mg/kg , Rabbit
Oral LD50	:	> 5,000 mg/kg , Rat
Skin irritation	:	No skin irritation, Rabbit slight irritation
Eye irritation	:	No eye irritation, Rabbit
Skin sensitization	:	Does not cause skin sensitisation., human Patch test on human volunteers did not demonstrate sensitisation properties.
Repeated dose toxicity	:	Oral Rat - No adverse effect has been observed in chronic toxicity tests. Inhalation Rat - lung effects, Reversible
Carcinogenicity	:	Not classifiable as a human carcinogen. Animal testing did not show any carcinogenic effects.

Distillates (Petroleum), clay treated heavy naphthenic; base oil unspecified

Inhalation 4 h LC50	:	> 5.53 mg/l , Rat
Dermal LD50	:	> 2,000 mg/kg , Rat
Oral LD50	:	> 5,000 mg/kg , Rat
Skin irritation	:	No skin irritation, Rabbit slight irritation
Eye irritation	:	No eye irritation, Rabbit slight irritation



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Skin sensitization	:	Does not cause skin sensitisation., animals (unspecified species)
Repeated dose toxicity	:	Dermal Rat - No toxicologically significant effects were found. Inhalation Rat - No toxicologically significant effects were found.
Carcinogenicity	:	Not classifiable as a human carcinogen. Animal testing did not show any carcinogenic effects.
Mutagenicity	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Evidence suggests this substance does not cause genetic damage in animals.
Reproductive toxicity	:	No toxicity to reproduction Animal testing showed no reproductive toxicity.
Teratogenicity	:	Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

Distillates (Petroleum), Solvent-Refined Heavy Paraffinic

Inhalation 4 h LC50	:	> 5.0 mg/l , Rat The toxicological data has been taken from products of similar composition.
Dermal LD50	:	> 5,000 mg/kg , Rabbit The toxicological data has been taken from products of similar composition.
Oral LD50	:	> 5,000 mg/kg , Rat The toxicological data has been taken from products of similar composition.



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Skin irritation	: No skin irritation, Rabbit The toxicological data has been taken from products of similar composition.
Eye irritation	: No eye irritation, Rabbit The toxicological data has been taken from products of similar composition.
Skin sensitization	: Did not cause sensitisation on laboratory animals., Guinea pig The toxicological data has been taken from products of similar composition. Does not cause respiratory sensitisation., Not tested on animals The toxicological data has been taken from products of similar composition.
Repeated dose toxicity	: Inhalation Rat - No toxicologically significant effects were found., The toxicological data has been taken from products of similar composition. Dermal Rabbit - No toxicologically significant effects were found., The toxicological data has been taken from products of similar composition.
Carcinogenicity	: Not classifiable as a human carcinogen. Information given is based on data obtained from similar substances.
Mutagenicity	: Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Animal testing did not show any mutagenic effects. Information given is based on data obtained from similar substances.
Reproductive toxicity	: No toxicity to reproduction Animal testing showed no reproductive toxicity. The toxicological data has been taken from products of similar composition.

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Teratogenicity : Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.
Information given is based on data obtained from similar substances.

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION**Aquatic Toxicity****Chlorodifluoromethane (HCFC-22)**

96 h LC50 : Zebra fish 777 mg/l
96 h EC50 : Algae 250 mg/l
48 h EC50 : Daphnia magna (Water flea) 433 mg/l

1,1,1,2-Tetrafluoroethane (HFC-134a)

96 h LC50 : Oncorhynchus mykiss (rainbow trout) 450 mg/l
96 h ErC50 : Algae 142 mg/l
Information given is based on data obtained from similar substances.
72 h NOEC : Pseudokirchneriella subcapitata (green algae) 13.2 mg/l
Information given is based on data obtained from similar substances.
48 h EC50 : Daphnia magna (Water flea) 980 mg/l

Pentafluoroethane (HFC-125)

96 h LC50 : Oncorhynchus mykiss (rainbow trout) 450 mg/l



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Information given is based on data obtained from similar substances.

96 h ErC50	:	Algae 142 mg/l Information given is based on data obtained from similar substances.
72 h NOEC	:	Pseudokirchneriella subcapitata (green algae) 13.2 mg/l Information given is based on data obtained from similar substances.
48 h EC50	:	Daphnia magna (Water flea) 980 mg/l Information given is based on data obtained from similar substances.

Difluoromethane (HFC-32)

96 h LC50	:	Fish 1,507 mg/l
96 h EC50	:	Algae 142 mg/l
48 h EC50	:	Daphnia (water flea) 652 mg/l
30 d	:	NOEC Fish (unspecified species) 65.8 mg/l

Trifluoromethane (HFC-23)

96 h LC50	:	Pimephales promelas (fathead minnow) 633.26 mg/l
96 h EC50	:	Algae 154.54 mg/l
48 h EC50	:	Daphnia magna (Water flea) 323.05 mg/l

2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)

96 h LC50	:	Oncorhynchus mykiss (rainbow trout) 55.5 mg/l
96 h ErC50	:	Pseudokirchneriella subcapitata (green algae) 96.6 mg/l
96 h EbC50	:	Pseudokirchneriella subcapitata (green algae) 67.8 mg/l
48 h EC50	:	Daphnia magna (Water flea) 17.3 mg/l

1-Chloro-1,1-difluoroethane (HCFC-142b)

96 h LC50	:	Oncorhynchus mykiss (rainbow trout) 36 mg/l
48 h EC50	:	Daphnia magna (Water flea) > 190 mg/l

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1,1,1,3,3,3-Hexafluoropropane (HFC-236fa)

- 96 h LC50 : Zebra fish 292 mg/l
- 96 h ErC50 : Pseudokirchneriella subcapitata (microalgae) > 186 mg/l
- 48 h EC50 : Daphnia magna (Water flea) 299 mg/l

2,3,3,3-Tetrafluoropropene (HFO-1234yf)

- 96 h LC50 : Cyprinus carpio (Carp) > 197 mg/l
- 72 h NOEC : Algae > 100 mg/l
- 48 h EC50 : Daphnia magna (Water flea) > 100 mg/l

1,1,1-Trifluoroethane (HFC-143a)

- 96 h LC50 : Oncorhynchus mykiss (rainbow trout) > 40 mg/l OECD Test Guideline 203
- 96 h ErC50 : Pseudokirchneriella subcapitata (green algae) > 44 mg/l OECD Test Guideline 201
- 48 h EC50 : Daphnia magna (Water flea) 300 mg/l OECD Test Guideline 202

1,1,1,2,3,3,3-Heptafluoropropane (HFC-227ea)

- 96 h LC50 : Danio rerio (zebra fish) > 200 mg/l OECD Test Guideline 203
Information given is based on data obtained from similar substances.
- 72 h ErC50 : Pseudokirchneriella subcapitata (green algae) > 114 mg/l OECD Test Guideline 201
Information given is based on data obtained from similar substances.
- 72 h NOEC : Pseudokirchneriella subcapitata (green algae) 13.2 mg/l OECD Test Guideline 201
Information given is based on data obtained from similar substances.
- 48 h EC50 : Daphnia magna (Water flea) > 200 mg/l OECD Test Guideline 202
Information given is based on data obtained from similar substances.

1,1-Difluoroethane (HFC-152a)

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96 h LC50	:	Fish 295.78 mg/l
96 h EC50	:	Algae 47.76 mg/l
48 h EC50	:	Daphnia (water flea) 146.7 mg/l

Perfluoropropane (FC-218)

- : This product has no known ecotoxicological effects.
- : This product has no known ecotoxicological effects.
- : This product has no known ecotoxicological effects.
- : NOEC Fish (unspecified species)
Due to its physical properties, there is no potential for adverse effects.
- : NOEC Daphnia (water flea)
Due to its physical properties, there is no potential for adverse effects.

Trichlorofluoromethane (CFC-11)

96 h LC50	:	Oncorhynchus mykiss (rainbow trout) 190 mg/l
48 h EC50	:	Daphnia magna (Water flea) 130 mg/l

Dichlorodifluoromethane (CFC-12)

48 h LC50	:	Oryzias latipes (Orange-red killifish) 67 mg/l
48 h EC50	:	Daphnia magna (Water flea) 95 mg/l

1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)

96 h LC50	:	Oncorhynchus mykiss (rainbow trout) 7.4 mg/l
96 h LC50	:	Pimephales promelas (fathead minnow) > 1,000 mg/l
96 h EC50	:	Algae 8.75 mg/l
48 h EC50	:	Daphnia magna (Water flea) 71 mg/l

1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC-114)

96 h LC50	:	Fish 21.5 mg/l
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96 h EC50 : Algae 16 mg/l

48 h EC50 : Daphnia (water flea) 24.4 mg/l

Chloropentafluoroethane (CFC-115)

: No acute toxicity effects at concentrations up to the limit of aqueous solubility

: No acute toxicity effects at concentrations up to the limit of aqueous solubility

Perfluoroethane (FC-116)

96 h LC50 : Pimephales promelas (fathead minnow) 82.3 mg/l

96 h EC50 : Algae 37.5 mg/l

48 h EC50 : Daphnia magna (Water flea) 47.4 mg/l

Propane(HC-290)

96 h LC50 : Fish 24.11 mg/l

72 h EC50 : Algae 7.71 mg/l

48 h EC50 : Daphnia (water flea) 14.22 mg/l

n-Butane (HC-600)

96 h LC50 : Fish (unspecified species) > 1,000 mg/l

Pentane(HC-601)

96 h LC50 : Oncorhynchus mykiss (rainbow trout) 4.26 mg/l

72 h ErC50 : Scenedesmus capricornutum (fresh water algae) 10.7 mg/l

72 h EbC50 : Scenedesmus capricornutum (fresh water algae) 7.51 mg/l

48 h EC50 : Daphnia magna (Water flea) 2.7 mg/l

28 d : NOEC Oncorhynchus mykiss (rainbow trout) 6.165 mg/l



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21 d	:	NOEC Daphnia magna (Water flea) 10.76 mg/l
Isobutane (HC-600a)		
96 h LC50	:	Fish 24.11 mg/l
72 h EC50	:	Algae 7.71 mg/l
48 h EC50	:	Daphnia (water flea) 14.22 mg/l
2-Methylbutane (HC-601a)		
96 h LC50	:	Oncorhynchus mykiss (rainbow trout) 4.26 mg/l
72 h ErC50	:	Pseudokirchneriella subcapitata (green algae) 25.12 mg/l
72 h ErC50	:	Scenedesmus capricornutum (fresh water algae) 10.7 mg/l
72 h EbC50	:	Scenedesmus capricornutum (fresh water algae) 7.51 mg/l
48 h EC50	:	Daphnia magna (Water flea) 2.3 mg/l
28 d	:	NOEC Oncorhynchus mykiss (rainbow trout) 7.6 mg/l
21 d	:	NOEC Daphnia magna (Water flea) 13.29 mg/l
Alkylated Benzene		
96 h LC50	:	Lepomis macrochirus (Bluegill sunfish) > 1,000 mg/l Aquatic toxicity is unlikely due to low solubility.
96 h LC50	:	Pimephales promelas (fathead minnow) > 1,000 mg/l Aquatic toxicity is unlikely due to low solubility.
96 h	:	Selenastrum capricornutum (green algae) Aquatic toxicity is unlikely due to low solubility.
48 h EC50	:	Daphnia magna (Water flea) OECD Test Guideline 202 Aquatic toxicity is unlikely due to low solubility.
Polypropylene Glycol, monobutyl ether		
96 h LC50	:	Danio rerio (zebra fish) 104 mg/l OECD Test Guideline 203

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72 h ErC50 : Pseudokirchneriella subcapitata (green algae) 333 mg/l OECD Test Guideline 201

72 h EbC50 : Pseudokirchneriella subcapitata (green algae) 112 mg/l OECD Test Guideline 201

48 h EC50 : Daphnia magna (Water flea) > 100 mg/l OECD Test Guideline 202

Distillates (Petroleum), clay treated heavy naphthenic; base oil unspecified

96 h LC50 : Pimephales promelas (fathead minnow) > 100 mg/l

48 h EC50 : Daphnia magna (Water flea) > 10,000 mg/l

21 d : NOEC Daphnia magna (Water flea) 1,000 mg/l

Distillates (Petroleum), Solvent-Refined Heavy Paraffinic

96 h LC50 : Pimephales promelas (fathead minnow) > 100 mg/l OECD Test Guideline 203
The toxicological data has been taken from products of similar composition.

72 h NOEC : Pseudokirchneriella subcapitata (green algae) > 100 mg/l OECD Test Guideline 201
The toxicological data has been taken from products of similar composition.

48 h EC50 : Daphnia magna (Water flea) > 10,000 mg/l OECD Test Guideline 202
The toxicological data has been taken from products of similar composition.

21 d : NOEC Daphnia magna (Water flea) 10 mg/l OECD Test Guideline 211
The toxicological data has been taken from products of similar composition.

Environmental Fate

Chlorodifluoromethane (HCFC-22)

Biodegradability : According to the results of tests of biodegradability this product is not readily biodegradable.

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Difluoromethane (HFC-32)	
Biodegradability	: 5 % OECD Test Guideline 301D Not readily biodegradable.
Trifluoromethane (HFC-23)	
Biodegradability	: Not readily biodegradable.
Bioaccumulation	: Bioconcentration factor (BCF) : 3.2 Bioaccumulation is unlikely.
2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)	
Biodegradability	: 24 % Not readily biodegradable.
Bioaccumulation	: Bioconcentration factor (BCF) : 33 Bioaccumulation is unlikely.
1-Chloro-1,1-difluoroethane (HCFC-142b)	
Biodegradability	: Not readily biodegradable.
Bioaccumulation	: Bioaccumulation is unlikely.
1,1,1-Trifluoroethane (HFC-143a)	
Bioaccumulation	: Information given is based on data obtained from similar substances.
Perfluoropropane (FC-218)	
Biodegradability	: Not biodegradable Not readily biodegradable.
Dichlorodifluoromethane (CFC-12)	
Bioaccumulation	: Bioconcentration factor (BCF) : < 10 Bioaccumulation is unlikely.
1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)	
Bioaccumulation	: Bioconcentration factor (BCF) : 11 - 86 Bioaccumulation is unlikely.
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC-114)	
Biodegradability	: Not readily biodegradable.

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Bioaccumulation : Bioaccumulation is unlikely.

Perfluoroethane (FC-116)

Bioaccumulation : Bioaccumulation is unlikely.

n-Butane (HC-600)

Biodegradability : 100 %
Readily biodegradable

Pentane(HC-601)

Biodegradability : 71 %
Readily biodegradable

Bioaccumulation : Bioconcentration factor (BCF) : 171
Bioaccumulation is unlikely.

2-Methylbutane (HC-601a)

Biodegradability : 71.43 %
Readily biodegradable

Bioaccumulation : Bioconcentration factor (BCF) : 171
Bioaccumulation is unlikely.

Alkylated Benzene

Biodegradability : 60 % OECD Test Guideline 301
Readily biodegradable

Bioaccumulation : Bioconcentration factor (BCF) : 35
Bioaccumulation is unlikely.

Polypropylene Glycol, monobutyl ether

Biodegradability : 79 % OECD Test Guideline 301
Readily biodegradable

Bioaccumulation : Bioconcentration factor (BCF) : 3.16
Bioaccumulation is unlikely.

Distillates (Petroleum), clay treated heavy naphthenic; base oil unspecified

Biodegradability : Not readily biodegradable.



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Distillates (Petroleum), Solvent-Refined Heavy Paraffinic

Biodegradability : 31 % OECD Test Guideline 301

Inherently biodegradable.

Information given is based on data obtained from similar substances.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product : Comply with applicable Federal, State/Provincial and Local Regulations.

Contaminated packaging : Dispose of contents/ container to an approved waste disposal plant.

SECTION 14. TRANSPORT INFORMATION

DOT	UN number	: 1078
	Proper shipping name	: Refrigerant gases, n.o.s. (Fluorinated Hydrocarbons)
	Class	: 2.2
	Labelling No.	: 2.2
	Reportable Quantity	: 10 lbs Chlorotrifluoromethane
IATA_C	UN number	: 1078
	Proper shipping name	: Refrigerant gas, n.o.s. (Fluorinated Hydrocarbons)
	Class	: 2.2
	Labelling No.	: 2.2
IMDG	UN number	: 1078
	Proper shipping name	: REFRIGERANT GAS, N.O.S. (Fluorinated Hydrocarbons)
	Class	: 2.2
	Labelling No.	: 2.2

The above shipping information applies to all the Used Refrigerants and Refrigerant Blends except Used



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Refrigerant 11, Used Refrigerant 113, and Used Refrigerant 123. These 3 blends are not classified as dangerous in the meaning of transport regulations.

SECTION 15. REGULATORY INFORMATION

SARA 313 Regulated Chemical(s)	: 2,2-Dichloro-1,1,1-trifluoroethane, 1-Chloro-1,1-difluoroethane , Trichlorofluoromethane , Dichlorodifluoromethane , Chlorotrifluoromethane , Chlorodifluoromethane , 1-Chloro-1,2,2,2-tetrafluoroethane , Cryofluorane
PA Right to Know Regulated Chemical(s)	: Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Trifluoromethane, 1-Chloro-1,1-difluoroethane, Trichlorofluoromethane, Dichlorodifluoromethane, Chlorotrifluoromethane, Carbon tetrafluoride, Chlorodifluoromethane, Cryofluorane, Difluoromethane, Propane, Butane (<0.1% butadiene), Isobutane (containing $\geq 0,1$ % butadiene (203-450-8)), Isobutane (<0.1% butadiene), Pentane, 2-Methylbutane
NJ Right to Know Regulated Chemical(s)	: Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Isobutane (<0.1% butadiene), Pentane, 2-Methylbutane, Trifluoromethane, Perfluoroethane, 2,2-Dichloro-1,1,1-trifluoroethane, 1-Chloro-1,1-difluoroethane, Trichlorofluoromethane, Dichlorodifluoromethane, Chlorotrifluoromethane, Carbon tetrafluoride, Chlorodifluoromethane, 1-Chloro-1,2,2,2-tetrafluoroethane, Cryofluorane, 1,1,1-Trifluoroethane, 1,1-Difluoroethane, Difluoromethane, Octafluoropropane, Propane, Butane (<0.1% butadiene), Isobutane (containing $\geq 0,1$ % butadiene (203-450-8))
CERCLA Reportable Quantity	: 1 lbs Based on the percentage composition of this chemical in the product.: Chlorotrifluoromethane
California Prop. 65	: WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Carbon monoxide



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SECTION 16. OTHER INFORMATION

ChemoursTM and the Chemours Logo are trademarks of The Chemours Company. Before use read Chemours safety information. For further information contact the local Chemours office or nominated distributors.

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Significant change from previous version is denoted with a double bar.



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This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Freon™ HP80 refrigerant
Product Grade/Type	:	ASHRAE Refrigerant number designation: R-402A
Product Use	:	Refrigerant, For professional users only.
Restrictions on use	:	Do not use product for anything outside of the above specified uses
Manufacturer/Supplier	:	The Chemours Company FC, LLC 1007 Market Street Wilmington, DE 19899 United States of America
Product Information	:	1-844-773-CHEM (outside the U.S. 1-302-773-1000)
Medical Emergency	:	1-866-595-1473 (outside the U.S. 1-302-773-2000)
Transport Emergency	:	CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Product hazard category
Gases under pressure Liquefied gas



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Label content

Pictogram :



Signal word : Warning

Hazardous warnings : Contains gas under pressure; may explode if heated.

Hazardous prevention measures : Protect from sunlight. Store in a well-ventilated place.

Other hazards

Misuse or intentional inhalation abuse may lead to death without warning.
Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.
Rapid evaporation of the liquid may cause frostbite.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Pentafluoroethane (HFC-125)	354-33-6	60 %
Chlorodifluoromethane (HCFC-22)	75-45-6	38 %



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Propane	74-98-6	2 %
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SECTION 4. FIRST AID MEASURES

General advice	: Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice. Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.
Inhalation	: Remove from exposure, lie down. Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Consult a physician.
Skin contact	: In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Take off all contaminated clothing immediately. Consult a physician. Wash contaminated clothing before re-use. Treat for frostbite if necessary by gently warming affected area.
Eye contact	: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.
Ingestion	: Is not considered a potential route of exposure.
Most important symptoms/effects, acute and delayed	: Anaesthetic effects Light-headedness irregular heartbeat with a strange sensation in the chest, heart thumping, apprehension, feeling of fainting, dizziness or weakness
Protection of first-aiders	: If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Notes to physician	: Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.



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SECTION 5. FIREFIGHTING MEASURES

- | | | |
|---|---|--|
| Suitable extinguishing media | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Unsuitable extinguishing media | : | No applicable data available. |
| Specific hazards | : | <p>Cylinders are equipped with pressure and temperature relief devices, but may still rupture under fire conditions. Decomposition may occur. Contact of welding or soldering torch flame with high concentrations of refrigerant can result in visible changes in the size and colour of the torch flame. This flame effect will only occur in concentrations of product well above the recommended exposure limit. Therefore stop all work and ventilate to disperse refrigerant vapors from the work area before using any open flames. This substance is not flammable in air at temperatures up to 100 deg. C (212 deg. F) at atmospheric pressure. However, mixtures of this substance with high concentrations of air at elevated pressure and/or temperature can become combustible in the presence of an ignition source. This substance can also become combustible in an oxygen enriched environment (oxygen concentrations greater than that in air). Whether a mixture containing this substance and air, or this substance in an oxygen enriched atmosphere become combustible depends on the inter-relationship of 1) the temperature 2) the pressure, and 3) the proportion of oxygen in the mixture. In general, this substance should not be allowed to exist with air above atmospheric pressure or at high temperatures; or in an oxygen enriched environment. For example this substance should NOT be mixed with air under pressure for leak testing or other purposes. Experimental data have also been reported which indicate combustibility of this substance in the presence of certain concentrations of chlorine.</p> |
| Special protective equipment for firefighters | : | In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. Wear neoprene gloves during cleaning up work after a fire. |



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Further information : Use water spray or fog to protect the fire fighters and to cool container. Self-contained breathing apparatus (SCBA) is required if containers rupture and contents are released under fire conditions.
Water runoff should be contained and neutralized prior to release.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel) : Evacuate personnel to safe areas. Ventilate area, especially low or enclosed places where heavy vapours might collect. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Should not be released into the environment. In accordance with local and national regulations.

Spill Cleanup : Evaporates.
Ventilate area using forced ventilation, especially low or enclosed places where heavy vapors might collect.

Accidental Release Measures : Avoid open flames and high temperatures. Self-contained breathing apparatus (SCBA) is required if a large release occurs.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel) : Avoid breathing vapours or mist. Avoid skin or eye contact with liquid. Use sufficient ventilation to keep employee exposure below recommended limits. Wash hands thoroughly after handling.
Handle in accordance with good industrial hygiene and safety practice.

Handling (Physical Aspects) : The product should not be mixed with air for leak testing or used with air for any other purpose above atmospheric pressure. Contact with chlorine or other strong oxidizing agents should also be avoided.

Dust explosion class : Not applicable



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Storage : Valve protection caps and valve outlet threaded plugs must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (<3000 psig) piping or systems. Never attempt to lift cylinder by its cap. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over.

Separate full containers from empty containers. Keep at temperature not exceeding 52°C. Do not store near combustible materials. Avoid area where salt or other corrosive materials are present.

The product has an indefinite shelf life when stored properly.

Storage period : > 10 yr

Storage temperature : < 52 °C (< 126 °F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : Refrigerant Concentration monitors may be necessary to determine vapor concentrations in work areas prior to use of torches or other open flames, or if employees are entering enclosed areas. Use sufficient ventilation to keep employee exposure below recommended limits. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low or enclosed places.

Personal protective equipment

Respiratory protection : Under normal manufacturing conditions, no respiratory protection is required when using this product.

Hand protection : Additional protection: Impervious gloves

Eye protection : Wear safety glasses with side shields. Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.

Protective measures : Self-contained breathing apparatus (SCBA) is required if a large release occurs.

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Exposure Guidelines
Exposure Limit ValuesPentafluoroethane
No applicable data available.Chlorodifluoromethane
TLV (ACGIH) 1,000 ppm TWAPropane
Permissible (OSHA) 1,000 ppm 1,800 mg/m3 8 hr. TWA
exposure limit:1,1,1-Trifluoroethane
No applicable data available.Pentafluoroethane
No applicable data available.1,1,1,2-Tetrafluoroethane
No applicable data available.**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance
Physical state : gaseous
Form : Liquefied gas
Color : clear, colourless



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Odor	: slight, ether-like
Odor threshold	: No applicable data available.
pH	: neutral
Melting point/range	: No applicable data available.
Boiling point/boiling range	: Boiling point -48.9 °C (-56.0 °F)
Flash point	: does not flash
Evaporation rate	: > 1 (CCL4=1.0)
Flammability (solid, gas)	: Not applicable
Upper explosion limit	: Method: None per ASTM E681
Lower explosion limit	: Method: None per ASTM E681
Vapor pressure	: 13,499 hPa at 25 °C (77 °F)
Vapor density	: 3.6 at 25°C (77°F) and 1013 hPa (Air = 1.0)
Specific gravity (Relative density)	: 1.15 at 25 °C (77 °F)
Water solubility	: not determined
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: No applicable data available.
Auto-ignition temperature	: No applicable data available.
Decomposition temperature	: No applicable data available.



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Viscosity, kinematic : No applicable data available.

Viscosity, dynamic : No applicable data available.

% Volatile : 100 %

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Stable at normal ambient temperature and pressure.

Chemical stability : Stable at normal temperatures and storage conditions.

Possibility of hazardous reactions : Polymerization will not occur.

Conditions to avoid : Avoid open flames and high temperatures.

Incompatible materials : Alkali metals Alkaline earth metals, Powdered metals, Powdered metal salts

Hazardous decomposition products : Decomposition products are hazardous., The exact nature of the decomposition products will depend upon exposure conditions - temperature, access to oxygen, high temperatures (open flames, glowing metal surfaces, etc.) forming hydrochloric and hydrofluoric acids, and possibly carbonyl halides., These materials are toxic and irritating., Avoid contact with decomposition products

SECTION 11. TOXICOLOGICAL INFORMATION

Pentafluoroethane (HFC-125)

Inhalation 4 h LC50 : > 800000 ppm , Rat

Inhalation No Observed Adverse Effect Concentration : 75000 ppm , Dog
Cardiac sensitization

Inhalation Low Observed Adverse Effect Concentration (LOAEC) : 100000 ppm , Dog
Cardiac sensitization

Skin sensitization : Does not cause respiratory sensitisation., human



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Repeated dose toxicity	: Inhalation Rat - gas No toxicologically significant effects were found.
Carcinogenicity	: Not classifiable as a human carcinogen. Overall weight of evidence indicates that the substance is not carcinogenic.
Mutagenicity	: Animal testing did not show any mutagenic effects. Evidence suggests this substance does not cause genetic damage in cultured mammalian cells. Did not cause genetic damage in cultured bacterial cells.
Reproductive toxicity	: No toxicity to reproduction Animal testing showed no reproductive toxicity.
Teratogenicity	: Animal testing showed no developmental toxicity.
Further information	: Cardiac sensitisation threshold limit : 490000 mg/m3
Chlorodifluoromethane (HCFC-22)	
Inhalation 4 h LC50	: > 150000 ppm , Mouse
Inhalation Low Observed Adverse Effect Concentration (LOAEC)	: 50000 ppm , Dog Cardiac sensitization
Inhalation No Observed Adverse Effect Concentration	: 25000 ppm , Dog Cardiac sensitization
Skin irritation	: Not expected to cause skin irritation based on expert review of the properties of the substance.
Eye irritation	: Not expected to cause eye irritation based on expert review of the properties of the substance.
Skin sensitization	: Not expected to cause sensitization based on expert review of the properties of the substance.



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Repeated dose toxicity	: Inhalation Mouse - gas No toxicologically significant effects were found.
Carcinogenicity	: Not classifiable as a human carcinogen. Overall weight of evidence indicates that the substance is not carcinogenic.
Mutagenicity	: Animal testing did not show any mutagenic effects. Experiments showed mutagenic effects in cultured bacterial cells.
Reproductive toxicity	: No toxicity to reproduction
Teratogenicity	: Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.
Further information	: Cardiac sensitisation threshold limit : 175000 mg/m3

Propane

Inhalation 4 h LC50	: > 200000 ppm , Rat
Inhalation Low Observed Adverse Effect Concentration (LOAEC)	: 100000 ppm , Dog Cardiac sensitization
Inhalation No Observed Adverse Effect Concentration	: 50000 ppm , Dog Cardiac sensitization
Dermal	: Not applicable
Oral	: Not applicable
Skin irritation	: Not applicable
Eye irritation	: Not applicable
Skin sensitization	: Not applicable
Repeated dose toxicity	: Inhalation

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Rat

-

gas

No toxicologically significant effects were found.

- Mutagenicity : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Animal testing did not show any mutagenic effects.
- Reproductive toxicity : No toxicity to reproduction
Animal testing showed no reproductive toxicity.
- Teratogenicity : Animal testing showed no developmental toxicity.
- Further information : Cardiac sensitisation threshold limit : 180369 mg/m3

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION**Aquatic Toxicity****Pentafluoroethane (HFC-125)**

- 96 h LC50 : Oncorhynchus mykiss (rainbow trout) 450 mg/l
Information given is based on data obtained from similar substances.
- 96 h ErC50 : Algae 142 mg/l
Information given is based on data obtained from similar substances.
- 72 h NOEC : Pseudokirchneriella subcapitata (green algae) 13.2 mg/l
Information given is based on data obtained from similar substances.



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48 h EC50 : Daphnia magna (Water flea) 980 mg/l
Information given is based on data obtained from similar substances.

Chlorodifluoromethane (HCFC-22)

96 h LC50 : Zebra fish 777 mg/l

96 h EC50 : Algae 250 mg/l

48 h EC50 : Daphnia magna (Water flea) 433 mg/l

Propane

96 h LC50 : Fish 24.11 mg/l

72 h EC50 : Algae 7.71 mg/l

48 h EC50 : Daphnia (water flea) 14.22 mg/l

Environmental Fate

Chlorodifluoromethane (HCFC-22)

Biodegradability : According to the results of tests of biodegradability this product is not readily biodegradable.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product : Can be used after re-conditioning. Recover by distillation or remove to a permitted waste disposal facility. Comply with applicable Federal, State/Provincial and Local Regulations.

Contaminated packaging : Empty pressure vessels should be returned to the supplier.

SECTION 14. TRANSPORT INFORMATION

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DOT	UN number	: 3163
	Proper shipping name	: Liquefied gas, n.o.s. (Chlorodifluoromethane, Pentafluoroethane)
	Class	: 2.2
IATA_C	Labelling No.	: 2.2
	UN number	: 3163
	Proper shipping name	: Liquefied gas, n.o.s. (Chlorodifluoromethane, Pentafluoroethane)
IMDG	Class	: 2.2
	Labelling No.	: 2.2
	UN number	: 3163
	Proper shipping name	: LIQUEFIED GAS, N.O.S. (Chlorodifluoromethane, Pentafluoroethane)
	Class	: 2.2
	Labelling No.	: 2.2

SECTION 15. REGULATORY INFORMATION

SARA 313 Regulated Chemical(s)	: Chlorodifluoromethane
PA Right to Know Regulated Chemical(s)	: Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Propane, Chlorodifluoromethane
NJ Right to Know Regulated Chemical(s)	: Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Propane, Chlorodifluoromethane
California Prop. 65	: Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known



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SECTION 16. OTHER INFORMATION

FreonTM and any associated logos are trademarks or copyrights of The Chemours Company FC, LLC. ChemoursTM and the Chemours Logo are trademarks of The Chemours Company. Before use read Chemours safety information. For further information contact the local Chemours office or nominated distributors.

Revision Date : 05/12/2016

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Significant change from previous version is denoted with a double bar.

Print Date: 05-06-2015

CHILDERS CP-11
801800PM

SAFETY DATA SHEET

REVISION DATE: 12-16-2014

SUPERSEDES: 10-08-2014

SECTION 1: IDENTIFICATION OF THE PRODUCT AND SUPPLIER

PRODUCT INFORMATION

PRODUCT: CHILDERS CP-11
PRODUCT DESCRIPTION: Coating
INTENDED USE: Coating
PRODUCT IDENTIFIER: 801800PM

COMPANY INFORMATION

H.B. Fuller Construction Products Inc.
 1105 S. Frontenac Street
 Aurora, IL 60504
 Phone: 1-800-552-6225

Medical Emergency Phone Number (24 Hours): 1-888-853-1758
 Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

GHS Hazard Symbols:



GHS Signal Word: Warning
GHS Classification: Carcinogenicity Category 2
GHS Hazard Phrases: Suspected of causing cancer.
GHS Precautions:
 Safety Precautions: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.
 First Aid Measures: IF exposed or concerned: Get medical advice/attention.
 Storage: Store locked up.
 Disposal: Dispose of contents/container in accordance with local/regional/national/international regulation for hazardous wastes.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	PERCENT	Classification	Note
Crystalline silica	14808-60-7	10 - 30	Carc. 1A; H350 STOT RE 1; H372	* (see below)
Titanium dioxide	13463-67-7	1 - 5	Carc. 2; H351	* (see below)
2,2,4-Trimethyl-1,3-pentanediolmonoisobutyrate	25265-77-4	1 - 5	Aquatic Acute 3; H402	
Attapulgate	12174-11-7	1 - 5	Carc. 2; H351	* (see below)
Vinyl acetate	108-05-4	0.1 - 1	Carc. 2; H351 Flam. Liq. 2; H225	

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*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

Unlisted ingredients are not 'hazardous' per the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200) and/or are not found on the Canadian Workplace Hazardous Materials Information System ingredient disclosure list. See Section 8 for exposure limit guidelines.

SECTION 4: FIRST AID MEASURES

IF IN EYES: Use an eye wash to remove a chemical from your eye regardless of the level of hazard. Flush the affected eye for at least twenty minutes. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Seek medical advice after flushing.

IF ON SKIN: Wash with soap and water. Get medical attention if irritation develops or persists.

IF INHALED: Remove to fresh air. Call a physician if symptoms persist.

IF SWALLOWED: Do not induce vomiting. Seek medical attention if symptoms develop. Provide medical care provider with this MSDS. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis that may be fatal.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA:	Use water spray, foam, dry chemical or carbon dioxide.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	There is a possibility of pressure buildup in closed containers when heated. Water spray may be used to cool the containers.
SPECIAL FIRE FIGHTING INSTRUCTIONS:	Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.
HAZARDOUS COMBUSTION PRODUCTS:	Carbon dioxide, Carbon monoxide

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPECIAL PROTECTION:	No adverse health effects expected from the clean-up of spilled material. Follow personal protective equipment recommendations found in Section 8 of this MSDS.
METHODS FOR CLEAN-UP:	Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds, or water systems. Avoid creating dusts. Cover material with absorbent and moisten and collect for disposal.

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 7: HANDLING AND STORAGE

Handling: No special handling instructions due to toxicity. Avoid breathing material.

Storage: Store in a cool, dry place.
Consult the Technical Data Sheet for specific storage instructions.

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS:

Chemical Name	Note	ACGIH EXPOSURE LIMITS	OSHA PEL
Crystalline silica	* (see below)	0.025 mg/m ³ TWA (respirable fraction)	((250)/(%SiO ₂ + 5) mppcf TWA (respirable)); ((10)/(%SiO ₂ + 2) mg/m ³ TWA (respirable)); ((30)/(%SiO ₂ + 2) mg/m ³ TWA (total dust))
Titanium dioxide	* (see below)	10 mg/m ³ TWA	15 mg/m ³ TWA (total dust)
Cellulose	* (see below)	10 mg/m ³ TWA	15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)
Vinyl acetate		10 ppm TWA 15 ppm STEL	Not established

*This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

ENGINEERING CONTROL METHODS:

VENTILATION:	Use local exhaust ventilation or other engineering controls to minimize exposures.
EYE PROTECTION:	Wear safety glasses when handling this product.
SKIN PROTECTION:	Avoid skin contact by wearing chemically resistant gloves.
GLOVES:	Not normally required. Use nitrile gloves if conditions warrant.
RESPIRATORY PROTECTION:	Respiratory protection may be required to avoid overexposure when handling this product. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. NIOSH approved air purifying respirator with dust/mist filter. Respirators should be selected by and used following requirements found in OSHA's respirator standard (29 CFR 1910.134).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
COLOR:	White
ODOR:	Sweet
ODOR THRESHOLD:	Not established
pH:	Not established
FREEZING/MELTING POINT (deg. C):	Not established
BOILING POINT (deg. C):	Not established
FLASH POINT:	Non flammable
EVAPORATION RATE:	Not established
FLAMMABILITY:	Not a flammable solid or gas
UPPER EXPLOSIVE LIMIT (% in air):	Not established
LOWER EXPLOSIVE LIMIT (% in air):	Not established
VAPOR PRESSURE (mm Hg):	Not established
VAPOR DENSITY:	Not established
WEIGHT PER GALLON (lbs.):	11.30
SPECIFIC GRAVITY:	1.360
SOLUBILITY:	Not established

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OCTANOL/WATER COEFFICIENT:	Not established
AUTOIGNITION TEMPERATURE:	Not established
DECOMPOSITION TEMPERATURE:	Not established
VISCOSITY:	No data available.
SOLIDS (% by weight):	63.7
VOC, weight percent	0.76
VOC, U.S. EPA Method 24, less water and exempt solvents (analytically determined)	19g/liter of material

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	Stable under normal conditions.
CHEMICAL INCOMPATIBILITY:	Not established
HAZARDOUS POLYMERIZATION:	Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon monoxide, carbon dioxide

SECTION 11: TOXICOLOGICAL INFORMATION

Component Toxicity / Toxicology Data:

COMPONENT NAME	LD50/LC50
Crystalline silica	ORAL LD50 RAT 500 MG/KG
Aluminum hydroxide	ORAL LD50 RAT > 5,000 MG/KG
Titanium dioxide	ORAL LD50 RAT > 10,000 MG/KG
2,2,4-Trimethyl-1,3-pentanediolmonoisobutyrate	ORAL LD50 RAT 3,200 MG/KG DERMAL LD50 RAT > 15,200.00 MG/KG
Cellulose	INHALATION LC50-4H RAT > 5,800.00 MG/M3

This product is a mixture. Unless noted, the information below is based on components.

Skin corrosion / irritation: Can cause minor skin irritation, defatting, and dermatitis.

Serious eye damage / irritation :Can cause minor irritation, tearing and reddening.

Respiratory / skin sensitization: No data available.

Germ cell mutagenicity: No data available.

Carcinogenicity: Contains a material that may cause cancer.

Reproductive toxicity: No data available.

Specific target organ toxicity-single exposure: No data available.

Respiratory irritation / Narcotic effects: No data available.

Specific target organ toxicity-repeated exposure: No data available.

Target organs potentially affected by exposure: Lungs

Aspiration hazard: No data available.

Medical Conditions Aggravated by Exposure: Lung disease

SECTION 12: ECOLOGICAL INFORMATION

OVERVIEW: No ecological information available for this product.

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MOBILITY:	No data available.
PERSISTENCE:	No data available.
BIOACCUMULATION:	No data available.

This product has not been tested for ecological effects. Relevant information for components is listed below:

Component:	Ecotoxicity values:
2,2,4-Trimethyl-1,3-pentanediolemonoisobutyrate	Acute Toxicity (Fish): 96 Hr LC50 Pimephales promelas: 30 mg/L Acute Toxicity (Daphnia): Not established Acute Toxicity (Algae): 72 Hr EC50 Pseudokirchneriella subcapitata: 18.4 mg/L

SECTION 13: DISPOSAL CONSIDERATIONS

To the best of our knowledge, this product does not meet the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. Solidify and dispose of in an approved landfill. Consult state, local or provincial authorities for more restrictive requirements.

SECTION 14: TRANSPORT INFORMATION

Consult Bill of Lading for transportation information.

US DOT:	NOT REGULATED
IATA:	NOT REGULATED

SECTION 15: REGULATORY INFORMATION

INVENTORY STATUS

U.S. EPA TSCA:	This product is in compliance with the Toxic Substances Control Act's Inventory requirements.
CANADIAN CEPA DSL:	The components of this product are included on the DSL or are exempt from DSL requirements.
EUROPEAN REACH:	As a result of the introduction of REACH into Europe, this product cannot be imported into Europe unless the REACH requirements are met.
AUSTRALIA AICS:	This product is in compliance with the Australian Inventory of Chemical Substances requirements.
CHINA IECSC INVENTORY:	This product is in compliance with the Inventory of Existing Chemical Substances in China (IECSC) requirements.

If you need more information about the inventory status of this product call 651-236-5858.

This product may contain chemical substances that are regulated for export by various government agencies (such as the Environmental Protection Agency, the Bureau of Industry and Security, or the Drug Enforcement Administration, among others). Before exporting this product from the USA or Canada, we recommend you contact us at reg.request@hbfuller.com to request an export review.

FEDERAL REPORTING

EPA SARA Title III Section 313

Unless listed below, this product does not contain toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372. EPA has advised that when a percentage range is listed the midpoint may be used to fulfill reporting obligations.

Chemical Name	CAS#	%
Vinyl acetate	108-05-4	0.1 - 1

WHMIS STATUS: Unless listed below, this product is not controlled under the Canadian Workplace Hazardous Materials Information System.

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D2A D2B

STATE REPORTING

Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986:

Unless listed below, this product does not contain known levels of any chemical known to the State of California to cause cancer or reproductive harm.

Chemical Name/List		CAS	Percent
Quartz	(Carcinogen)	14808-60-7	10 - 30
Titanium dioxide	(Carcinogen)	13463-67-7	1 - 5
Acetaldehyde	(Carcinogen)	75-07-0	0.001 - 0.01
Formaldehyde	(Carcinogen)	50-00-0	0.001 - 0.01
1,4-Dioxane	(Carcinogen)	123-91-1	< 10 ppm
Lead	(Carcinogen)	7439-92-1	< 10 ppm
Cadmium	(Carcinogen)	7440-43-9	< 10 ppm
Lead	(Developmental toxin)	7439-92-1	< 10 ppm
Cadmium	(Developmental toxin)	7440-43-9	< 10 ppm
Methanol	(Developmental toxin)	67-56-1	< 10 ppm
Lead	(Female reproductive toxin)	7439-92-1	< 10 ppm
Lead	(Male reproductive toxin)	7439-92-1	< 10 ppm
Cadmium	(Male reproductive toxin)	7440-43-9	< 10 ppm

Substances of Very High Concern (SVHC) Content:

Unless listed below, this product does not contain SVHC's.

tert-Octylphenol, ethoxylated

SECTION 16: OTHER INFORMATION

SDS VERSION DATE: 12-16-2014

This Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

HMIS RATING: HEALTH -- 0 FLAMMABILITY -- 0 REACTIVITY -- 0

See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

Prepared by: The Global Regulatory Department

Phone: 651-236-5842

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to H.B.Fuller Construction Products, Inc. from its suppliers, and because H.B.Fuller Construction Products, Inc. has no control over the conditions of handling and use, H.B.Fuller Construction Products, Inc. makes no warranty, expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and H.B.Fuller Construction Products, Inc. assumes no responsibility for use or reliance thereon. It is the responsibility of the user of H.B.Fuller Construction Products, Inc. products to comply with all applicable federal, state and local laws and regulations.

1. Identification

Product identifier Chockfast Red SG Resin

Other means of identification

SKU# GP109R

Recommended use Not available.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name	ITW Engineered Polymers	
Address	130 Commerce Drive Montgomeryville, PA 18936 United States	
Telephone	Customer Service	(215) 855-8450
Website	www.itwcoatings.com	
E-mail	orders@itwcoatings.com	
Contact person	EHS Department	
Emergency phone number	CHEMTREC	(800) 424-9300
	International	(703) 527-3887

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2
	Sensitization, skin	Category 1

Environmental hazards	Hazardous to the aquatic environment, long-term hazard	Category 2
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OSHA defined hazards Not classified.

Label elements



Signal word Warning

Hazard statement Harmful if swallowed. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Harmful if inhaled. Toxic to aquatic life with long lasting effects.

Prevention Use only outdoors or in a well-ventilated area. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves. Wear eye/face protection.

Response If swallowed: Call a poison center/doctor if you feel unwell. If on skin: Wash with plenty of water. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Specific treatment (see this label). Rinse mouth. If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. Collect spillage.

Storage Store away from incompatible materials.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information 93.06% of the mixture consists of component(s) of unknown acute oral toxicity. 22.57% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Epoxy Resin:--reaction Product Of Bisphenol A And Epichlorohydrin (refer To Epichlorohydrin)		25068-38-6	60 - 100
Cyclic ester		14228-73-0	10 - 30
Butyrolactone		96-48-0	5 - 10

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician if symptoms develop or persist.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Take off contaminated clothing and wash before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
Most important symptoms/effects, acute and delayed	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause an allergic skin reaction. Dermatitis. Rash. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Move containers from fire area if you can do so without risk.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of vapors. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	<p>Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.</p> <p>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p> <p>Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.</p>
Environmental precautions	Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Do not taste or swallow. Avoid breathing vapor. Avoid contact with skin. Avoid contact with eyes. Avoid contact with clothing. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains.

Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

No exposure limits noted for ingredient(s).

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles). Wear a full-face respirator, if needed.

Hand protection

Wear appropriate chemical resistant gloves.

Skin protection

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Liquid.

Physical state

Liquid.

Form

Liquid.

Color

Not available.

Odor

Slight.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

Not available.

Initial boiling point and boiling range

> 400 °F (> 204.44 °C)

Flash point

> 400.0 °F (> 204.4 °C)

Evaporation rate

< 1 BuAc

Flammability (solid, gas)

Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)

Not available.

Flammability limit - upper (%)

Not available.

Explosive limit - lower (%)

Not available.

Explosive limit - upper (%)

Not available.

Vapor pressure

0.18 hPa estimated

Vapor density

< 1

Relative density

Not available.

Solubility(ies)

Solubility (water)

Not available.

Partition coefficient (n-octanol/water)

Not available.

Auto-ignition temperature

851 °F (455 °C) estimated

Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	1.16 lb/gal
Flammability class	Combustible IIIB estimated
Specific gravity	1.16

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Harmful if swallowed.
Inhalation	Harmful if inhaled.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause an allergic skin reaction. Skin irritation. May cause redness and pain. Dermatitis. Rash.
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Information on toxicological effects

Acute toxicity	Harmful if inhaled. Harmful if swallowed. May cause an allergic skin reaction.
Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization	Not available.
Skin sensitization	May cause an allergic skin reaction.

Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
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Carcinogenicity

IARC Monographs. Overall Evaluation of Carcinogenicity

Butyrolactone (CAS 96-48-0)	3 Not classifiable as to carcinogenicity to humans.
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Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not available.

12. Ecological information

Ecotoxicity	Toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Partition coefficient n-octanol / water (log Kow)	
Butyrolactone	-0.64
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

UN number	UN3082
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (Epoxy Resin:--reaction Product Of Bisphenol A And Epichlorohydrin (refer To Epichlorohydrin))
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Packing group	III
Environmental hazards	No.
ERG Code	9L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN3082
UN proper shipping name	Environmentally hazardous substances, liquid, n.o.s. (Epoxy Resin:--reaction Product Of Bisphenol A And Epichlorohydrin (refer To Epichlorohydrin)), MARINE POLLUTANT
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Label(s)	9
Packing group	III
Environmental hazards	
Marine pollutant	Yes
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not available.

IATA; IMDG





15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

SARA 304 Emergency release notification

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

No

SARA 311/312 Hazardous chemical

No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Butyrolactone (CAS 96-48-0)

70 % weight/volumn

DEA Exempt Chemical Mixtures Code Number

Butyrolactone (CAS 96-48-0)

2011

US state regulations

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not regulated.

US. Pennsylvania RTK - Hazardous Substances

Not regulated.

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region

Australia

Inventory name

Australian Inventory of Chemical Substances (AICS)

On inventory (yes/no)*

Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	06-20-2013
Revision date	02-25-2014
Version #	02
HMIS® ratings	Health: 2* Flammability: 1 Physical hazard: 1
NFPA ratings	Health: 2 Flammability: 1 Instability: 1
Disclaimer	The information in the sheet was written based on the best knowledge and experience currently available.
Revision Information	This document has undergone significant changes and should be reviewed in its entirety.



SAFETY DATA SHEET

1. Identification

Product identifier Lectra Clean® Heavy Duty Electrical Parts Degreaser

Other means of identification

Product code 02018

Recommended use Energized electrical cleaner

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufactured or sold by:

Company name CRC Industries, Inc.

Address 885 Louis Dr.
Warminster, PA 18974 US

Telephone

General Information 215-674-4300

Technical Assistance 800-521-3168

Customer Service 800-272-4620

24-Hour Emergency (CHEMTREC) 800-424-9300 (US)
703-527-3887 (International)

Website www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Gases under pressure	Compressed gas
Health hazards	Skin corrosion/irritation	Category 2
	Carcinogenicity	Category 1B
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
Environmental hazards	Hazardous to the aquatic environment, long-term hazard	Category 2
OSHA defined hazards	Not classified.	
Label elements		



Signal word Danger

Hazard statement Contains gas under pressure; may explode if heated. Causes skin irritation. May cause drowsiness or dizziness. May cause cancer. Toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not puncture or incinerate container. Do not expose to heat or store at temperatures above 49°C/120°F. Use with adequate ventilation. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Avoid breathing mist or vapor. Avoid breathing gas. Wash thoroughly after handling. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response If on skin: Wash with plenty of water. If skin irritation occurs: Get medical attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If exposed or concerned: Get medical attention. Take off contaminated clothing and wash before reuse. Collect spillage.

Storage Store locked up. Protect from sunlight. Store in a well-ventilated place. Exposure to high temperature may cause can to burst.

Disposal	Dispose of contents/container in accordance with local/regional/national regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

Supplemental information

When exposed to extreme heat or hot surfaces, vapors may decompose to harmful or fatal corrosive gases such as hydrogen fluoride, hydrogen chloride and possibly phosgene.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Tetrachloroethylene	Perchloroethylene	127-18-4	90 - 100
Carbon dioxide		124-38-9	1 - 3
Decafluoropentane	HFC 43-10mee	138495-42-8	< 1

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Remove contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Do not induce vomiting. Rinse mouth. Call a physician or poison control center immediately.
Most important symptoms/effects, acute and delayed	May cause drowsiness and dizziness. Headache. Nausea, vomiting. Irritation of eyes and mucous membranes. Irritation of nose and throat. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Contents under pressure. During fire, gases hazardous to health may be formed. When exposed to extreme heat or hot surfaces, vapors may decompose to harmful or fatal corrosive gases such as hydrogen fluoride, hydrogen chloride and possibly phosgene.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire-fighting equipment/instructions	In case of fire: Stop leak if safe to do so. Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Avoid breathing gas. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways. Stop the flow of material, if this is without risk. Collect spillage. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage**Precautions for safe handling**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Avoid breathing mist or vapor. Avoid breathing gas. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Use only in well-ventilated areas. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Avoid release to the environment. Do not empty into drains. For product usage instructions, please see the product label.

Conditions for safe storage, including any incompatibilities

Level 1 Aerosol.

Contents under pressure. Do not expose to heat or store at temperatures above 120°F/49°C as can may burst. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection**Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value
Carbon dioxide (CAS 124-38-9)	PEL	9000 mg/m3
		5000 ppm

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
Tetrachloroethylene (CAS 127-18-4)	Ceiling	200 ppm
	TWA	100 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Carbon dioxide (CAS 124-38-9)	STEL	30000 ppm
	TWA	5000 ppm
Tetrachloroethylene (CAS 127-18-4)	STEL	100 ppm
	TWA	25 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Carbon dioxide (CAS 124-38-9)	STEL	54000 mg/m3
		30000 ppm
	TWA	9000 mg/m3 5000 ppm

Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
Tetrachloroethylene (CAS 127-18-4)	0.5 mg/l	Tetrachloroethylene	Blood	*
	3 ppm	Tetrachloroethylene	End-exhaled air	*

* - For sampling details, please see the source document.

Exposure guidelines

US - Minnesota Haz Subs: Skin designation applies

Tetrachloroethylene (CAS 127-18-4)

Skin designation applies.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower should be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear protective gloves such as: Polyvinyl alcohol (PVA). Ethyl vinyl alcohol laminate (EVAL). Viton®.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with an organic vapor cartridge. Use a self-contained breathing apparatus in confined spaces and for emergencies. Air monitoring is needed to determine actual employee exposure levels.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state

Liquid.

Form

Aerosol.

Color

Colorless.

Odor

Irritating.

Odor threshold

50 ppm

pH

Not available.

Melting point/freezing point

-8.1 °F (-22.3 °C) estimated

Initial boiling point and boiling range

250.3 °F (121.3 °C) estimated

Flash point

None (Tag Closed Cup)

Evaporation rate

Very fast.

Flammability (solid, gas)

Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)

Not applicable.

Flammability limit - upper (%)

Not applicable.

Vapor pressure

1333.3 hPa estimated

Vapor density

5.76 (air = 1)

Relative density

1.61 estimated

Solubility (water)

Not available.

Partition coefficient (n-octanol/water)

Not available.

Auto-ignition temperature

Not available.

Decomposition temperature

Not available.

Viscosity (kinematic)

Not available.

Percent volatile

97.7 % estimated

10. Stability and reactivity

Reactivity

The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. When exposed to extreme heat or hot surfaces, vapors may decompose to harmful or fatal corrosive gases such as hydrogen fluoride, hydrogen chloride and possibly phosgene. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Metals. Powdered metal. Amines. Strong bases.
Hazardous decomposition products	Hydrogen fluoride. Hydrogen chloride. Trace amounts of chlorine and phosgene.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause drowsiness and dizziness. Headache. Nausea, vomiting.
Skin contact	Causes skin irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Single dose oral toxicity is considered to be extremely low. Swallowing large amounts may cause injury if aspirated into the lungs. This may be rapidly absorbed through the lungs and result in injury to other body systems.

Symptoms related to the physical, chemical and toxicological characteristics May cause drowsiness and dizziness. Headache. Nausea, vomiting. Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Narcotic effects.

Product	Species	Test Results
Lectra Clean® Heavy Duty Electrical Parts Degreaser		
Acute		
Dermal		
LD50	Rabbit	3310 mg/kg estimated
Inhalation		
LC50	Rat	20 mg/l, 4 Hours estimated
Oral		
LD50	Rat	2697 mg/kg estimated

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Tetrachloroethylene (CAS 127-18-4) 2A Probably carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Tetrachloroethylene (CAS 127-18-4) Reasonably Anticipated to be a Human Carcinogen.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause drowsiness and dizziness.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Based on available data, the classification criteria are not met.
Chronic effects	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

Components	Species	Test Results
Decafluoropentane (CAS 138495-42-8)		
Aquatic		
<i>Acute</i>		
Crustacea	EC50	Water flea (Daphnia magna) 11.7 mg/l, 48 hours
Fish	LC50	Zebra danio (Danio rerio) 13 mg/l, 96 hours
Tetrachloroethylene (CAS 127-18-4)		
Aquatic		
Fish	LC50	Rainbow trout, donaldson trout (Oncorhynchus mykiss) 4.73 - 5.27 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability Not available.

Bioaccumulative potential Not available.

Partition coefficient n-octanol / water (log Kow)

Decafluoropentane	2.7, Pow at 20 °C
Tetrachloroethylene	2.88

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal of waste from residues / unused products This material and its container must be disposed of as hazardous waste. Consult authorities before disposal. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose in accordance with all applicable regulations.

Hazardous waste code
D039: Waste Tetrachloroethylene
F001: Waste Tetrachloroethylene - Spent halogenated solvent used in degreasing
F002: Waste Tetrachloroethylene - Spent halogenated solvent

US RCRA Hazardous Waste U List: Reference

Tetrachloroethylene (CAS 127-18-4) U210

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1950
UN proper shipping name	Aerosols, poison, Limited Quantity
Transport hazard class(es)	
Class	2.2
Subsidiary risk	6.1(PGIII)
Label(s)	2.2, 6.1
Packing group	III
Special precautions for user	Forbidden from transportation by air.
Packaging non bulk	None
Packaging bulk	None

IATA

UN number	UN1950
UN proper shipping name	Aerosols, non-flammable, containing substances in Division 6.1, Packing Group III
Transport hazard class(es)	
Class	2.2
Subsidiary risk	6.1(PGIII)
Packing group	III
Environmental hazards	No.

ERG Code	2P
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.
IMDG	
UN number	UN1950
UN proper shipping name	AEROSOLS
Transport hazard class(es)	
Class	2
Subsidiary risk	6.1
Packing group	III
Environmental hazards	No.
EmS	F-D, S-U
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.	
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Decafluoropentane (CAS 138495-42-8)	1.0 % One-Time Export Notification only.
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not listed.	
SARA 304 Emergency release notification	Not regulated.	
US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance	Tetrachloroethylene (CAS 127-18-4)	
CERCLA Hazardous Substance List (40 CFR 302.4)	Tetrachloroethylene (CAS 127-18-4)	
CERCLA Hazardous Substances: Reportable quantity	Tetrachloroethylene (CAS 127-18-4)	100 LBS
	Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.	
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List	Tetrachloroethylene (CAS 127-18-4)	
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)	Not regulated.	
Safe Drinking Water Act (SDWA)	Not regulated.	
Food and Drug Administration (FDA)	Not regulated.	
Superfund Amendments and Reauthorization Act of 1986 (SARA)		
Section 311/312	Immediate Hazard - Yes	
Hazard categories	Delayed Hazard - Yes	
	Fire Hazard - No	
	Pressure Hazard - Yes	
	Reactivity Hazard - No	
SARA 302 Extremely hazardous substance	No	
US state regulations		
US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))	Tetrachloroethylene (CAS 127-18-4)	
US. New Jersey Worker and Community Right-to-Know Act	Carbon dioxide (CAS 124-38-9)	

US. Massachusetts RTK - Substance List

Carbon dioxide (CAS 124-38-9)
Tetrachloroethylene (CAS 127-18-4)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Rhode Island RTK

Tetrachloroethylene (CAS 127-18-4)

US. New Jersey Worker and Community Right-to-Know Act

Tetrachloroethylene (CAS 127-18-4)

US. Pennsylvania Worker and Community Right-to-Know Law

Tetrachloroethylene (CAS 127-18-4)
Carbon dioxide (CAS 124-38-9)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Tetrachloroethylene (CAS 127-18-4) Listed: April 1, 1988

Volatile organic compounds (VOC) regulations**EPA**

VOC content (40 CFR 51.100(s)) 0 %

Consumer products (40 CFR 59, Subpt. C) Not regulated

State

Consumer products This product is regulated as an Energized Electrical Cleaner for the following states: California, Connecticut, Delaware, District of Columbia, Illinois, Indiana, Maine, Maryland, Massachusetts, Michigan, New Jersey, New York, Ohio, Pennsylvania, Rhode Island and Virginia. It is for energized equipment use only. It is not to be used for motorized vehicle maintenance or their parts. This product is compliant for use in all 50 states.

VOC content (CA) 0 %

VOC content (OTC) 0 %

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	07-23-2014
Revision date	01-13-2016
Prepared by	Allison Cho
Version #	02
Further information	CRC # 863A

HMIS® ratings

Health: 2*
Flammability: 0
Physical hazard: 0
Personal protection: B

NFPA ratings

Health: 2
Flammability: 0
Instability: 0

NFPA ratings**Disclaimer**

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries.



SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY

Product name: DOWFROST™ Heat Transfer Fluid

Issue Date: 04/09/2015

Print Date: 06/15/2015

THE DOW CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: DOWFROST™ Heat Transfer Fluid

Recommended use of the chemical and restrictions on use

Identified uses: Intended as a heat transfer fluid for closed-loop systems. This product is acceptable for use where there is possibility of incidental food contact and as a product for use in the immersion or spray freezing of wrapped meat and packaged poultry products. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

COMPANY IDENTIFICATION

THE DOW CHEMICAL COMPANY
2030 WILLARD H DOW CENTER
MIDLAND MI 48674-0000
UNITED STATES

Customer Information Number:

800-258-2436

SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 800-424-9300

Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Other hazards

no data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Glycol

This product is a mixture.

Component	CASRN	Concentration
Propylene glycol	57-55-6	> 95.0 %
Dipotassium hydrogen phosphate	7758-11-4	< 3.0 %
Water	7732-18-5	< 3.0 %

4. FIRST AID MEASURES

Description of first aid measures

General advice: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin contact: Wash off with plenty of water.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Ingestion: No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Unsuitable extinguishing media: Do not use direct water stream. May spread fire.

Special hazards arising from the substance or mixture

Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Small spills: Absorb with materials such as: Cat litter. Sawdust. Vermiculite. Zorb-all®. Collect in suitable and properly labeled containers. Large spills: Dike area to contain spill. Recover spilled material if possible. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: No special precautions required. Keep container closed. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

Conditions for safe storage: Do not store in: Galvanized steel. Opened or unlabeled containers. Store in original unopened container. See Section 10 for more specific information. Additional storage and handling information on this product may be obtained by calling your sales or customer service contact.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Propylene glycol	US WEEL	TWA	10 mg/m3

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

Skin protection

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Wear clean, body-covering clothing.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	Liquid.
Color	Colorless
Odor	Characteristic
Odor Threshold	No test data available
pH	10.0 50% <i>Literature</i>
Melting point/range	Not applicable to liquids
Freezing point	supercools
Boiling point (760 mmHg)	152 °C (306 °F) <i>Literature</i>
Flash point	closed cup 104 °C (219 °F) <i>Pensky-Martens Closed Cup ASTM D 93</i> (based on major component), Propylene glycol. open cup <i>Cleveland Open Cup ASTM D92</i> None
Evaporation Rate (Butyl Acetate = 1)	<0.5 <i>Estimated.</i>
Flammability (solid, gas)	Not applicable to liquids
Lower explosion limit	2.6 % vol <i>Literature</i> Propylene glycol.
Upper explosion limit	12.5 % vol <i>Literature</i> Propylene glycol.

Vapor Pressure	2.2 mmHg <i>Literature</i>
Relative Vapor Density (air = 1)	>1.0 <i>Literature</i>
Relative Density (water = 1)	1.05 at 20 °C (68 °F) / 20 °C <i>Literature</i>
Water solubility	100 % <i>Literature</i>
Partition coefficient: n-octanol/water	no data available
Auto-ignition temperature	371 °C (700 °F) <i>Literature</i> Propylene glycol.
Decomposition temperature	No test data available
Kinematic Viscosity	43.4 cSt at 20 °C (68 °F) <i>Literature</i>
Explosive properties	no data available
Oxidizing properties	no data available
Molecular weight	76.9 g/mol <i>Literature</i>

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: no data available

Chemical stability: Stable under recommended storage conditions. See Storage, Section 7.
Hygroscopic

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Avoid direct sunlight or ultraviolet sources.

Incompatible materials: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Alcohols. Ethers. Organic acids.

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Acute toxicity

Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

For the major component(s): Propylene glycol.
LD50, Rat, > 20,000 mg/kg

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

For the major component(s): Propylene glycol.

LD50, Rabbit, > 20,000 mg/kg

Acute inhalation toxicity

At room temperature, exposure to vapor is minimal due to low volatility. Mist may cause irritation of upper respiratory tract (nose and throat).

For the major component(s):

LC50, Rat, 4 Hour, vapour, 6.15 mg/l No deaths occurred following exposure to a saturated atmosphere.

Skin corrosion/irritation

Prolonged contact is essentially nonirritating to skin.

Repeated contact may cause flaking and softening of skin.

Serious eye damage/eye irritation

May cause slight temporary eye irritation.

Corneal injury is unlikely.

Sensitization

For the major component(s):

Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

Carcinogenicity

Similar formulations did not cause cancer in laboratory animals.

Teratogenicity

For the major component(s): Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive toxicity

For the major component(s): In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Mutagenicity

In vitro genetic toxicity studies were negative. For the major component(s): Animal genetic toxicity studies were negative.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

Toxicity

Propylene glycol

Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, 40,613 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates

LC50, Ceriodaphnia dubia (water flea), static test, 48 Hour, 18,340 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants

ErC50, Pseudokirchneriella subcapitata (green algae), 96 Hour, Growth rate inhibition, 19,000 mg/l, OECD Test Guideline 201

Toxicity to bacteria

NOEC, Pseudomonas putida, 18 Hour, > 20,000 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, Ceriodaphnia dubia (water flea), semi-static test, 7 d, number of offspring, 13,020 mg/l

Dipotassium hydrogen phosphate

Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Leuciscus idus (Golden orfe), static test, 48 Hour, > 900 mg/l, Method Not Specified.

Persistence and degradability

Propylene glycol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Biodegradation may occur under anaerobic conditions (in the absence of oxygen).

10-day Window: Pass

Biodegradation: 81 %

Exposure time: 28 d

Method: OECD Test Guideline 301F or Equivalent

10-day Window: Not applicable

Biodegradation: 96 %

Exposure time: 64 d

Method: OECD Test Guideline 306 or Equivalent

Theoretical Oxygen Demand: 1.68 mg/mg

Chemical Oxygen Demand: 1.53 mg/mg

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	69.000 %
10 d	70.000 %
20 d	86.000 %

Photodegradation

Atmospheric half-life: 10 Hour

Method: Estimated.

Dipotassium hydrogen phosphate

Biodegradability: Biodegradation is not applicable.

Bioaccumulative potential

Propylene glycol

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): -1.07 Measured

Bioconcentration factor (BCF): 0.09 Estimated.

Dipotassium hydrogen phosphate

Bioaccumulation: No bioconcentration is expected because of the relatively high water solubility.

Mobility in soil

Propylene glycol

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient(Koc): < 1 Estimated.

Dipotassium hydrogen phosphate

No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS

INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

**Transport in bulk
according to Annex I or II
of MARPOL 73/78 and the
IBC or IGC Code**

Not regulated for transport

Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

This product is not a hazardous chemical under 29CFR 1910.1200, and therefore is not covered by Title III of SARA.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Worker and Community Right-To-Know Act:

The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components

Propylene glycol

CASRN

57-55-6

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

United States TSCA Inventory (TSCA)

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

:

16. OTHER INFORMATION

Hazard Rating System**NFPA**

Health	Fire	Reactivity
0	1	0

Revision

Identification Number: 101234106 / A001 / Issue Date: 04/09/2015 / Version: 7.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

TWA	8-hr TWA
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.



SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY

Product name: DOWTHERM™ SR-1 Heat Transfer Fluid, Dyed

Issue Date: 04/09/2015

Print Date: 07/01/2015

THE DOW CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: DOWTHERM™ SR-1 Heat Transfer Fluid, Dyed

Recommended use of the chemical and restrictions on use

Identified uses: Heat transfer fluid. For non-evaporative closed loop systems. Do not use if there is the possibility of incidental contact to food and/or potable water. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

COMPANY IDENTIFICATION

THE DOW CHEMICAL COMPANY
2030 WILLARD H DOW CENTER
MIDLAND MI 48674-0000
UNITED STATES

Customer Information Number:

800-258-2436

SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 800-424-9300

Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Acute toxicity - Category 4 - Oral

Specific target organ toxicity - repeated exposure - Category 2 - Oral

Label elements

Hazard pictograms



Signal word: **WARNING!**

Hazards

Harmful if swallowed.

May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.

Precautionary statements**Prevention**

Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

Wash skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Response

IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.

Get medical advice/ attention if you feel unwell.

Disposal

Dispose of contents/ container to an approved waste disposal plant.

Other hazards

no data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Mixture

This product is a mixture.

Component	CASRN	Concentration
Ethylene glycol	107-21-1	> 95.0 %
Water	7732-18-5	< 3.0 %
Dipotassium hydrogen phosphate	7758-11-4	< 3.0 %

4. FIRST AID MEASURES

Description of first aid measures

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin contact: Immediately flush skin with water while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Contaminated leather items such as shoes should be disposed of properly. Suitable emergency safety shower facility should be immediately available.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Ingestion: Do not induce vomiting. Seek medical attention immediately. If person is fully conscious give 1 cup or 8 ounces (240 ml) of water. If medical advice is delayed and if an adult has swallowed several ounces of chemical, then give 3-4 ounces (1/3-1/2 Cup) (90-120 ml) of hard liquor such as 80 proof whiskey. For children, give proportionally less liquor at a dose of 0.3 ounce (1 ½ tsp.) (8 ml) liquor for each 10 pounds of body weight, or 2 ml per kg body weight [e.g., 1.2 ounce (2 1/3 tbsp.) for a 40 pound child or 36 ml for an 18 kg child].

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: If several ounces (60 - 100 ml) of ethylene glycol have been ingested, early administration of ethanol may counter the toxic effects (metabolic acidosis, renal damage). Consider hemodialysis or peritoneal dialysis & thiamine 100 mg plus pyridoxine 50 mg intravenously every 6 hours. If ethanol is used, a therapeutically effective blood concentration in the range of 100 - 150 mg/dl may be achieved by a rapid loading dose followed by a continuous intravenous infusion. Consult standard literature for details of treatment. 4-Methyl pyrazole (Antizol®) is an effective blocker of alcohol dehydrogenase and should be used in the treatment of ethylene glycol (EG), di- or triethylene glycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol intoxication if available. Fomepizole protocol (Brent, J. et al., New England Journal of Medicine, Feb. 8, 2001, 344:6, p. 424-9): loading dose 15 mg/kg intravenously, follow by bolus dose of 10 mg/kg every 12 hours; after 48 hours, increase bolus dose to 15 mg/kg every 12 hours. Continue fomepizole until serum methanol, EG, DEG, TEG or EGBE are undetectable. The signs and symptoms of poisoning include anion gap metabolic acidosis, CNS depression, renal tubular injury, and possible late stage cranial nerve involvement. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. In severe poisoning, respiratory support with mechanical ventilation and positive end expiratory pressure may be required. Maintain adequate ventilation and oxygenation of the patient. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. If burn is present, treat as any thermal burn, after decontamination. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Unsuitable extinguishing media: Do not use direct water stream. May spread fire.

Special hazards arising from the substance or mixture

Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Liquid mist of this product can burn. Flammable concentrations of vapor can accumulate at temperatures above flash point; see Section 9.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Small spills: Absorb with materials such as: Cat litter. Sawdust. Vermiculite. Zorb-all®. Collect in suitable and properly labeled containers. Large spills: Dike area to contain spill. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not swallow. Avoid contact with eyes. Wash thoroughly after handling. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Do not store in: Galvanized steel. Opened or unlabeled containers. Store in the following material(s): Carbon steel. Stainless steel. Store in original unopened container. See Section 10 for more specific information. Additional storage and handling information on this product may be obtained by calling your sales or customer service contact.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Ethylene glycol	Dow IHG	TWA	50 mg/m ³
	Dow IHG	STEL	100 mg/m ³
	ACGIH	C Aerosol only	100 mg/m ³

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields). If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles. If exposure causes eye discomfort, use a full-face respirator.

Skin protection

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. If hands are cut or scratched, use gloves chemically resistant to this material even for brief exposures. Use gloves with insulation for thermal protection, when needed. Examples of preferred glove barrier materials include: Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). Avoid gloves made of: Polyvinyl alcohol ("PVA").
NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. Selection of specific items such as faceshield, boots, apron, or full-body suit will depend on the task. When handling hot material, protect skin from thermal burns as well as from skin absorption.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk

assessment process. For most conditions, no respiratory protection should be needed; however, if material is heated or sprayed, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	Liquid.
Color	Pink
Odor	Characteristic
Odor Threshold	No test data available
pH	9.5 50% <i>ASTM D1287</i> (typical value)
Melting point/range	Not applicable to liquids
Freezing point	-19.4 °C (-2.9 °F) <i>ASTM D1177</i>
Boiling point (760 mmHg)	158 °C (316 °F) <i>Literature</i>
Flash point	closed cup 126.7 °C (260.1 °F) <i>Pensky-Martens Closed Cup ASTM D 93</i> Ethylene glycol
Evaporation Rate (Butyl Acetate = 1)	< 0.5 <i>Estimated.</i>
Flammability (solid, gas)	Not applicable to liquids
Lower explosion limit	3.2 % vol Vapour <i>Literature</i> LFL of major ingredient Ethylene glycol
Upper explosion limit	No test data available
Vapor Pressure	2.2 mmHg at 20 °C (68 °F) <i>Literature</i>
Relative Vapor Density (air = 1)	>1.0 <i>Literature</i>
Relative Density (water = 1)	1.1295 at 20 °C (68 °F) / 20 °C <i>Literature</i>
Water solubility	100 % <i>Literature</i>
Partition coefficient: n-octanol/water	no data available
Auto-ignition temperature	427 °C (801 °F) <i>Literature</i> Ethylene glycol
Decomposition temperature	No test data available
Kinematic Viscosity	14 cSt at 20 °C (68 °F) <i>Literature</i>
Explosive properties	no data available
Oxidizing properties	no data available
Molecular weight	no data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: no data available

Chemical stability: Thermally stable at typical use temperatures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible materials: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Alcohols. Ethers.

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Acute toxicity

Acute oral toxicity

Oral toxicity is expected to be moderate in humans due to ethylene glycol even though tests with animals show a lower degree of toxicity. Ingestion of quantities (approximately 65 mL (2 oz.) for diethylene glycol or 100 mL (3 oz.) for ethylene glycol) has caused death in humans. May cause nausea and vomiting. May cause abdominal discomfort or diarrhea. Excessive exposure may cause central nervous system effects, cardiopulmonary effects (metabolic acidosis), and kidney failure.

For Ethylene glycol:

Lethal Dose, Human, adult, 3 Ounces

For similar material(s):

LD50, Rat, 8,200 mg/kg

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts. Repeated skin exposure to large quantities may result in absorption of harmful amounts. Massive contact with damaged skin or of material sufficiently hot to burn skin may result in absorption of potentially lethal amounts.

For similar material(s):

LD50, Rabbit, > 2,000 mg/kg No deaths occurred at this concentration.

Acute inhalation toxicity

At room temperature, exposure to vapor is minimal due to low volatility. With good ventilation, single exposure is not expected to cause adverse effects. If material is heated or areas are poorly ventilated, vapor/mist may accumulate and cause respiratory irritation and symptoms such as headache and nausea.

For Ethylene glycol:

LC50, Rat, male and female, 6 Hour, Aerosol, > 2.5 mg/l

Skin corrosion/irritation

Brief contact is essentially nonirritating to skin.

Prolonged contact may cause slight skin irritation with local redness.

Repeated contact may cause skin irritation with local redness.

Serious eye damage/eye irritation

May cause slight eye irritation.

Corneal injury is unlikely.

Vapor or mist may cause eye irritation.

Sensitization

For the major component(s):

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

For the major component(s):

Observations in humans include:

Nystagmus (involuntary eye movement).

In animals, effects have been reported on the following organs:

Kidney.

Liver.

Carcinogenicity

Ethylene glycol did not cause cancer in long-term animal studies.

Teratogenicity

Based on animal studies, ingestion of very large amounts of ethylene glycol appears to be the major and possibly only route of exposure to produce birth defects. Exposures by inhalation or skin contact, the primary routes of occupational exposure, had minimal effect on the fetus, in animal studies.

Reproductive toxicity

Ingestion of large amounts of ethylene glycol has been shown to interfere with reproduction in animals.

Mutagenicity

For the major component(s): Ethylene glycol. In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard

Based on available information, aspiration hazard could not be determined.

12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

Toxicity**Ethylene glycol****Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Pimephales promelas (fathead minnow), static test, 96 Hour, 72,860 mg/l, Other guidelines

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), static test, 48 Hour, > 100 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

ErC50, Pseudokirchneriella subcapitata (green algae), 96 Hour, Growth rate inhibition, 6,500 - 13,000 mg/l, Other guidelines

Toxicity to bacteria

EC50, activated sludge, 30 min, 225 mg/l, OECD 209 Test

Dipotassium hydrogen phosphate**Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Leuciscus idus (Golden orfe), static test, 48 Hour, > 900 mg/l, Method Not Specified.

Persistence and degradability**Ethylene glycol**

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

10-day Window: Pass

Biodegradation: 90 - 100 %

Exposure time: 10 d

Method: OECD Test Guideline 301A or Equivalent

10-day Window: Not applicable

Biodegradation: 90 %

Exposure time: 1 d

Method: OECD Test Guideline 302B or Equivalent

Theoretical Oxygen Demand: 1.29 mg/mg

Dipotassium hydrogen phosphate

Biodegradability: Biodegradation is not applicable.

Bioaccumulative potential**Ethylene glycol**

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): -1.36 Measured

Dipotassium hydrogen phosphate

Bioaccumulation: No bioconcentration is expected because of the relatively high water solubility.

Mobility in soil

Ethylene glycol

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient(Koc): 1 Estimated.

Dipotassium hydrogen phosphate

No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Environmentally hazardous substance, liquid, n.o.s.(Ethylene glycol)
UN number	UN 3082
Class	9
Packing group	III
Reportable Quantity	Ethylene glycol

Classification for SEA transport (IMO-IMDG):

Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Not regulated for transport Consult IMO regulations before transporting ocean bulk
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Classification for AIR transport (IATA/ICAO):

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Acute Health Hazard
Chronic Health Hazard

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Components

Ethylene glycol

CASRN

107-21-1

Pennsylvania Worker and Community Right-To-Know Act:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

United States TSCA Inventory (TSCA)

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

:

16. OTHER INFORMATION

Hazard Rating System**NFPA**

Health	Fire	Reactivity
1	1	0

Revision

Identification Number: 101201450 / A001 / Issue Date: 04/09/2015 / Version: 5.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
C	Ceiling limit
Dow IHG	Dow Industrial Hygiene Guideline
STEL	Short term exposure limit
TWA	Time weighted average

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.



**Arch
Chemicals,
Inc.**

MATERIAL SAFETY DATA SHEET

FOR ANY EMERGENCY, 24 HOURS / 7 DAYS, CALL: 1-800-654-6911
FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC®: 1-800-424-9300
FOR ALL MSDS QUESTIONS & REQUESTS, CALL: 1-800-511-MSDS

PRODUCT NAME: HTH® DRYTEC™ GRANULAR
EPA Registration Number: 1258-427

1. PRODUCT AND COMPANY IDENTIFICATION

Arch Chemicals, Inc.
501 Merritt 7 PO Box 5204
Norwalk, CT 06856-5204

REVISION DATE: 04/17/2006
SUPERCEDES:

MSDS Number: 000000002671
SYNONYMS: None
CHEMICAL FAMILY: Hypochlorite
DESCRIPTION / USE: Sanitizer and Oxidizer
FORMULA: Not Applicable/Mixture

2. HAZARDS IDENTIFICATION

OSHA Hazard
Classification:

Oxidizer, Toxic by inhalation., Corrosive, Eye and skin hazard, Lung toxin

Routes of Entry: Inhalation, skin, eyes, ingestion
Chemical Interactions: No known or reported interactions.
Medical Conditions Aggravated: Asthma, respiratory and cardiovascular disease

Human Threshold Response Data

Odor Threshold Approximately 1.4 mg/m3 (based on odor threshold of chlorine)

Irritation Threshold Approximately 13-22 mg/m3 (based on irritation threshold of chlorine)

Hazardous Materials Identification System / National Fire Protection Association Classifications

<u>Hazard Ratings :</u>	<u>Health</u>	<u>Flammability</u>	<u>Physical / Instability</u>	<u>PPI / Special hazard.</u>
HMIS	3	0	1	
NFPA	3	0	1	OX



Immediate (Acute) Health Effects

Inhalation Toxicity:	HARMFUL IF PRODUCT IS INHALED IN HIGH CONCENTRATIONS. CAUSES BURNS TO RESPIRATORY TRACT. Inhalation of dust or vapor from this product can be irritating to the nose, mouth, throat and lungs. In confined areas, mechanical agitation can result in high levels of dust, and reaction with incompatible materials (as listed in Section 10) can result in high concentrations of chlorine vapor, either of which may result in burns to the respiratory tract, producing lung edema, shortness of breath, wheezing, choking, chest pains, impairment of lung function and possible permanent lung damage.
Skin Toxicity:	CAUSES SKIN BURNS. Dermal exposure can cause severe irritation and/or burns characterized by redness, swelling, and scab formation. Prolonged skin exposure may cause permanent damage.
Eye Toxicity:	CAUSES BURNS TO EYES. Severe irritation and/or burns can occur following eye exposure. Direct contact may cause impairment of vision and corneal damage.
Ingestion Toxicity:	MAY BE FATAL IF SWALLOWED. CAUSES BURNS TO DIGESTIVE TRACT. Irritation and/or burns can occur to the entire gastrointestinal tract, including the stomach and intestines, characterized by nausea, vomiting, diarrhea, abdominal pain, bleeding, and/or tissue ulceration or perforation. Due to the corrosive nature of this product, ingestion may be fatal.

Prolonged (Chronic) Health Effects

Inhalation:	Repeated inhalation exposure may cause impairment of lung function and permanent lung damage.
Skin Contact:	Effects similar to those from acute exposure. Effects secondary to tissue destruction may also occur upon prolonged or repeated exposure.
Ingestion:	There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure.
Chronic Target Organ Toxicity:	None known
Supplemental Health Hazard Information :	No additional health information available.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>CAS OR CHEMICAL NAME</u>	<u>CAS #</u>	<u>% RANGE</u>
CALCIUM HYPOCHLORITE	7778-54-3	60 - 80
SODIUM CHLORIDE	7647-14-5	10 - 20
CALCIUM CHLORATE	10137-74-3	0 - 5
CALCIUM CHLORIDE	10043-52-4	0 - 5



CALCIUM HYDROXIDE	1305-62-0	0 - 4
CALCIUM CARBONATE	471-34-1	0 - 5
Water	7732-18-5	5.5 - 10

4. FIRST AID MEASURES

Inhalation:	IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
Skin Contact:	IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Eye Contact:	IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
Ingestion:	IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
Notes to Physician:	Probable mucosal damage may contraindicate the use of gastric lavage.

5. FIRE FIGHTING MEASURES

Flammability Summary (OSHA):	This product is chemically reactive with many substances. Any contamination of the product with other substances by spill or otherwise may result in a chemical reaction and fire., This product is a strong oxidizer which is capable of intensifying a fire once started., Product is not known to be flammable, combustible or pyrophoric.
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Flammable Properties

Flash Point:	Not applicable
Autoignition Temperature:	Not applicable
Extinguishing Media:	Water only. Do not use dry extinguishers containing ammonium compounds.
Fire Fighting Instructions:	Use water to cool containers exposed to fire. See Section 6 for protective equipment for fire fighting.
Upper Flammable / Explosive Limit, % in air:	Not applicable
Lower Flammable / Explosive Limit, % in air:	Not applicable



6. ACCIDENTAL RELEASE MEASURES

Personal Protection for Emergency Situations:

Response to a large quantity spill (100 pounds or greater) or when dusting or decomposition gas exposure could occur requires the use of a positive pressure full face supplied air respirator or self contained breathing apparatus (SCBA), chemical resistant gloves, coveralls and boots. In case of fire, this personal protective equipment should be used in addition to normal fire fighter equipment.

Spill Mitigation Procedures

Air Release:

Vapors may be suppressed by the use of water fog. All water utilized to assist in fume suppression, decontamination or fire suppression may be contaminated and must be contained before disposal and/or treatment.

Water Release:

This product is heavier than water. This material is soluble in water. Monitor all exit water for available chlorine and pH. Advise local authorities of any contaminated water release.

Land Release:

Contact at 1-800-6546-911 immediately. DANGER: All spills of this product should be treated as contaminated. Contaminated product may initiate a chemical reaction that may spontaneously ignite any combustible material present, resulting in a fire of great intensity. In case of a spill, separate all spilled product from packaging, debris and other material. Using a clean broom or shovel, place all spilled product into plastic bags, and place those bags into a clean, dry disposal container, properly marked and labeled. Disposal containers made of plastic or metal are recommended. Do not seal disposal containers tightly. Immediately remove all product in disposal containers to an isolated area outdoors. Place all damaged packaging material in a disposal container of water to assure decontamination (i.e. removal of all product) before disposal. Place all undamaged packaging in a clean, dry container properly marked and labeled. Call for disposal procedures.

Additional Spill Information :

Hazardous concentrations in air may be found in local spill area and immediately downwind. Remove all sources of ignition. Stop source of spill as soon as possible and notify appropriate personnel. Dispose of spill residues per guidelines under Section 13, Disposal Consideration. This material may be neutralized for disposal; you are requested to contact Arch Chemicals at 1-800-654-6911 before beginning any such procedure. FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC: 1-800-424-9300 REPORTABLE QUANTITY: 10 lbs. (as calcium hypochlorite) per 40 CFR 302.4.

7. HANDLING AND STORAGE

Handling:

Avoid inhalation of dust and fumes. Do not take internally. Avoid contact with skin, eyes and clothing. Upon contact with skin or eyes, wash off with water. Remove contaminated clothing and wash before reuse.



Storage: Keep product tightly sealed in original containers. Store product in a cool, dry, well-ventilated area. Store away from combustible or flammable products. Keep product packaging clean and free of all contamination, including, e.g. other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, all corrosive liquids, flammable or combustible materials, etc.

Shelf Life Limitations: Shelf life (that is, the period of time before the product goes below stated label strength) is determined by storage time and temperatures. Do not store product at temperatures above 52 Deg.C (125 Deg.F). Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products. When stored under moderate temperature conditions, product will maintain stated label strength for approximately two years. Prolonged storage at 35 Deg.C (95 Deg.F) or above will significantly shorten the shelf life. Storage in a climate-controlled storage area or building is recommended in those areas where extremes of high temperature occur.

Incompatible Materials for Storage: Do not allow product to come in contact with other materials, including e.g. other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, all corrosive liquids, flammable or combustible materials, etc.

Do Not Store At temperatures Above: Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products. 52 °C / 125 °F

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation: Use local exhaust ventilation to minimize dust and chlorine level where industrial use occurs. Otherwise ensure good general ventilation.

Protective Equipment for Routine Use of Product

Respiratory Protection : Wear a NIOSH approved respirator if dusts are created. NIOSH approved full face piece air-purifying respirator with chlorine cartridges and dust/mist prefilter.

Skin Protection : Wear impervious gloves to avoid skin contact. Where industrial use occurs, full impermeable suit may be required.

Eye Protection: Use safety glasses with side shields. Where industrial use occurs, chemical goggles may be required.

Protective Clothing Type: Neoprene (This includes: gloves, boots, apron, protective suit)

Exposure Limit Data

<u>CHEMICAL NAME</u>	<u>CAS #</u>	<u>Name of Limit</u>	<u>Exposure</u>
CALCIUM HYPOCHLORITE	7778-54-3	ARCH-ROEG*	1 mg/m3 TWA
CALCIUM HYPOCHLORITE	7778-54-3	NIOSH-IDLH	37 - 48 mg/m3 based on IDLH concentration of chlorine
CALCIUM HYDROXIDE	1305-62-0	ACGIH	5 mg/m3 TWA



CALCIUM HYDROXIDE	1305-62-0	OSHA Z1	5 mg/m3 PEL Respirable fraction.
CALCIUM HYDROXIDE	1305-62-0	OSHA Z1	15 mg/m3 PEL Total dust.
CALCIUM CARBONATE	471-34-1	ACGIH	10 mg/m3 TWA The value is for particulate matter containing no asbestos and <1% crystalline silica.
CALCIUM CARBONATE	471-34-1	OSHA Z1	15 mg/m3 PEL Total dust.
CALCIUM CARBONATE	471-34-1	OSHA Z1	5 mg/m3 PEL Respirable fraction.

*ARCH-ROEG: Arch Recommended Occupational Exposure Guideline.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	solid,
Form	Free flowing, powder
Color:	white
Odor:	Chlorine-like
Molecular Weight:	(Active ingredient)143.00
Specific Gravity :	Not applicable
pH :	10.4 - 10.8 (1% solution in neutral, distilled water) (@ 25 Deg. C)
Boiling Point:	Not applicable
Freezing Point:	Not applicable
Melting Point:	Not applicable
Density:	0.8g/cc
Vapor Pressure:	(@ 25 Deg. C) Not applicable
Vapor Density:	Not applicable
Viscosity:	Not applicable
Fat Solubility:	No data
Solubility in Water:	18 % (@ 25 Deg. C) Product also contains calcium hydroxide and calcium carbonate which will leave a residue.
Partition coefficient n-octanol/water:	No data
Evaporation Rate:	Not applicable
Oxidizing:	None established
Volatiles, % by vol.:	Not applicable
VOC Content	Not applicable
HAP Content	Not applicable

10. STABILITY AND REACTIVITY

Stability and Reactivity Summary:	Product is not sensitive to mechanical shock or impact. Product is not sensitive to electrical static discharge. Product will not undergo hazardous polymerization. Product is an oxidizer. Not pyrophoric. Not an organic peroxide. Not water reactive. Arch calcium hypochlorite products meet the specifications of ASTM method E-487-74 as set forth in 49 CFR 173.21.
Conditions to Avoid:	May be unstable at temperatures above 170 Deg. C (338 Deg. F),



Chemical Incompatibility:

Avoid storage at temperatures above 52 Deg. C (125 Deg. F)., Prevent ingress of humidity and moisture into container or package. Always close the lid.

This product is chemically reactive with many substances, including, e.g., other pool treatment products, acids, organics, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, corrosive, flammable or combustible materials.

Hazardous Decomposition Products:

Chlorine

Decomposition Temperature:

170 °C - 180 °C , 338 °F- 356 °F

11. TOXICOLOGICAL INFORMATION

Component Animal Toxicology

Oral LD50 value:

CALCIUM	LD50 (65% calcium hypochlorite)	850 mg/kg	Rat
HYPOCHLORITE			
SODIUM CHLORIDE	LD50 = 3,000 mg/kg		Rat
CALCIUM CHLORIDE	LD50 = 1,000 mg/kg		Rat

Dermal LD50 value:

CALCIUM	LD50 (65% calcium hypochlorite)	> 2,000 mg/kg	Rabbit
HYPOCHLORITE			
SODIUM CHLORIDE	LD50 > 10,000 mg/kg		Rabbit
CALCIUM CHLORIDE	LD50 = 2,630 mg/kg		Rat

Inhalation LC50 value:

CALCIUM	Inhalation LC50 1 HOUR (65% calcium hypochlorite), (Nose Only)	= 2.04 MG/L
HYPOCHLORITE	Rat	
CALCIUM	Inhalation LC50 4 HOUR (65% calcium hypochlorite), (Nose Only)	= 0.51 MG/L
HYPOCHLORITE	Rat	
SODIUM CHLORIDE	Inhalation LC50 1 HOUR	> 42 MG/L Rat
CALCIUM CHLORIDE	No data	

Product Animal Toxicity

Oral LD50 value: LD50 850 mg/kg Rat

Dermal LD50 value: LD50 CAUSES BURNS TO EYES AND SKIN. > 2,000 mg/kg Rabbit

Inhalation LC50 LC50 1.00 HOUR Based on the acute inhalation toxicity for chlorine.

value: Approximately 1.3 MG/L Rat

Subchronic / Chronic Toxicity: There are no known or reported effects from repeated exposure.

Reproductive and Developmental Toxicity:

Calcium hypochlorite has been tested for teratogenicity in laboratory animals. Results of this study have shown that calcium hypochlorite is not a teratogen.

CALCIUM CHLORIDE

Not known or reported to cause reproductive or developmental toxicity.

Mutagenicity:

Calcium hypochlorite has been tested in the Dominant lethal assay in male mice, and it did not induce a dominant lethal response. Calcium hypochlorite



has been reported to produce mutagenic activity in two in vitro assays. It has, however, been shown to lack the capability to produce mutations in animals based on results from the micronucleus assay. In vitro assays frequently are inappropriate to judge the mutagenic potential of bactericidal chemicals due to a high degree of cellular toxicity. The concentration which produces mutations in these in vitro assays is significantly greater than the concentrations used for disinfection. Based on high cellular toxicity in in vitro assays and the lack of mutagenicity in animals, the risk of genetic damage to humans is judged not significant.

CALCIUM CHLORIDE

This product was determined to be non-mutagenic in the Ames assay. It was also shown to be non-clastogenic in the chromosomal aberration test.

Carcinogenicity:

This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA. One hundred mice were exposed dermally 3 times a week for 18 months to a solution of calcium hypochlorite. Histopathological examination failed to show an increased incidence of tumors. IARC (International Agency for Research on Cancer) reviewed studies conducted with several hypochlorite salts. IARC has classified hypochlorite salts as having inadequate evidence for carcinogenicity to humans and animals. IARC therefore considers hypochlorite salts to be not classifiable as to their carcinogenicity to humans (Group 3 Substance).

CALCIUM CHLORIDE

This chemical is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.

12. ECOLOGICAL INFORMATION

Ecological Toxicity Values for: CALCIUM HYPOCHLORITE

Bluegill	-	(nominal, static). 96 HOUR LC50 0.088 mg/l
Rainbow trout (<i>Salmo gairdneri</i>),	-	(nominal, static). 96 HOUR LC50 0.16 mg/l
Daphnia magna,	-	(nominal, static). 48 HOUR LC50 0.11 mg/l
Bobwhite quail	-	Dietary LC50 > 5,000 ppm
Mallard ducklings	-	Dietary LC50 > 5,000 ppm
Bobwhite quail	-	Oral LD50 3,474 mg/kg

Ecological Toxicity Values for: CALCIUM CHLORIDE

Bluegill	-	(nominal, static). 96 HOUR LC50 = 10,650 mg/l
Mosquito fish	-	(nominal, static). 96 HOUR LC50 = 13,400 mg/l
Fathead minnow (<i>Pimephales promelas</i>),	-	(nominal, static). 96 HOUR LC50 = 4,630 mg/l
Daphnia magna,	-	(nominal, static). 48 HOUR LC50 = 2,770 mg/l
Ceriodaphnia dubia	-	(nominal, static). 48 HOUR LC50 = 1,830 mg/l
Nitzschia linearis (diatom)	-	(nominal, static). 5 day LC50 = 3,130 mg/l



13. DISPOSAL CONSIDERATIONS

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THE MATERIAL. THE USER OF THE MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.

Waste Disposal Summary : If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D001. If this product becomes a waste, it will be a hazardous waste which is subject to the Land Disposal restrictions under 40 CFR 268 and must be managed accordingly.

Disposal Methods : As a hazardous solid waste it should be disposed of in accordance with local, state and federal regulations.

Potential US EPA Waste Codes : D001

14. TRANSPORT INFORMATION

Land (US DOT): UN2880 CALCIUM HYPOCHLORITE, HYDRATED MIXTURE 5.1 II
Water (IMDG): UN2880 CALCIUM HYPOCHLORITE, HYDRATED MIXTURE, 5.1 II

Flash Point: Not applicable
Air (IATA): UN2880 CALCIUM HYPOCHLORITE, HYDRATED MIXTURE, 5.1 II
Emergency Response Guide Number: ERG # 140

Transportation Notes: THIS MATERIAL IS REGULATED AS A DOT HAZARDOUS MATERIAL. HAZARD LABEL/PLACARD: OXIDIZER
REPORTABLE QUANTITY: 10 lbs. (Per 49 CFR 172.101, Appendix) Under specific circumstances, this product can ship under two transport exceptions, Limited Quantity or Consumer Commodity. See Bill of Lading for proper shipping description.

15. REGULATORY INFORMATION

UNITED STATES:

Toxic Substances Control Act (TSCA): The components of this product are listed on the TSCA Inventory of Existing Chemical Substances.

EPA Pesticide Registration Number: 1258-427

FIFRA Listing of Pesticide Chemicals (40 CFR 180): This product is regulated under the Federal Insecticide, Fungicide and Rodenticide Act. It must be used for purposes consistent with its labeling.

Superfund Amendments and Reauthorization Act (SARA) Title III:

Hazard Categories Sections 311 / 312 (40 CFR 370.2):



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**MATERIAL SAFETY
DATA SHEET**

Health
Physical

Immediate (Acute) Health Hazard
Fire and Reactivity

Emergency Planning & Community Right to Know (40 CFR 355, App. A):

Extremely Hazardous Substance Section 302 - Threshold Planning Quantity:

SARA III Threshold Planning Quantity: None established

Reportable Quantity (49 CFR 172.101, Appendix):

CERCLA Reportable quantity: CALCIUM HYPOCHLORITE
Value: 10lbs

SARA III Reportable quantity: None established

Supplier Notification Requirements (40 CFR 372.45), 313 Reportable Components

SARA III De minimis concentration: None established

Clean Air Act Toxic ARP Section 112r:

CAA 112R None established

Clean Air Act Socmi:

HON SOC None established

Clean Air Act VOC Section 111:

CAA 111 None established

Clean Air Act Haz. Air Pollutants Section 112:

CAA None established

CAA 112I None established

CAA AP None established

**State Right-to-Know Regulations Status of Ingredients
Pennsylvania:**

CAS #	COMPONENT NAME
10137-74-3	CALCIUM CHLORATE
1305-62-0	CALCIUM HYDROXIDE
7778-54-3	CALCIUM HYPOCHLORITE

PENN RTK

US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

PENN RTK

08 1989

CHLORIC ACID, CALCIUM SALT

US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

PENN RTK

08 1989

CALCIUM HYDROXIDE (CA(OH)₂)

US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)



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PENN RTK
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HYPOCHLOROUS ACID, CALCIUM SALT

New Jersey:

CAS #	COMPONENT NAME
10137-74-3	CALCIUM CHLORATE
1305-62-0	CALCIUM HYDROXIDE

NJ RTK

US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

NJ RTK

12 1989

Substance no. 0313

CALCIUM CHLORATE CHLORIC ACID, CALCIUM SALT

US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

NJ RTK

12 1989

Substance no. 0322

CALCIUM HYDROXIDE

Massachusetts:

CAS #	COMPONENT NAME
10137-74-3	CALCIUM CHLORATE
1305-62-0	CALCIUM HYDROXIDE
7778-54-3	CALCIUM HYPOCHLORITE

MASS RTK

US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

MASS RTK

04 1993

CALCIUM CHLORATE

US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

MASS RTK

04 1993

CALCIUM HYDROXIDE

US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

MASS RTK

04 1993

CALCIUM HYPOCHLORITE

California Proposition 65:

CAS #	COMPONENT NAME
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MATERIAL SAFETY DATA SHEET

US CA CRT

None established

US CA65CRT

None established

WHMIS Hazard Classification:

WHMIS

Canada. Canadian Environmental Protection Act (CEPA). WHMIS Ingredient Disclosure List (Can. Gaz., Part II, Vol. 122, No. 2)

WHMIS

01 1988

Threshold limits: 1%

English List no. 302

CALCIUM HYDROXIDE

16. OTHER INFORMATION

MSDS REVISION STATUS : Revised to meet the ANSI standard of 16 sections
Major References : Available upon request.

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THE INFORMATION IN THIS MSDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. ARCH CHEMICALS BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION BUT, MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MSDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT ARCH CHEMICALS MSDS CONTROL AT THE PHONE NUMBER ON THE FRONT PAGE TO MAKE CERTAIN THAT THIS DOCUMENT IS CURRENT. .

440 Gasket Safety Data Sheet (SDS, GHS Format)

May be used to comply with OSHA's Hazard Communication Standards 29 CFR 1910.1200. Standards must be consulted for specific requirements.

Section 1 - Identification**Manufacturer's Name & Address:**

Ductmate Industries Inc.
210 Fifth Street
Charleroi, PA 15022

Emergency Telephone Number:

ChemTel Inc. (800)255-3924, +1 (813)248-0585

Chemical Family:

Butyl Rubber Composite

Date Prepared:

01/01/2015

Product Use:

Extruded Rubber Sealer

Product Name:

440 Gasket

Section 2 – Hazards Identification

Hazardous Components: None

ACGIH TLV: No data

HMIS Ratings: Health: 1 Flammability: 0 Reactivity: 0

The primary components utilized in the manufacturing of this product are inert inorganic minerals, water, surfactants and polyisobutylene. These materials are believed to be non-hazardous and are listed under TOSCA regulations.

Effects of Acute Exposure to Product:

None known.

Effects of chronic Exposure to Product:

None known.

Exposure Limits:

None established.

Irritability of Product:

None known.

Sensitization to Product:

None known.

Carcinogenicity:

No evidence.

Teratogenicity:

None known

Reproductive Toxicity:

None known

Mutagenicity:

None known

Synergistic Products:

None known

Section 3 – Composition/Physical Properties

None of the components of this product are hazardous as defined by OSHA Hazard Communication Standard (29 CFR 1910. 1200). If more information is required by a nurse or physician in the event of a medical emergency, contact us at the number listed in Section 1.

CAS Number:

n/a

n/a = Not applicable

Chemical Name:

n/a

Percent by Weight:

n/a

Section 4 – First Aid Measures

Specific Measures:

Eye Contact:	Do not remove, seek medical attention immediately.
Skin contact:	If too sensitive, seek medical attention.
Inhalation:	Not applicable
Ingestion:	Not likely, but if ingested, could constipate or create a blockage. Seek medical attention.

HMIS Health Rating: 1

Section 5 – Fire Fighting Measures

Extinguishing Media: Use water, foam, carbon dioxide, or dry chemical. Nitrogen oxides and carbon monoxides may be involved. Incomplete combustion can yield carbon monoxide and hydrocarbons.

HMIS Flammability Rating: 0

Section 6 – Accidental Release Measures

Leak or Spill Procedure: As the product is a solid, a spill is not really possible. If the material is dumped or falls into an undesirable location and is no longer usable, dispose of the material as described in Section 13 of this document.

Section 7 – Handling and Storage

Handling Procedures & Equipment:	Wash hands with soap and water before eating.
Storage Requirements:	Store in a cool, dry place. Avoid excessive heat and keep away from oxidizers.

Section 8 – Exposure Controls and Personal Protection



Personal Protective Equipment:

HMIS “B” RATING

Gloves (specify):	Cotton or other protective gloves.
Respirator (specify):	None needed.
Eye (specify):	Glasses or goggles recommended. Good industrial practice should be observed.
Footwear (specify):	Industrial shoes to protect skin from adhesive contact.
Clothing (specify):	Long sleeves, long trousers to protect skin from contact.
Other (specify):	None known

Section 9 – Physical and Chemical Properties

Physical State:	Extruded mastic	Odor & Appearance:	Soft, sticky mastic
Vapor Pressure:	n/a	Vapor Density:	n/a
pH:	n/a	Evaporation Rate:	n/a
Specific Gravity:	1.45 g/cc	Coeff. Water/Oil Dist.:	n/a
VOC (Grams/Liter):	n/a	Boiling Point (C):	n/a
Solubility in Water:	Insoluble	Odor Threshold (ppm):	n/a
Freezing Point (C):	n/a	Volatiles by Wt. (%):	n/a
Flash Point (C):	218 degrees COC		

n/a = Not applicable

Section 10 – Stability and Reactivity

Chemical Stability: Stable, no chemical decomposition.

Possibility of hazardous reactions: None are known.

Hazardous decomposition products: None are known.

GHS Reactivity Rating: 5

HMIS Reactivity Rating: 0

Section 11 – Toxicological Information

Route of Entry: Skin Contact (x) Skin Absorption () Eye Contact (x) Inhalation () Ingestion ()

Effects of Acute Exposure to Product: None known.

Effects of chronic Exposure to Product: None known.

Exposure Limits: None established.

Irritability of Product: None known.

Sensitization to Product: None known.

Carcinogenicity: No evidence.

Teratogenicity: None known

Reproductive Toxicity: None known

Mutagenicity: None known

Synergistic Products: None known

Section 12 – Ecological Information

Ecotoxicity: There is no evidence that this product is harmful to the environment.

Bio-accumulative potential: There is no evidence to suggest bioaccumulation will occur.

Mobility: Accidental dropping may lead to mixing with soil, but there is no evidence that this would cause adverse ecological effects.

Section 13 – Disposal Considerations

To the best of our knowledge the product is not considered a hazardous waste based on U.S. EPA Hazardous Waste Regulations 40 CFR 261. Dispose of in accordance with all local, state and federal regulations.

Section 14 – Transport Information

DOT Shipping Regulation: Not Regulated

IATA Shipping Regulation: Not Regulated –material not dangerous (non-hazardous)

Section 15 – Regulatory Information

OSHA		This product or its components are non-hazardous
SARA (311 or 312)	CAS Number:	n/a
		n/a = Not applicable
	Chemical Name:	n/a
	Percent by Weight:	n/a
	Proposition 65:	This product does not contain any chemicals known to the state of California to cause cancer or birth defects
EU Directives		Meets the RoHS requirements
Canada: CEPA & DSL		Not regulated

Section 16 – Other Information

Prepared By:	Ductmate Industries Inc.
Phone Number:	(800) 245-3188
Date:	01/01/2015

Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

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Revision: 03/10/2016

1 Identification

- **Product identifier**
- **Trade name:** Proseal
Proseal Spray
Fiberseal
- **Article number:** No other identifiers
- **Recommended use and restriction on use**
- **Recommended use:** Sealant
- **Restrictions on use:** No relevant information available.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
Ductmate Industries, Inc.
210 5th St.
Charleroi, PA 15022
Phone: 800-245-3188
- **Emergency telephone number:**
ChemTel Inc.
+1 (800)255-3924, +1 (813)248-0585



2 Hazard(s) identification

- **Classification of the substance or mixture**
The product is not classified as hazardous according to the Globally Harmonized System (GHS).
- **Label elements**
- **GHS label elements** Not regulated.
- **Hazard pictograms:** Not regulated.
- **Signal word:** Not regulated.
- **Hazard-determining components of labeling:** Not applicable.
- **Hazard statements:** Not regulated.
- **Classification system**
- **NFPA ratings (scale 0 - 4)**

 Health = 0
Fire = 1
Reactivity = 0
- **HMIS-ratings (scale 0 - 4)**

HEALTH	0
FIRE	1
REACTIVITY	0

 Health = 0
Fire = 1
Reactivity = 0
- **Other hazards** There are no other hazards not otherwise classified that have been identified.

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3 Composition/information on ingredients

· Chemical characterization: Mixtures

· Components:

25212-88-8	Methacrylic acid copolymer dispersion ⚠ Acute Tox. 4, H332	< 1.5%
107-21-1	ethylene glycol ⚠ STOT RE 2, H373 ⚠ Acute Tox. 4, H302	< 1.5%
9004-34-6	Cellulose	< 1.5%
68412-54-4	Nonylphenol, branched, ethoxylated ⚠ Repr. 2, H361	< 1.0%
111-42-2	2,2'-iminodiethanol ⚠ Carc. 2, H351; STOT RE 2, H373 ⚠ Eye Dam. 1, H318 ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315	< 0.2%

· Additional information:

For the wording of the listed Hazard Statements refer to section 16.

For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.

4 First-aid measures

· Description of first aid measures

· After inhalation:

Respiration of particulates is unlikely during normal usage.

Supply fresh air and to be sure to call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

· After skin contact:

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

· After eye contact:

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· After swallowing:

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; immediately call for medical help.

· Most important symptoms and effects, both acute and delayed:

Headache

Dizziness

Nausea

· Indication of any immediate medical attention and special treatment needed:

Treat skin and mucous membrane with antihistamine and corticoid preparations.

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5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents:** None.
- **Special hazards arising from the substance or mixture**
 Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
- **Protective equipment:**
 Wear self-contained respiratory protective device.
 Wear fully protective suit.
- **Additional information:** Cool endangered receptacles with water spray.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures:**
 Ensure adequate ventilation.
- **Environmental precautions:**
 Do not allow to enter sewers/ surface or ground water.
 Inform respective authorities in case of seepage into water course or sewage system.
- **Methods and material for containment and cleaning up:**
 Allow to solidify. Pick up mechanically.
 Clean the affected area carefully; suitable cleaners are:
 Organic solvent
- **Reference to other sections:**
 See Section 7 for information on safe handling.
 See Section 8 for information on personal protection equipment.
 See Section 13 for disposal information.

7 Handling and storage

- **Handling**
- **Precautions for safe handling:**
 Keep away from heat and direct sunlight.
 Store in cool, dry place in tightly closed receptacles.
 Use only in well ventilated areas.
 Avoid contact with the eyes and skin.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:**
 Store away from oxidizing agents.

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Store away from foodstuffs.

· **Further information about storage conditions:** Protect from frost.· **Specific end use(s):** No relevant information available.

8 Exposure controls/personal protection

· Control parameters

· Components with limit values that require monitoring at the workplace:

107-21-1 ethylene glycol

TLV (USA)	Short-term value: NIC-127* mg/m ³ Long-term value: NIC-10** NIC-63.5* mg/m ³ , NIC-25* ppm Ceiling limit value: (100) mg/m ³ (H); *inh. fraction + vapor, P:**inh. fraction, H
EL (Canada)	Short-term value: 20** mg/m ³ Long-term value: 10** mg/m ³ Ceiling limit value: 100* mg/m ³ , 50*** ppm *Aerosol; **Particulate; ***Vapour
EV (Canada)	Ceiling limit value: 100 mg/m ³
LMPE (Mexico)	Ceiling limit value: 100* mg/m ³ A4, *solo aerosol

9004-34-6 Cellulose

PEL (USA)	Long-term value: 15* 5** mg/m ³ *total dust **respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m ³ *total dust **respirable fraction
TLV (USA)	Long-term value: 10 mg/m ³
EL (Canada)	Long-term value: 10* 3** mg/m ³ *total dust, **respirable fraction
EV (Canada)	Long-term value: 10 mg/m ³ paper fibre, total dust
LMPE (Mexico)	Long-term value: 10 mg/m ³

111-42-2 2,2'-iminodiethanol

REL (USA)	Long-term value: 15 mg/m ³ , 3 ppm
TLV (USA)	Long-term value: 1* mg/m ³ , 0.2* ppm Skin; *inhalable fraction and vapor
EL (Canada)	Long-term value: 2 mg/m ³ Skin, IARC 2B
EV (Canada)	Long-term value: 2 mg/m ³
LMPE (Mexico)	Long-term value: 2 mg/m ³ A3, PIEL

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- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
 - Avoid close or long term contact with the skin.
 - Avoid contact with the eyes.
 - Keep away from foodstuffs, beverages and feed.
 - Do not inhale gases / fumes / aerosols.
 - Pregnant women should strictly avoid inhalation or ingestion.
 - Immediately remove all soiled and contaminated clothing.
 - Wash hands before breaks and at the end of work.
- **Engineering controls:** No relevant information available.
- **Breathing equipment:**
 - Not necessary if room is well-ventilated.
 - Use suitable respiratory protective device in case of insufficient ventilation.
 - Use suitable respiratory protective device when aerosol or mist is formed.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

- **Material of gloves** Butyl rubber, BR

- **Eye protection:**



Safety glasses

- **Body protection:** Protective work clothing

9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **Appearance:**

Form: Pasty

Color: Gray

- **Odor:** Mild

- **Odor threshold:** Not determined.

- **pH-value:** 9.5

- **Melting point/Melting range:** Not determined.

- **Boiling point/Boiling range:** 100 °C (212 °F)

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Not determined.

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· Auto-ignition temperature:	Not determined.
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not self-igniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits Lower: Upper:	Not determined. Not determined.
· Vapor pressure:	Not applicable.
· Density:	1.32 g/cm ³ (11.015 lbs/gal)
· Relative density:	Not determined.
· Vapor density:	Not applicable.
· Evaporation rate:	< 1 (BAC = 1)
· Solubility in / Miscibility with Water:	Insoluble.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity Dynamic: Kinematic:	Not applicable. Not applicable.
· Other information	No relevant information available.

10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions:**
Reacts with peroxides and other radical forming substances.
Reacts with strong oxidizing agents.
- **Conditions to avoid:** No relevant information available.
- **Incompatible materials:** No relevant information available.
- **Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
Nitrogen oxides (NO_x)
Hydrocarbons

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11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

25212-88-8 Methacrylic acid copolymer dispersion

Inhalative	LC50/4h	1.03 mg/l (rat)
------------	---------	-----------------

107-21-1 ethylene glycol

Dermal	LD50	9530 mg/kg (rabbit)
--------	------	---------------------

68412-54-4 Nonylphenol, branched, ethoxylated

Oral	LD50	3550 mg/kg (rat)
------	------	------------------

- **Primary irritant effect:**

- **On the skin:** Slight irritant effect on skin and mucous membranes.

- **On the eye:** Slight irritant effect on eyes.

- **Sensitization:** Sensitization possible through skin contact.

- **Subacute to chronic toxicity:** Suspected of damaging fertility or the unborn child.

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer):**

14808-60-7	Quartz (SiO ₂)	1
111-42-2	2,2'-iminodiethanol	3
102-71-6	2,2',2''-nitrilotriethanol	3

- **NTP (National Toxicology Program):**

14808-60-7	quartz	K
------------	--------	---

- **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

- **Probable route(s) of exposure:**

Eye contact.

Skin contact.

- **Acute effects (acute toxicity, irritation and corrosivity):** From product as supplied: None.

- **Repeated dose toxicity:** From product as supplied: None.

- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.

- **Carcinogenicity:** Based on available data, the classification criteria are not met.

- **Reproductive toxicity:** Based on available data, the classification criteria are not met.

- **STOT-single exposure:** Based on available data, the classification criteria are not met.

- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.

- **Aspiration hazard:** Based on available data, the classification criteria are not met.

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12 Ecological information

- **Toxicity**
- **Aquatic toxicity** The product contains materials that are harmful to the environment.
- **Persistence and degradability** The product is partially biodegradable. Significant residuals remain.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.
- **Ecotoxic effects:**
- **Remark:** Due to mechanical actions of the product (e.g. agglutinations), damages may occur.
- **Additional ecological information**
- **General notes:**
 Do not allow product to reach ground water, water course or sewage system, even in small quantities.
 Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment can not be excluded.
- **Other adverse effects:** No relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
 Can be burned with household garbage after consulting with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.
 Can be disposed of with household garbage after solidification following consultation with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.
 The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.
- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- | | |
|--|-----------------------|
| <ul style="list-style-type: none"> · UN-Number · DOT, ADR, IMDG, IATA | <p>Not regulated.</p> |
| <ul style="list-style-type: none"> · UN proper shipping name · DOT, ADR, IMDG, IATA | <p>Not regulated.</p> |
| <ul style="list-style-type: none"> · Transport hazard class(es) · DOT, ADR, IMDG, IATA · Class | <p>Not regulated.</p> |

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Fiberseal

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- | | |
|--|-----------------|
| <ul style="list-style-type: none"> · Packing group · DOT, ADR, IMDG, IATA | Not regulated. |
| <ul style="list-style-type: none"> · Environmental hazards · Marine pollutant: | No |
| <ul style="list-style-type: none"> · Special precautions for user | Not applicable. |
| <ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **United States (USA)**
- **SARA**

Section 302 (extremely hazardous substances):
--

None of the ingredients are listed.

Section 304 (emergency release notification):
--

None of the ingredients are listed.

Sections 311/312 (hazardous chemical threshold planning quantity in pounds):

None of the ingredients are listed.

Section 355 (extremely hazardous substances):
--

None of the ingredients are listed.

Section 313 (Specific toxic chemical listings):
--

107-21-1	ethylene glycol
----------	-----------------

TSCA (Toxic Substances Control Act)
--

All ingredients are listed.

Proposition 65 (California)

Chemicals known to cause cancer:

Reference to Crystalline Silica and/or Quartz is based on unbound respirable particles and is not generally applicable to product as supplied.
 Present in trace quantities.

14808-60-7	quartz
------------	--------

111-42-2	2,2'-iminodiethanol
----------	---------------------

Chemicals known to cause reproductive toxicity for females:
--

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:
--

None of the ingredients are listed.

(Cont'd. on page 10)

Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

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Trade name: Proseal
Proseal Spray
Fiberseal

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· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency):**

None of the ingredients are listed.

· **IARC (International Agency for Research on Cancer):**

14808-60-7	quartz	1
102-71-6	2,2',2''-nitrilotriethanol	3
111-42-2	2,2'-iminodiethanol	2B

· **NIOSH-Ca (National Institute for Occupational Safety and Health):**

14808-60-7 quartz

· **Canadian substance listings**

· **Canadian Domestic Substances List (DSL):**

All ingredients are listed.

· **Canadian Ingredient Disclosure list (limit 0.1%):**

None of the ingredients are listed.

· **Canadian Ingredient Disclosure list (limit 1%):**

107-21-1 ethylene glycol

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Date of preparation / last revision** 03/10/2016 / -

· **Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 NFPA: National Fire Protection Association (USA)
 HMIS: Hazardous Materials Identification System (USA)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 NIOSH: National Institute for Occupational Safety
 OSHA: Occupational Safety & Health
 TLV: Threshold Limit Value
 PEL: Permissible Exposure Limit
 REL: Recommended Exposure Limit
 Acute Tox. 4: Acute toxicity, Hazard Category 4
 Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
 Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
 Carc. 2: Carcinogenicity, Hazard Category 2
 Repr. 2: Reproductive toxicity, Hazard Category 2
 STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2

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Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 03/10/2016

Revision: 03/10/2016

Trade name: Proseal
Proseal Spray
Fiberseal

(Cont'd. of page 10)

Sources

Website, European Chemicals Agency (echa.europa.eu)

Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor internet/registry/substreg/home/overview/home.do)

Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)

Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: ISBN: 978-0-470-07488-6

Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

SDS Prepared by:

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Website: www.chemtelinc.com

**DuPont™ Freon® 22 Refrigerant**

Version 2.1

Revision Date 03/16/2015

Ref. 130000024323

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	DuPont™ Freon® 22 Refrigerant
Tradename/Synonym	:	R-22 Freon® 22 CHLORODIFLUOROMETHANE HCFC-22 DYMEL® 22
Product Grade/Type	:	ASHRAE Refrigerant number designation: R-22
Product Use	:	Refrigerant, For industrial use only.
Restrictions on use	:	Do not use product for anything outside of the above specified uses
Manufacturer/Supplier	:	DuPont 1007 Market Street Wilmington, DE 19898 United States of America
Product Information	:	+1-800-441-7515 (outside the U.S. +1-302-774-1000)
Medical Emergency	:	1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency	:	CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION**Product hazard category**

Gases under pressure

Liquefied gas

DuPont™ Freon® 22 Refrigerant

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Ref. 130000024323

Label content

Pictogram

:



Signal word

: Warning

Hazardous warnings

: Contains gas under pressure; may explode if heated.

Hazardous prevention
measures

: Protect from sunlight. Store in a well-ventilated place.

Other hazards

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing., Rapid evaporation of the liquid may cause frostbite., Misuse or intentional inhalation abuse may cause death without warning symptoms, due to cardiac effects., May cause cardiac arrhythmia.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Chlorodifluoromethane (HCFC-22)	75-45-6	100 %

SECTION 4. FIRST AID MEASURES



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General advice	: Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.
Inhalation	: Remove from exposure, lie down. Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Call a physician.
Skin contact	: Take off all contaminated clothing immediately. Flush area with lukewarm water. Do not use hot water. If frostbite has occurred, call a physician.
Eye contact	: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.
Ingestion	: Is not considered a potential route of exposure.
Most important symptoms/effects, acute and delayed	: No applicable data available.
Protection of first-aiders	: If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Notes to physician	: Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: As appropriate for combustibles in area. Extinguishant for other burning material in area is sufficient to stop burning.
Unsuitable extinguishing media	: No applicable data available.

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- Specific hazards** : Cylinders are equipped with pressure and temperature relief devices, but may still rupture under fire conditions. Decomposition may occur. Contact of welding or soldering torch flame with high concentrations of refrigerant can result in visible changes in the size and colour of the torch flame. This flame effect will only occur in concentrations of product well above the recommended exposure limit. Therefore stop all work and ventilate to disperse refrigerant vapors from the work area before using any open flames. This substance is not flammable in air at temperatures up to 100 deg. C (212 deg. F) at atmospheric pressure. However, mixtures of this substance with high concentrations of air at elevated pressure and/or temperature can become combustible in the presence of an ignition source. This substance can also become combustible in an oxygen enriched environment (oxygen concentrations greater than that in air). Whether a mixture containing this substance and air, or this substance in an oxygen enriched atmosphere become combustible depends on the inter-relationship of 1) the temperature 2) the pressure, and 3) the proportion of oxygen in the mixture. In general, this substance should not be allowed to exist with air above atmospheric pressure or at high temperatures; or in an oxygen enriched environment. For example this substance should NOT be mixed with air under pressure for leak testing or other purposes. Experimental data have also been reported which indicate combustibility of this substance in the presence of certain concentrations of chlorine.
- Special protective equipment for firefighters** : In the event of fire, wear self-contained breathing apparatus. Wear neoprene gloves during cleaning up work after a fire.
- Further information** : Self-contained breathing apparatus (SCBA) is required if containers rupture and contents are released under fire conditions.
Cool containers/tanks with water spray. Water runoff should be contained and neutralized prior to release.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

- Safeguards (Personnel)** : Evacuate personnel to safe areas. Ventilate the area. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions** : Should not be released into the environment.

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- Spill Cleanup : Evaporates.
Ventilate area using forced ventilation, especially low or enclosed places where heavy vapors might collect.
- Accidental Release Measures : Ventilate area, especially low or enclosed places where heavy vapours might collect. Avoid open flames and high temperatures. Self-contained breathing apparatus (SCBA) is required if a large release occurs.

SECTION 7. HANDLING AND STORAGE

- Handling (Personnel) : Avoid breathing vapours or mist. Avoid contact with skin, eyes and clothing. Provide sufficient air exchange and/or exhaust in work rooms. For personal protection see section 8.
The product should not be mixed with air for leak testing or used with air for any other purpose above atmospheric pressure. Contact with chlorine or other strong oxidizing agents should also be avoided.
Handle in accordance with good industrial hygiene and safety practice.
- Handling (Physical Aspects) : No special protective measures against fire required.
- Dust explosion class : No applicable data available.
- Storage : Valve protection caps and valve outlet threaded plugs must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (<3000 psig) piping or systems. Never attempt to lift cylinder by its cap. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over.
Separate full containers from empty containers. Keep at temperature not exceeding 52°C. Do not store near combustible materials. Avoid area where salt or other corrosive materials are present.
The product has an indefinite shelf life when stored properly.
- Storage period : > 10 yr
- Storage temperature : < 52 °C (< 126 °F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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- Engineering controls : Ensure adequate ventilation, especially in confined areas. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low or enclosed places.
- Personal protective equipment
- Respiratory protection : Under normal manufacturing conditions, no respiratory protection is required when using this product. For rescue and maintenance work in storage tanks use self-contained breathing apparatus.
- Hand protection : Additional protection: Impervious gloves
- Hand protection : Additional protection: Protective gloves complying with EN 374., or, US OSHA guidelines
- Eye protection : Safety glasses with side-shields Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.
- Protective measures : Self-contained breathing apparatus (SCBA) is required if a large release occurs.

Exposure Guidelines
Exposure Limit Values

Chlorodifluoromethane
TLV (ACGIH) 1,000 ppm TWA

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance
- Physical state : gaseous
- Form : Liquefied gas
- Color : clear
- Odor : slight, ether-like
- Odor threshold : No applicable data available.
- pH : neutral

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Melting point/range	: No applicable data available.
Boiling point/boiling range	: Boiling point -40.8 °C (-41.4 °F) at 1,013 hPa
Flash point	: does not flash
Evaporation rate	: > 1 (CCL4=1.0)
Flammability (solid, gas)	: No applicable data available.
Upper explosion limit	: Method: None per ASTM E681
Lower explosion limit	: Method: None per ASTM E681
Vapor pressure	: 10,439.0 hPa at 25 °C (77 °F)
Vapor density	: 3.0 at 25°C (77°F) and 1013 hPa (Air=1.0)
Density	: 1.191 g/cm ³ at 25 °C (77 °F) (as liquid)
Specific gravity (Relative density)	: 1.19 at 25 °C (77 °F)
Water solubility	: 2.6 g/l at 25 °C (77 °F)
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: No applicable data available.
Auto-ignition temperature	: No applicable data available.
Decomposition temperature	: 632 °C
Viscosity, kinematic	: No applicable data available.
Viscosity	: No applicable data available.
% Volatile	: 100 %

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SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Decomposes on heating.
Chemical stability	: Stable at normal temperatures and storage conditions.
Possibility of hazardous reactions	: Polymerization will not occur. Other burning materials may cause HCFC 22 to burn weakly. Chlorodifluoromethane is not flammable at ambient temperatures and atmospheric pressure. However, chlorodifluoromethane has been shown in tests to be combustible at pressures as low as 60 psig at ambient temperature when mixed with air at concentrations of 65 volume % air. Experimental data have also been reported which indicate combustibility of HCFC 22 in the presence of certain concentrations of chlorine.
Conditions to avoid	: The product is not flammable in air under ambient conditions of temperature and pressure. When pressurised with air or oxygen, the mixture may become flammable. Certain mixtures of HCFCs or HFCs with chlorine may become flammable or reactive under certain conditions. Avoid open flames and high temperatures.
Incompatible materials	: Alkali metals Alkaline earth metals, Powdered metals, Powdered metal salts
Hazardous decomposition products	: Decomposition products are hazardous., This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrochloric and hydrofluoric acids, and possibly carbonyl halides., These materials are toxic and irritating., Avoid contact with decomposition products

SECTION 11. TOXICOLOGICAL INFORMATION

Chlorodifluoromethane (HCFC-22)

Inhalation 4 h LC50	: > 150000 ppm , Mouse
Inhalation Low Observed Adverse Effect Concentration (LOAEC)	: 50000 ppm , Dog Cardiac sensitization
Inhalation No Observed Adverse Effect Concentration	: 25000 ppm , Dog Cardiac sensitization
Skin irritation	: Not expected to cause skin irritation based on expert review of the properties of the substance.

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Eye irritation	:	Not expected to cause eye irritation based on expert review of the properties of the substance.
Skin sensitization	:	Not expected to cause sensitization based on expert review of the properties of the substance.
Repeated dose toxicity	:	Inhalation Mouse - gas No toxicologically significant effects were found.
Carcinogenicity	:	Not classifiable as a human carcinogen. Overall weight of evidence indicates that the substance is not carcinogenic.
Mutagenicity	:	Animal testing did not show any mutagenic effects. Experiments showed mutagenic effects in cultured bacterial cells.
Reproductive toxicity	:	No toxicity to reproduction
Teratogenicity	:	Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ than those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION**Aquatic Toxicity****Chlorodifluoromethane (HCFC-22)**

96 h LC50 : Zebra fish 777 mg/l

96 h EC50 : Algae 250 mg/l

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48 h EC50 : Daphnia magna (Water flea) 433 mg/l

Environmental Fate

Chlorodifluoromethane (HCFC-22)

Biodegradability

: According to the results of tests of biodegradability this product is not readily biodegradable.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product : Can be used after re-conditioning. Recover, reclaim by distillation, or remove to a permitted waste disposal facility. Comply with applicable Federal, State/Provincial and Local Regulations.

Contaminated packaging : Empty pressure vessels should be returned to the supplier.

SECTION 14. TRANSPORT INFORMATION

DOT	UN number	: 1018
	Proper shipping name	: Chlorodifluoromethane
	Class	: 2.2
	Labelling No.	: 2.2
IATA_C	UN number	: 1018
	Proper shipping name	: Chlorodifluoromethane
	Class	: 2.2
	Labelling No.	: 2.2
IMDG	UN number	: 1018
	Proper shipping name	: CHLORODIFLUOROMETHANE
	Class	: 2.2
	Labelling No.	: 2.2

SECTION 15. REGULATORY INFORMATION

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TSCA	: On the inventory, or in compliance with the inventory
SARA 313 Regulated Chemical(s)	: Chlorodifluoromethane
PA Right to Know Regulated Chemical(s)	: Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Chlorodifluoromethane
NJ Right to Know Regulated Chemical(s)	: Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Chlorodifluoromethane
California Prop. 65	: Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

SECTION 16. OTHER INFORMATION

Freon is a registered trademark of E. I. duPont de Nemours & Company, Inc.

® DuPont's registered trademark

Before use read DuPont's safety information. For further information contact the local DuPont office or DuPont's nominated distributors.

Revision Date : 03/16/2015

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Significant change from previous version is denoted with a double bar.

**DuPont™ Suva® 410A Refrigerant**

Version 2.0

Revision Date 03/23/2015

Ref. 130000050990

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	DuPont™ Suva® 410A Refrigerant
Tradename/Synonym	:	Suva® 9100 R-410A Suva® R-410A 410A HFC 410A
Product Grade/Type	:	ASHRAE Refrigerant number designation: R-410A
Product Use	:	Refrigerant, For professional users only.
Restrictions on use	:	Do not use product for anything outside of the above specified uses
Manufacturer/Supplier	:	DuPont 1007 Market Street Wilmington, DE 19898 United States of America
Product Information	:	+1-800-441-7515 (outside the U.S. +1-302-774-1000)
Medical Emergency	:	1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency	:	CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION**Product hazard category**

Gases under pressure

Liquefied gas

DuPont™ Suva® 410A Refrigerant

Version 2.0

Revision Date 03/23/2015

Ref. 130000050990

Label content

Pictogram

:



Signal word

: Warning

Hazardous warnings

: Contains gas under pressure; may explode if heated.

Hazardous prevention
measures

: Protect from sunlight. Store in a well-ventilated place.

Other hazards

Misuse or intentional inhalation abuse may lead to death without warning.

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Rapid evaporation of the liquid may cause frostbite.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Pentafluoroethane (HFC-125)	354-33-6	50 %
Difluoromethane (HFC-32)	75-10-5	50 %

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SECTION 4. FIRST AID MEASURES

General advice	: Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.
Inhalation	: Remove from exposure, lie down. Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Consult a physician.
Skin contact	: Take off contaminated clothing and shoes immediately. Flush area with lukewarm water. Do not use hot water. If frostbite has occurred, call a physician.
Eye contact	: Rinse immediately with plenty of water and seek medical advice.
Ingestion	: Is not considered a potential route of exposure.
Most important symptoms/effects, acute and delayed	: Anaesthetic effects Light-headedness irregular heartbeat with a strange sensation in the chest, heart thumping, apprehension, feeling of fainting, dizziness or weakness
Protection of first-aiders	: If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Notes to physician	: Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	: No applicable data available.

**DuPont™ Suva® 410A Refrigerant**

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Revision Date 03/23/2015

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- Specific hazards** : Cylinders are equipped with pressure and temperature relief devices, but may still rupture under fire conditions. Decomposition may occur. Contact of welding or soldering torch flame with high concentrations of refrigerant can result in visible changes in the size and colour of the torch flame. This flame effect will only occur in concentrations of product well above the recommended exposure limit. Therefore stop all work and ventilate to disperse refrigerant vapors from the work area before using any open flames. This substance is not flammable in air at temperatures up to 100 deg. C (212 deg. F) at atmospheric pressure. However, mixtures of this substance with high concentrations of air at elevated pressure and/or temperature can become combustible in the presence of an ignition source. This substance can also become combustible in an oxygen enriched environment (oxygen concentrations greater than that in air). Whether a mixture containing this substance and air, or this substance in an oxygen enriched atmosphere become combustible depends on the inter-relationship of 1) the temperature 2) the pressure, and 3) the proportion of oxygen in the mixture. In general, this substance should not be allowed to exist with air above atmospheric pressure or at high temperatures; or in an oxygen enriched environment. For example this substance should NOT be mixed with air under pressure for leak testing or other purposes. Experimental data have also been reported which indicate combustibility of this substance in the presence of certain concentrations of chlorine.
- Special protective equipment for firefighters** : In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. Wear neoprene gloves during cleaning up work after a fire.
- Further information** : Cool containers/tanks with water spray. Self-contained breathing apparatus (SCBA) is required if containers rupture and contents are released under fire conditions.
Water runoff should be contained and neutralized prior to release.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

- Safeguards (Personnel)** : Evacuate personnel to safe areas. Ventilate area, especially low or enclosed places where heavy vapours might collect.



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- Environmental precautions : Should not be released into the environment.
In accordance with local and national regulations.
- Spill Cleanup : Evaporates.
Ventilate area using forced ventilation, especially low or enclosed places
where heavy vapors might collect.
- Accidental Release Measures : Avoid open flames and high temperatures. Self-contained breathing
apparatus (SCBA) is required if a large release occurs.

SECTION 7. HANDLING AND STORAGE

- Handling (Personnel) : Avoid breathing vapours or mist. Avoid contact with skin, eyes and clothing.
Provide sufficient air exchange and/or exhaust in work rooms. For personal
protection see section 8.
- Handling (Physical Aspects) : The product should not be mixed with air for leak testing or used with air for
any other purpose above atmospheric pressure. Contact with chlorine or
other strong oxidizing agents should also be avoided.
- Dust explosion class : Not applicable
- Storage : Valve protection caps and valve outlet threaded plugs must remain in place
unless container is secured with valve outlet piped to use point. Do not drag,
slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a
pressure reducing regulator when connecting cylinder to lower pressure
(<3000 psig) piping or systems. Never attempt to lift cylinder by its cap. Use a
check valve or trap in the discharge line to prevent hazardous back flow into
the cylinder. Cylinders should be stored upright and firmly secured to
prevent falling or being knocked over.
Separate full containers from empty containers. Keep at temperature not
exceeding 52°C. Do not store near combustible materials. Avoid area where
salt or other corrosive materials are present.
The product has an indefinite shelf life when stored properly.
- Storage period : > 10 yr
- Storage temperature : < 52 °C (< 126 °F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**DuPont™ Suva® 410A Refrigerant**

Version 2.0

Revision Date 03/23/2015

Ref. 130000050990

- Engineering controls : Use sufficient ventilation to keep employee exposure below recommended limits. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low or enclosed places. Refrigerant Concentration monitors may be necessary to determine vapor concentrations in work areas prior to use of torches or other open flames, or if employees are entering enclosed areas.
- Personal protective equipment
- Respiratory protection : Under normal manufacturing conditions, no respiratory protection is required when using this product.
- Hand protection : Additional protection: Impervious gloves
- Eye protection : Wear safety glasses with side shields. Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.
- Protective measures : Self-contained breathing apparatus (SCBA) is required if a large release occurs.

Exposure Guidelines
Exposure Limit Values

Pentafluoroethane			
AEL *	(DUPONT)	1,000 ppm	8 & 12 hr. TWA
Difluoromethane			
AEL *	(DUPONT)	1,000 ppm	8 & 12 hr. TWA

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

- Physical state : gaseous
Form : Liquefied gas
Color : colourless

**DuPont™ Suva® 410A Refrigerant**

Version 2.0

Revision Date 03/23/2015

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Odor	: slight, ether-like
Odor threshold	: No applicable data available.
pH	: neutral
Melting point/range	: No applicable data available.
Boiling point/boiling range	: Boiling point -51.4 °C (-60.5 °F)
Flash point	: does not flash
Evaporation rate	: > 1 (CCL4=1.0)
Flammability (solid, gas)	: No applicable data available.
Upper explosion limit	: Method: None per ASTM E681
Lower explosion limit	: Method: None per ASTM E681
Vapor pressure	: 16,574 hPa at 25 °C (77 °F)
Vapor density	: 2.5 at 25°C (77°F) and 1013 hPa (Air=1.0)
Density	: 1.062 g/cm ³ at 25 °C (77 °F) (as liquid)
Density	: 0.0066 g/cm ³ at ca. 26 °C (79 °F) at (1,013 hPa)
Specific gravity (Relative density)	: 1.06 at 25 °C (77 °F)
Water solubility	: not determined
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: No applicable data available.
Auto-ignition temperature	: No applicable data available.
Decomposition temperature	: No applicable data available.

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Viscosity, kinematic : No applicable data available.

Viscosity : No applicable data available.

% Volatile : 100 %

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Stable at normal ambient temperature and pressure.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Polymerization will not occur.

Conditions to avoid : Avoid open flames and high temperatures.

Incompatible materials : Alkali metals Alkaline earth metals, Powdered metals, Powdered metal salts

Hazardous decomposition products : Decomposition products are hazardous., This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrofluoric acid and possibly carbonyl fluoride., These materials are toxic and irritating., Avoid contact with decomposition products

SECTION 11. TOXICOLOGICAL INFORMATION**Pentafluoroethane (HFC-125)**

Inhalation 4 h LC50 : > 800000 ppm , Rat

Inhalation No Observed Adverse Effect Concentration : 100000 ppm , Dog
Cardiac sensitization

Inhalation Low Observed Adverse Effect Concentration (LOAEC) : 75000 ppm , Dog
Cardiac sensitization

Skin sensitization : Does not cause respiratory sensitisation., human

Repeated dose toxicity : Inhalation
Rat
-
gas
NOAEL: > 50000,
No toxicologically significant effects were found.


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Carcinogenicity	: Not classifiable as a human carcinogen. Overall weight of evidence indicates that the substance is not carcinogenic.
Mutagenicity	: Animal testing did not show any mutagenic effects. Evidence suggests this substance does not cause genetic damage in cultured mammalian cells. Did not cause genetic damage in cultured bacterial cells.
Reproductive toxicity	: No toxicity to reproduction Animal testing showed no reproductive toxicity.
Teratogenicity	: Animal testing showed no developmental toxicity.
Further information	: Cardiac sensitisation threshold limit : 490000 mg/m3

Difluoromethane (HFC-32)

Inhalation 4 h LC50	: > 520000 ppm , Rat
Inhalation Low Observed Adverse Effect Concentration (LOAEC)	: > 350000 ppm , Dog Cardiac sensitization
Inhalation No Observed Adverse Effect Concentration	: 350000 ppm , Dog Cardiac sensitization
Skin irritation	: No skin irritation, Not tested on animals Not expected to cause skin irritation based on expert review of the properties of the substance.
Eye irritation	: No eye irritation, Not tested on animals Not expected to cause eye irritation based on expert review of the properties of the substance.
Skin sensitization	: Does not cause skin sensitisation., Not tested on animals Not expected to cause sensitization based on expert review of the properties of the substance. There are no reports of human respiratory sensitization.
Repeated dose toxicity	: Inhalation Rat - No toxicologically significant effects were found.

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Mutagenicity	: Animal testing did not show any mutagenic effects. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Reproductive toxicity	: No toxicity to reproduction Animal testing showed no reproductive toxicity. Information given is based on data obtained from similar substances.
Teratogenicity	: Animal testing showed no developmental toxicity.
Further information	: Cardiac sensitisation threshold limit : > 735000 mg/m3

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION**Aquatic Toxicity****Pentafluoroethane (HFC-125)**

96 h LC50	: Oncorhynchus mykiss (rainbow trout) 450 mg/l Information given is based on data obtained from similar substances.
96 h ErC50	: Algae 142 mg/l Information given is based on data obtained from similar substances.
72 h NOEC	: Pseudokirchneriella subcapitata (green algae) 13.2 mg/l Information given is based on data obtained from similar substances.
48 h EC50	: Daphnia magna (Water flea) 980 mg/l Information given is based on data obtained from similar substances.

Difluoromethane (HFC-32)

96 h LC50	: Fish 1,507 mg/l
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96 h EC50	:	Algae 142 mg/l
48 h EC50	:	Daphnia (water flea) 652 mg/l
30 d	:	NOEC Fish (unspecified species) 65.8 mg/l

Environmental Fate

Difluoromethane (HFC-32)

Biodegradability	:	5 % OECD Test Guideline 301D Not readily biodegradable.
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SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product	:	Can be used after re-conditioning. Recover by distillation or remove to a permitted waste disposal facility. Comply with applicable Federal, State/Provincial and Local Regulations.
----------------------------------	---	--

Contaminated packaging	:	Empty pressure vessels should be returned to the supplier.
------------------------	---	--

SECTION 14. TRANSPORT INFORMATION

DOT	UN number	:	3163
	Proper shipping name	:	Liquefied gas, n.o.s. (Pentafluoroethane, Difluoromethane)
	Class	:	2.2
	Labelling No.	:	2.2
IATA_C	UN number	:	3163
	Proper shipping name	:	Liquefied gas, n.o.s. (Pentafluoroethane, Difluoromethane)
	Class	:	2.2
	Labelling No.	:	2.2
IMDG	UN number	:	3163
	Proper shipping name	:	LIQUEFIED GAS, N.O.S. (Pentafluoroethane, Difluoromethane)
	Class	:	2.2
	Labelling No.	:	2.2

11 / 13

**DuPont™ Suva® 410A Refrigerant**

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SECTION 15. REGULATORY INFORMATION

TSCA	: On the inventory, or in compliance with the inventory
SARA 313 Regulated Chemical(s)	: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
PA Right to Know Regulated Chemical(s)	: Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Difluoromethane
NJ Right to Know Regulated Chemical(s)	: Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Difluoromethane
California Prop. 65	: Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

SECTION 16. OTHER INFORMATION

Suva® is a registered trademark of E. I. du Pont de Nemours and Company

® DuPont's registered trademark

Before use read DuPont's safety information.

For further information contact the local DuPont office or DuPont's nominated distributors.

Revision Date : 03/23/2015

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Significant change from previous version is denoted with a double bar.



DuPont™ Suva® 410A Refrigerant

Version 2.0

Revision Date 03/23/2015

Ref. 130000050990

Safety Data Sheet

Chemical Name: Propane

Synonyms: Dimethylmethane, Liquefied Petroleum Gas (LPG), Sales Propane, Commercial Propane, Refinery Propane, Product Propane (non-odorized)

Section 1 - Chemical Product and Company Identification

Company Information

Ferrellgas (Blue Rhino)

One Liberty Plaza

Liberty, MO 64068

Emergency # 800-424-9300 (CHEMTREC)

General SDS assistance # 855-738-9178 (Ferrellgas Safety Department)

Product Information

Product: Propane (odorized)

Chemical Name: Propane

Chemical Family: Liquefied Petroleum Gas (Paraffinic Hydrocarbons)

Chemical Formula: C₃H₈

Section 2 - Hazards Identification

GHS Classification:

Flammable Gas - Category 1

Gases Under Pressure - Liquefied Gas

GHS LABEL ELEMENTS

Pictogram(s)



Signal Word

Danger

Hazard Statements

H220 - Extremely flammable gas.

H280 - Contains gas under pressure, may explode if heated.

Precautionary Statements

Prevention

P210 - Keep away from heat/sparks/open flames/hot surfaces. No smoking

Response

P376 - Stop leak if safe to do so.

P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381 - Eliminate all ignition sources if safe to do so.

Storage

P403 - Store in a well-ventilated place.

P405 - Store locked up.

P410 - Protect from sunlight.

Disposal

P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

Safety Data Sheet

Material Name: Propane

Section 3 - Composition / Information on Ingredients

CAS #	Component	Percent
74-98-6	Propane	85 - 100
106-97-8	Butane and heavier	0 - 2.5
74-84-0	Ethane	0 - 5
115-07-1	Propylene	0 - 10
75-08-1	Ethyl Mercaptan	0 - 0.0025

Section 4 - First Aid Measures

First Aid: Eyes

Direct contact with liquid propane can result in eye burns.

In case of contact with eyes, hold eyelids open to allow liquid to evaporate and gently flush with lukewarm water.

Cover eyes to protect from light. Seek immediate medical attention.

First Aid: Skin

Direct contact with liquid propane can result in skin burns (frostbite).

Remove contaminated clothing. In case of blistering, frostbite or freeze burns seek immediate medical attention.

First Aid: Ingestion

Risk of ingestion is extremely low. However, if oral exposure occurs, seek immediate medical assistance.

First Aid: Inhalation

This product is classified as a simple asphyxiant. High vapor concentrations may produce a reversible central nervous system depression (anesthesia) and asphyxiation.

Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

Section 5 - Fire Fighting Measures

General Fire Hazards

See Section 9 for Flammability Properties.

Liquid releases flammable vapors at well below ambient temperatures and readily forms a flammable mixture with air. Dangerous fire and explosion hazard when exposed to heat, sparks or flame. Vapors are heavier than air and may travel long distances to a point of ignition and flash back.

Hazardous Combustion Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

Extinguishing Media

Use extinguishing media suitable for the surrounding material, preferably or, any extinguisher suitable for Class B fires, dry chemical, fire fighting foam, CO₂, and other gaseous agents. However, fire should not be extinguished unless flow of gas can be immediately stopped.

Unsuitable Extinguishing Media

None

Safety Data Sheet

Material Name: Propane

Fire Fighting Equipment/Instructions

Gas fires should not be extinguished unless flow of gas can be immediately stopped. Shut off gas source and allow gas to burn out. If spill or leak has not ignited, determine if water spray may assist in dispersing gas or vapor to protect personnel attempting to stop leak. Use water to cool equipment, surfaces and containers exposed to fire and excessive heat. For large fire the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Isolate area, particularly around ends of storage vessels. Let vessel, tank car or container burn unless leak can be stopped. Withdraw immediately in the event of a rising sound from a venting safety device. Large fires typically require specially trained personnel and equipment to isolate and extinguish the fire.

Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing.

Section 6 - Accidental Release Measures

Recovery and Neutralization

Stop the source of the release, if safe to do so.

Materials and Methods for Clean-Up

Do not flush down sewer or drainage systems. Do not touch spilled liquid (frostbite/freeze burn hazard!). Consider the use of water spray to disperse vapors. Isolate the area until gas has dispersed. Ventilate and gas test area before entering.

Emergency Measures

Evacuate nonessential personnel and secure all ignition sources. No road flares, smoking or flames in hazard area. Consider wind direction, stay upwind and uphill, if possible. Evaluate the direction of product travel. Vapor cloud may be white, but color will dissipate as cloud disperses - fire and explosion hazard is still present!

Personal Precautions and Protective Equipment

Do not touch spilled liquid (frostbite/freeze burn hazard!).

Environmental Precautions

Do not flush down sewer or drainage systems.

Prevention of Secondary Hazards

None

Section 7 - Handling and Storage

Handling Procedures

Keep away from flame, sparks, ignition sources and excessive temperatures. Use only in well ventilated areas.

Storage Procedures

Store only in approved containers. Keep away from flame, sparks, excessive temperatures and open flame. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Incompatibilities

Keep away from strong oxidizers, ignition sources and heat. Explosion hazard when exposed to chlorine dioxide. Heating barium peroxide with propane causes violent exothermic reaction. Heated chlorine-propane mixtures are explosive under some conditions.

Safety Data Sheet

Material Name: Propane

Section 8 - Exposure Controls / Personal Protection

Component Exposure Limits

Propane (74-98-6)

ACGIH: 1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)
OSHA: 1000 ppm TWA; 1800 mg/m3 TWA
NIOSH: 1000 ppm TWA; 1800 mg/m3 TWA

Ethane (74-84-0)

ACGIH: 1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)

Propylene (115-07-1)

ACGIH: 500 ppm TWA

Engineering Measures

Use adequate ventilation to keep gas and vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces. Use explosion-proof equipment and lighting in classified/controlled areas.

Personal Protective Equipment: Respiratory

Use a NIOSH approved positive-pressure, supplied air respirator with escape bottle or self-contained breathing apparatus (SCBA) for gas concentrations above occupational exposure limits, for potential for uncontrolled release, if exposure levels are not known, or in an oxygen-deficient atmosphere. CAUTION: Flammability limits (i.e., explosion hazard) should be considered when assessing the need to expose personnel to concentrations requiring respiratory protection.

Personal Protective Equipment: Hands

Use cold-impervious, insulating gloves where contact with liquid may occur.

Personal Protective Equipment: Eyes

Where there is a possibility of liquid contact, wear splash-proof safety glasses and faceshield.

Personal Protective Equipment: Skin and Body

Where contact with liquid may occur, wear appropriate cold insulating protective clothing and faceshield.

Section 9 - Physical & Chemical Properties

Appearance:	Colorless	Odor:	Odorless
Physical State:	Gas	pH:	ND
Max Vapor Pressure:	208 psig @ 100 °F (37.8 °C)	Vapor Density:	1.56 @ 32°F (0°C)
Boiling Point:	-43.8°F (-42.1°C)	Molecular Weight:	44.096
Solubility (H2O):	slight (0.1 to 1.0%)	Specific Gravity:	1.52 (Air = 1)
Expansion Ratio:	1 to 270 (from liquid to gas @ 14.7 psia)	Burning Rate:	ND
Evaporation Rate:	ND	VOC:	ND
Octanol/H2O Coeff.:	ND	Flash Point:	-156°F (-104 °C)
Flash Point Method:	PMCC	Auto Ignition:	842°F (450°C)
Upper Flammability Limit (UFL):	9.6%		
Lower Flammability Limit (LFL):	2.15%		

Safety Data Sheet

Material Name: Propane

Section 10 - Chemical Stability & Reactivity Information

Chemical Stability

This is a stable material.

Hazardous Polymerization

Will not occur.

Conditions to Avoid

Keep away from strong oxidizers, ignition sources and heat.

Incompatible Products

Explosion hazard when exposed to chlorine dioxide. Heating barium peroxide with propane causes violent exothermic reaction. Heated chlorine-propane mixtures are explosive under some conditions.

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke) may be formed during combustion.

Section 11 - Toxicological Information

Acute Toxicity

A: General Product Information

Propane exhibits some degree of anesthetic action and is mildly irritating to the mucous membranes. At high concentrations propane acts as a simple asphyxiant without other significant physiological effects. High concentrations may cause death due to oxygen depletion.

Potential Health Effects: Skin Corrosion Property/Stimulativeness

Vapors are not irritating. Direct contact to skin or mucous membranes with liquefied product or cold vapor may cause freeze burns and frostbite. Contact to mucous membranes with liquefied product may cause frostbite and freeze burns. Signs of frostbite include a change in the color of the skin to gray or white, possibly followed by blistering. Skin may become inflamed and painful.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Vapors are not irritating. However, contact with liquid or cold vapor may cause frostbite, freeze burns, and permanent eye damage.

Potential Health Effects: Ingestion

Ingestion is unlikely. Contact with mucous membranes with liquefied product may cause frostbite and freeze burns.

Potential Health Effects: Inhalation

This product is considered to be non-toxic by inhalation. Inhalation of high concentrations may cause central nervous system depression such as dizziness, drowsiness, headache, and similar narcotic symptoms, but no long-term effects. Numbness, a "chilly" feeling, and vomiting have been reported from accidental exposures to high concentrations. This product is a simple asphyxiant. In high concentrations it will displace oxygen from the breathing atmosphere, particularly in confined spaces. Signs of asphyxiation will be noticed when oxygen is reduced to below 16%, and may occur in several stages. Symptoms may include rapid breathing and pulse rate, headache, dizziness, visual disturbances, mental confusion, incoordination, mood changes, muscular weakness, tremors, cyanosis, narcosis and numbness of the extremities. Unconsciousness leading to central nervous system injury and possibly death will occur when the atmospheric oxygen concentration is reduced to about 6% to 8% or less.

WARNING: The burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

Safety Data Sheet

Material Name: Propane

Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity

This product is not reported to have any mutagenic effects.

Carcinogenicity

A: General Product Information

This product is not reported to have any carcinogenic effects.

Reproductive Toxicity

This product is not reported to have any reproductive toxicity effects.

Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ repeat effects.

Aspiration Respiratory Organs Hazard

This product is not reported to have any aspiration hazard effects.

Section 12 - Ecological Information

Ecotoxicity

A: General Product Information

Liquid release is only expected to cause localized, non-persistent environmental damage, such as freezing.

Biodegradation of this product may occur in soil and water. Volatilization is expected to be the most important removal process in soil and water. This product is expected to exist entirely in the vapor phase in ambient air.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

No ecotoxicity data is available for this product's components.

Persistence/Degradability

No information available.

Bioaccumulation

No information available.

Mobility in Soil

No information available.

Section 13 - Disposal Considerations

Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 14 - Transportation Information

DOT Information

UN #: 1075 or 1978 Hazard Class: 2.1

Shipping Name: Petroleum Gases, Liquefied

Placard:



Safety Data Sheet

Material Name: Propane

Section 15 - Regulatory Information

Regulatory Information

Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Propylene (115-07-1)

SARA 313: 1.0 % de minimis concentration

SARA Section 311/312 – Hazard Classes

Acute Health

--

Chronic Health

--

Fire

X

Sudden Release of Pressure

X

Reactive

--

SARA SECTION 313 - SUPPLIER NOTIFICATION

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372:

INGREDIENT NAME (CAS NUMBER)

Propylene (115-07-1)

CONCENTRATION PERCENT BY VOLUME

30 max

State Regulations

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Propane	74-98-6	No	Yes	Yes	Yes	Yes	Yes
Ethane	74-84-0	No	Yes	Yes	Yes	Yes	Yes
Propylene	115-07-1	Yes	Yes	Yes	Yes	Yes	Yes

Component Analysis - WHMIS IDL

No components are listed in the WHMIS IDL.

Additional Regulatory Information

Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EU
Propane	74-98-6	Yes	DSL	EINECS
Ethane	74-84-0	Yes	DSL	EINECS
Propylene	115-07-1	Yes	DSL	EINECS

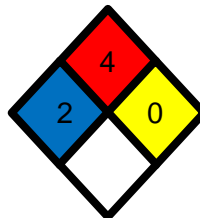
Safety Data Sheet

Material Name: Propane

*** Section 16 - Other Information ***

NFPA® Hazard Rating

Health	2
Fire	4
Reactivity	0



HMIS® Hazard Rating

Health	2	Moderate
Fire	4	Severe
Physical	0	Minimal

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration.; NJTSR = New Jersey Trade Secret Registry; TSCA = Toxic Substance Control Act; EU = European Union; CAN = Canada

Literature References

None

Other Information

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

Issue Information

This Safety Data Sheet supersedes all previous editions.

Issued: January, 2015

Issued by: Ferrellgas Safety Department

Ferrellgas

One Liberty Plaza

Liberty, MO 64068

Ferroclean

Iron Cleaner and Dispersant

PRODUCT BENEFITS

- Cleans iron and manganese deposits from pipes and heat exchangers without the dangers of handling acid
- Removes deposits without damaging base metal

PRODUCT DESCRIPTION

Ferroclean is designed to be used in iron fouled systems, closed chilled water systems, and open recirculating systems for the removal of loosely bound iron from contact surfaces.

Unlike acid cleaners, Ferroclean will attack the deposits, but will not harm the underlying metal.

FEATURES

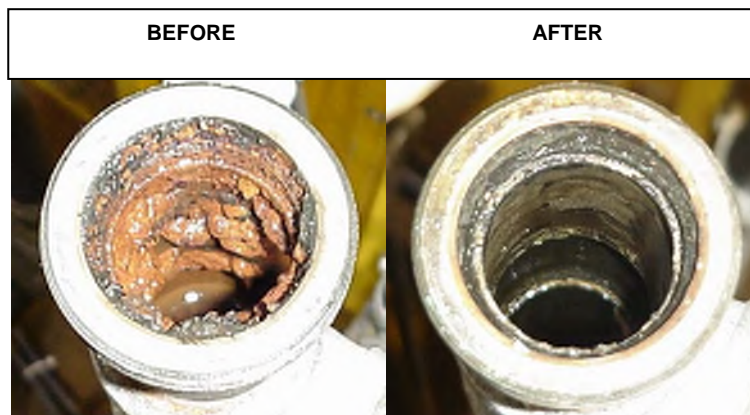
Sequesters Iron and Manganese – Will sequester loosely bound iron and manganese for easy removal.

Disperses Iron – Facilitates the removal of iron and manganese from the system.

Safe- Neutral pH cleaner is safe to handle and easy to dispose of.

Compatibility – Safe for use on mild steel, admiralty brass, copper, copper nickel, stainless steel, titanium and aluminum.

Not safe for galvanized steel.



Ferroclean

Iron Cleaner and Dispersant

DOSAGE

Ferroclean should be added to the cooling system to achieve a dosage of 1000 – 1600 ppm as product. The chemical can be added to any point in the system where good mixing will be achieved.

Ferroclean should be recirculated through the cooling loop and / or heat exchangers for a minimum of 4 hours. A circulation of up to 24 hours is preferred. Ferroclean can be circulated for a maximum of 72 hours. Ferroclean will work in cold water, but warm water will speed the cleaning. A maximum water temperature of 150°F is acceptable.

During the cleaning, you can measure the concentration of Ferroclean using a turbidimetric polymer test. Your U.S. Water representative can help you obtain the test procedure, meter and reagents for this test. The polymer concentration should register between 350 – 550 FAU when the Ferroclean is at the proper dosage. The concentration of iron can also be measured, in order to give a relative indication of the cleaning effectiveness. The HACH Digital Titrator procedure for Iron (Method 8214) is recommended.

A cleaning with Ferroclean should always be followed by passivating the metal of the loop. We recommend draining the loop, and refilling with fresh water. Flush with fresh water until the iron concentration is below 5 ppm.

For passivation, add TowerClean 819 at a dosage of 1600 ppm, which should be circulated for an additional 4 to 48 hours.

After cleaning and passivating the cooling loop, the water should be drained, and the loop should be filled with fresh clean water. Begin treatment with your recommended deposit and inhibitor chemistry immediately.

FEEDING

Ferroclean is most effective when slug fed to any convenient point in the system.

PACKAGING

Ferroclean comes in:

6 Gallon Pail
15 Gallon Drum
30 Gallon Drum
55 Gallon Drum

MATERIAL COMPATIBILITY

Undiluted product is compatible with Brass, Copper, Stainless Steel, Viton, Eurathane, Buna, Hypalon, PVC, EPR, EPDM, Tygon, Kalrez, Viton, Nylon, Polypropylene, and Teflon.

It is not compatible with Mild Steel, and Aluminum.

HANDLING

Please read the label and the Material Safety Data Sheet (MSDS) for complete handling information before using the product.

Store between 40 - 95°F. In these conditions, shelf life is 12 months from manufacture date.

FREMONT

WATER SOLUTIONS

FREMONT 9132 Inhibited Ethylene Glycol

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 06/14/2015 Supersedes: 02/01/2015

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name : FREMONT 9132 Inhibited Ethylene Glycol
Product form : Mixture

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

FREMONT INDUSTRIES, INC
4400 Valley Industrial Blvd. N.
P.O. Box 67
Shakopee, MN 55379-0067

1.4. Emergency telephone number

Emergency number : (952) 445-4121
CHEMTREC: (800) 424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Acute Tox. 4 (Oral) H302

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US)



GHS07

Signal word (GHS-US)

: **Warning**

Hazard statements (GHS-US)

: H302 - Harmful if swallowed

Precautionary statements (GHS-US)

: P264 - Wash skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P330 - If swallowed, rinse mouth
P301+P312 - IF SWALLOWED: call a POISON CENTER or doctor/physician if you feel unwell
P501 - Dispose of contents/container to licensed waste handling facility.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%
Ethylene glycol	(CAS No) 107-21-1	90 - 95

FREMONT 9132 Inhibited Ethylene Glycol

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.
- First-aid measures after skin contact : IF ON SKIN (or clothing), remove affected clothing and wash all exposed skin with water for at least 15 minutes.
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- First-aid measures after ingestion : IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Harmful if swallowed.
- Symptoms/injuries after inhalation : May cause headache, nausea and irritation of respiratory tract.
- Symptoms/injuries after skin contact : May cause skin irritation.
- Symptoms/injuries after eye contact : May cause severe irritation.
- Symptoms/injuries after ingestion : Harmful if swallowed. Severe irritation or burns to the mouth, throat, esophagus, and stomach.
- Chronic symptoms : May cause damage to target organs (kidney, liver) and/or Central Nervous System.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- suitable extinguishing media : Alcohol-resistant foam. Dry powder. Water spray. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : The product is not flammable.
- Explosion hazard : Product is not explosive.
- Reactivity : No dangerous reactions known under normal conditions of use.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Evacuate area. Keep upwind. Spill should be handled by trained clean-up crews properly equipped with respiratory equipment and full chemical protective gear (see Section 8). Ventilate area.

6.1.1. For non-emergency personnel

- Protective equipment : Wear Protective equipment as described in Section 8.
- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Wear suitable protective clothing, gloves and eye or face protection. Approved supplied-air respirator, in case of emergency.

6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

- For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
- Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Place in a suitable container for disposal in accordance with the waste regulations (see Section 13).

6.4. Reference to other sections

No additional information available

FREMONT 9132 Inhibited Ethylene Glycol

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Do not breathe mists. Keep away from sources of ignition - No smoking.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : heat sources. Keep container closed when not in use.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ethylene glycol (107-21-1)	
ACGIH Ceiling (mg/m ³)	100 mg/m ³
OSHA PEL (Ceiling) (mg/m ³)	125 mg/m ³
OSHA PEL (Ceiling) (ppm)	50 ppm

8.2. Exposure controls

Personal protective equipment : Face shield. Gloves. Protective goggles. Protective clothing. Respiratory protection of the dependent type.



Hand protection : Protective gloves made of rubber.

Eye protection : Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles.

Skin and body protection : Wear long sleeves.

Respiratory protection : In case of inadequate ventilation wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear.
Color	: Pink.
Odor	: Mild solvent odor.
Odor Threshold	: No data available
pH	: 9.4 - 11
Relative evaporation rate (butyl acetate=1)	: < 1
Melting point	: No data available
Freezing point	: No data available
Boiling point	: 193 - 205 °C
Flash point	: 111 °C (T.C.C.)
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: < 0.1 mm Hg @ 20°C
Relative vapor density at 20 °C	: 2.2
Relative density	: 1.118
Solubility	: Complete solubility in water
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available

FREMONT 9132 Inhibited Ethylene Glycol

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Oxidizing properties : No data available

Explosive limits : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Thermal decomposition generates : Carbon oxides (CO, CO₂).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if swallowed.

Ethylene glycol (107-21-1)	
LD50 oral rat	4000 mg/kg
LD50 dermal rabbit	9530 µl/kg
ATE (oral)	500.0 mg/kg body weight
Skin corrosion/irritation	: Not classified pH: 9.4 - 11
Serious eye damage/irritation	: Not classified pH: 9.4 - 11
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Symptoms/injuries after inhalation	: May cause headache, nausea and irritation of respiratory tract.
Symptoms/injuries after skin contact	: May cause skin irritation.
Symptoms/injuries after eye contact	: May cause severe irritation.
Symptoms/injuries after ingestion	: Harmful if swallowed. Severe irritation or burns to the mouth, throat, esophagus, and stomach.
Chronic symptoms	: May cause damage to target organs (kidney, liver) and/or Central Nervous System.

SECTION 12: Ecological information

12.1. Toxicity

Ethylene glycol (107-21-1)	
LC50 fish 1	16000 mg/l 96 Hr. Poecilia reticulata; [static]
EC50 Daphnia 1	46300 mg/l 48 Hr. Daphnia magna

12.2. Persistence and degradability

FREMONT 9132 inhibited Ethylene Glycol	
Persistence and degradability	Readily biodegradable

FREMONT 9132 Inhibited Ethylene Glycol

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

12.3. Bioaccumulative potential

FREMONT 9132 Inhibited Ethylene Glycol	
Bioaccumulative potential	Low bioaccumulation potential

12.4. Mobility in soil

FREMONT 9132 Inhibited Ethylene Glycol	
Ecology - soil	No data available

12.5. Other adverse effects

Other adverse effects : No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Do not discharge to public wastewater systems without permit of pollution control authorities. No discharge to surface waters is allowed without an NPDES permit.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

Transport document description – : UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ETHYLENE GLYCOL), 9, PGIII

Only regulated when shipped in Bulk

UN-No.(DOT) : 3082

DOT NA no. : UN3082

14.2. UN proper shipping name

DOT Proper Shipping Name : Environmentally hazardous substance, liquid, n.o.s.
(Ethylene glycol)

Department of Transportation (DOT) Hazard Classes : 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140

Hazard labels (DOT) : 9 - Miscellaneous dangerous compounds



DOT Symbols : G - Identifies PSN requiring a technical name

Packing group (DOT) : III - Minor Danger

14.3. Additional information

Other information : Only regulated when shipped in Bulk

Overland transport

No additional information available

Transport by sea

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel

Air transport

DOT Quantity Limitations Passenger aircraft/rail : No limit
(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : No limit
CFR 175.75)

SECTION 15: Regulatory information

15.1. US Federal regulations

FREMONT 9132 Inhibited Ethylene Glycol	
All chemical substances in this product are listed in the EPA (Environmental Protection Agency) TSCA (Toxic Substances Control Act) Inventory	
SARA Section 311/312 Hazard Classes	immediate (acute) health hazard

FREMONT 9132 Inhibited Ethylene Glycol

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 68 / Monday, March 26, 2012 / Rules and Regulations

Ethylene glycol (107-21-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on SARA Section 313 (Specific toxic chemical listings)	
RQ (Reportable quantity, section 304 of EPA's List of Lists) :	5000 lb
SARA Section 313 - Emission Reporting	1 % de minimus concentration

15.2. International regulations

CANADA

Ethylene glycol (107-21-1)
Listed on the Canadian DSL (Domestic Substances List) inventory.

EU-Regulations

No additional information available

15.2.2. National regulations

Ethylene glycol (107-21-1)
Listed on the AICS (the Australian Inventory of Chemical Substances)
Listed on Inventory of Existing Chemical Substances (IECSC)
Listed on KECI (Chemical Inventory of Korea)
Listed on the Japanese ENCS (Existing & New Chemicals Substances) inventory.

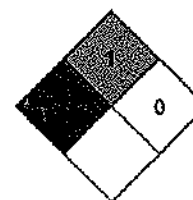
15.3. US State regulations

Ethylene glycol (107-21-1)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

SECTION 16: Other information

Indication of changes	: Revision 1.0 – 30 Dec 2013 - New SDS Created.
Other information	: Author. AM.

NFPA health hazard	: 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
NFPA fire hazard	: 1 - Must be preheated before ignition can occur.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health	: 2
Flammability	: 1
Physical	: 0
Personal Protection	:

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FREMONT

WATER SOLUTIONS

FREMONT 9134 Inhibited Propylene Glycol

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 02/01/2015

Supersedes: 04/05/2005

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name : FREMONT 9134 Inhibited Propylene Glycol

Product form : Mixture

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

FREMONT INDUSTRIES, INC.

4400 Valley Industrial Blvd. N.

P.O. Box 67

Shakopee, MN 55379-0067

1.4. Emergency telephone number

Emergency number : (952) 445-4121
CHEMTREC: (800) 424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Not classified

2.2. Label elements

GHS-US labeling

No labeling applicable

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%
1,2-Propylene glycol	(CAS No) 57-55-6	90 - 95

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general

: If you feel unwell, seek medical advice (show the label where possible). Never give anything by mouth to an unconscious person.

First-aid measures after inhalation

: IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing; Call a POISON CENTER/doctor/physician if you feel unwell.

First-aid measures after skin contact

: IF ON SKIN: Immediately rinse with plenty of water (for at least 15 minutes). Get medical advice/attention.

First-aid measures after eye contact

: IF IN EYES: Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 minutes minimum). Get medical advice/attention.

First-aid measures after ingestion

: IF SWALLOWED: Rinse mouth, Do NOT induce vomiting, Call a POISON CENTER/doctor/physician if you feel unwell.

FREMONT 9134 Inhibited Propylene Glycol

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use. May be slightly irritating to skin and eyes.
- Symptoms/injuries after inhalation : May cause respiratory irritation.
- Symptoms/injuries after skin contact : May cause skin irritation.
- Symptoms/injuries after eye contact : Direct contact with the eyes is likely to be irritating.
- Symptoms/injuries after ingestion : May cause a light irritation of the linings of the mouth, throat, and gastrointestinal tract.
- Chronic symptoms : No data available.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- suitable extinguishing media : Alcohol-resistant foam. Carbon dioxide. Dry powder. Water spray.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Product is not flammable.
- Explosion hazard : Product is not explosive.
- Reactivity : No dangerous reactions known under normal conditions of use.

5.3. Advice for firefighters

- Firefighting instructions : Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Evacuate area. Keep upwind. Spill should be handled by trained clean-up crews properly equipped with respiratory equipment and full chemical protective gear (see Section 8). Ventilate area.

6.1.1. For non-emergency personnel

- Protective equipment : Wear Protective equipment as described in Section 8.
- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Approved supplied-air respirator, in case of emergency. Wear suitable protective clothing, gloves and eye or face protection.

6.2. Environmental precautions

Avoid release to the environment. Notify authorities if liquid enters sewers or public waters. Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

- For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
- Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Place in a suitable container for disposal in accordance with the waste regulations (see Section 13).

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Do not breathe mists. Keep away from sources of ignition - No smoking.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep only in the original container in a cool, well ventilated place away from : heat sources. Keep container closed when not in use.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

FREMONT 9134 Inhibited Propylene Glycol

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

8.2. Exposure controls

Personal protective equipment

Gloves. Protective goggles.



Hand protection

: Protective gloves made of rubber.

Eye protection

: Chemical goggles or safety glasses.

Skin and body protection

: Wear suitable protective clothing. Wear long sleeves

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Yellow.
Odor	: Odorless.
Odor Threshold	: No data available
pH	: 9.4 - 11
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: 187 °C
Flash point	: 103 °C PMCC
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: 0.22 mm Hg @20 °C
Relative vapor density at 20 °C	: No data available
Relative density	: 1.04
Relative gas density	: 2.62
Solubility	: Complete solubility in water.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Thermal decomposition generates : Carbon oxides (CO, CO₂), propanal, propionaldehyde.

FREMONT 9134 Inhibited Propylene Glycol

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified pH: 9.4 - 11
Serious eye damage/irritation	: Not classified pH: 9.4 - 11
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Symptoms/injuries after inhalation	: May cause respiratory irritation.
Symptoms/injuries after skin contact	: May cause skin irritation
Symptoms/injuries after eye contact	: Direct contact with the eyes is likely to be irritating.
Symptoms/injuries after ingestion	: May cause a light irritation of the linings of the mouth, throat, and gastrointestinal tract.
Chronic symptoms	: No data available.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No information available.

12.2. Persistence and degradability

FREMONT 9134 Inhibited Propylene Glycol	
Persistence and degradability	No information available

12.3. Bioaccumulative potential

FREMONT 9134 Inhibited Propylene Glycol	
Bioaccumulative potential	No information available.

12.4. Mobility in soil

FREMONT 9134 Inhibited Propylene Glycol	
Ecology - soil	No data available

12.5. Other adverse effects

Other adverse effects : No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	: Do not discharge to public wastewater systems without permit of pollution control authorities. No discharge to surface waters is allowed without an NPDES permit.
Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Additional information

Other information : No supplementary information available

FREMONT 9134 Inhibited Propylene Glycol

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Overland transport

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

FREMONT 9134 Inhibited Propylene Glycol

All chemical substances in this product are listed in the EPA (Environmental Protection Agency) TSCA (Toxic Substances Control Act) Inventory

SARA Section 311/312 Hazard Classes	None
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15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

15.2.2. National regulations

No additional information available

15.3. US State regulations

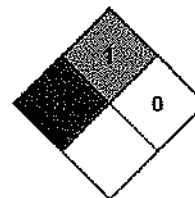
1,2-Propylene glycol (57-55-6)

U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Indication of changes	: Revision 1.0 – 30 Dec 2013 - New SDS Created.
Other information	: Author. AM.

NFPA health hazard	: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard	: 1 - Must be preheated before ignition can occur.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMS III Rating

Health	: 1
Flammability	: 1
Physical	: 0
Personal Protection	:

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FREMONT

WATER SOLUTIONS

FREMONT 9917 Closed System Treatment

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 07/14/2016

Supersedes: 02/01/2015

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name : FREMONT 9917 Closed System Treatment
Product form : Mixture
Other means of identification : Oxidizer

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Closed System Treatment

1.3. Details of the supplier of the safety data sheet

FREMONT INDUSTRIES, INC.
4400 Valley Industrial Blvd. N.
P.O. Box 67
Shakopee, MN 55379-0067

1.4. Emergency telephone number

Emergency number : (952) 445-4121
CHEMTREC: (800) 424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin Irrit. 2 H315
Eye Irrit. 2A H319
Repr. 1B H360

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US)



Signal word (GHS-US)

Danger

Hazard statements (GHS-US)

H315 - Causes skin irritation
H319 - Causes serious eye irritation
H360 - May damage fertility or the unborn child

Precautionary statements (GHS-US)

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P264 - Wash hands, forearms and face, clothing thoroughly after handling
P280 - Wear eye protection, face protection, protective clothing, protective gloves
P302+P352 - If on skin: Wash with plenty of water spray
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308+P313 - If exposed or concerned: Get medical advice/attention
P321 - Specific treatment (see first aid on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P405 - Store locked up
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

No data available

FREMONT 9917 Closed System Treatment

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%
Sodium nitrite	(CAS No) 7632-00-0	5 - 10
Potassium Carbonate	(CAS No) 584-06-7	1 - 5
Boric acid (H ₃ BO ₃), sodium salt, tetrahydrate	(CAS No) 10555-76-7	1 - 5
Potassium hydroxide	(CAS No) 1310-58-3	0.5 - 1.5
1,2,3-Benzotriazole	(CAS No) 95-14-7	0.1 - 1
Tetrasodium EDTA	(CAS No) 64-02-8	0.1 - 1

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general

: If exposed or concerned, get medical attention/advice. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.

First-aid measures after inhalation

: IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if breathing is affected. If breathing is difficult, supply oxygen.

First-aid measures after skin contact

: IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin with water for at least 15 minutes. If irritation develops or persists, get medical attention.

First-aid measures after eye contact

: IF IN EYES: Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do so. If pain, blinking, or irritation develops or persists, get medical attention. Continue rinsing.

First-aid measures after ingestion

: IF SWALLOWED: Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center or medical professional. Get medical attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries

: Causes skin irritation. Causes serious eye irritation. May damage fertility. May damage the unborn child.

Symptoms/injuries after inhalation

: May cause respiratory irritation.

Symptoms/injuries after skin contact

: Causes skin irritation.

Symptoms/injuries after eye contact

: Causes serious eye irritation.

Symptoms/injuries after ingestion

: May cause gastrointestinal irritation.

Chronic symptoms

: May damage fertility. May damage the unborn child.

4.3. Indication of any immediate medical attention and special treatment needed

If conscious, give large amounts of water, citrus juice, or 1:1 vinegar water solution

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

: Use extinguishing media appropriate for surrounding fire. Water spray. Foam. Dry powder. Dry chemical. Alcohol-resistant foam.

Unsuitable extinguishing media

: None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard

: Not flammable.

Explosion hazard

: Product is not explosive.

Reactivity

: The product is non-reactive under normal conditions of use, storage and transport.

5.3. Advice for firefighters

Firefighting instructions

: Use cold water spray to cool fire-exposed containers to minimize risk of rupture. Exercise caution when fighting any chemical fire. Do not dispose of fire-fighting water in the environment. Prevent human exposure to fire, fumes, smoke and products of combustion.

Protection during firefighting

: Do not enter fire area without proper protective equipment, including respiratory protection. Self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures

: Evacuate area. Ventilate area. Keep upwind. Spill should be handled by trained clean-up crews properly equipped with respiratory equipment and full chemical protective gear (see Section 8).

6.1.1. For non-emergency personnel

Protective equipment

: Wear Protective equipment as described in Section 8.

Emergency procedures

: Evacuate unnecessary personnel.

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6.1.2. For emergency responders

Protective equipment : Wear suitable protective clothing, gloves and eye or face protection. Approved supplied-air respirator, in case of emergency.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Avoid release to the environment. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Sweep or shovel spills into appropriate container for disposal.

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Neutralize residue with weak acid and flush to drain with plenty of water. Product may create slip hazard. Wash spill area thoroughly with plenty of soap and water. If slipperiness remains, apply additional dry-sweeping compound. Place in a suitable container for disposal in accordance with the waste regulations (see Section 13).

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Provide good ventilation in process area to prevent formation of vapour. Do not breathe vapours, mist. Avoid spilling the product, as this might cause danger of slippage and falls. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep container tightly closed.

Storage temperature : Room Temperature

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Potassium hydroxide (1310-58-3)	
ACGIH Ceiling (mg/m ³)	2 mg/m ³
OSHA PEL (Ceiling) (mg/m ³)	2 mg/m ³ vacated
Sodium nitrite (7632-00-0)	
Remark (ACGIH)	OELs not established
Remark (OSHA)	OELs not established
Boric acid (HBO₂), sodium salt, tetrahydrate (10555-76-7)	
Remark (ACGIH)	OELs not established
Remark (OSHA)	OELs not established
1,2,3-Benzotriazole (95-14-7)	
Remark (ACGIH)	OELs not established
Remark (OSHA)	OELs not established
Tetrasodium EDTA (64-02-8)	
Remark (ACGIH)	OELs not established
Remark (OSHA)	OELs not established

8.2. Exposure controls

Appropriate engineering controls

: Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment with flammable materials. Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

: Protective clothing. Safety glasses. Gloves.



Hand protection

: Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Change contaminated gloves immediately. Gloves should be classified under Standard EN 374 or ASTM F1296. Suitable gloves for this specific application can be recommended by the glove supplier. Suggested glove materials are: Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, PVC or vinyl.

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Eye protection	: Wear eye protection, including chemical splash goggles and a face shield when possibility exists for eye contact due to spraying liquid or airborne particles.
Skin and body protection	: Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.
Respiratory protection	: Use NIOSH-approved dust/particulate respirator. Where vapor, mist, or dust exceed PELs or other applicable OELs, use NIOSH-approved respiratory protective equipment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties	
Physical state	: Liquid
Appearance	: Yellow/amber liquid.
Color	: Yellow/amber.
Odor	: None.
Odor Threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: Not Established
Melting point	: Not Established
Freezing point	: No data available
Boiling point	: $\approx 100^{\circ}\text{C}$ (212 $^{\circ}\text{F}$)
Flash point	: Nonflammable (T.C.C.)
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: Not Established
Relative vapour density at 20 $^{\circ}\text{C}$: Not Established
Relative density	: 1.11 (H ₂ O=1)
Solubility	: Complete solubility in water.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

Contact with certain metals.

10.5. Incompatible materials

Chlorates. Hyposulfites. Permanganate. Reducing agents. Ammonium compounds.

10.6. Hazardous decomposition products

Nitrogen oxides. Carbon oxides (CO, CO₂). Sulfur oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Not classified.

Potassium hydroxide (1310-58-3)	
ATE CLP (oral)	500.000 mg/kg bodyweight
Sodium nitrite (7632-00-0)	
LD50 oral rat	85 mg/kg (Source: IUCLID)
LC50 inhalation rat (mg/l)	5.5 mg/l/4h (Source: IUCLID)

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Sodium nitrite (7632-00-0)	
ATE CLP (oral)	85.000 mg/kg bodyweight
ATE CLP (vapours)	5.500 mg/l/4h
ATE CLP (dust,mist)	5.500 mg/l/4h
Potassium Carbonate (584-08-7)	
LD50 oral rat	1870 mg/kg
1,2,3-Benzotriazole (95-14-7)	
LD50 oral rat	500 - 965 mg/kg
LC50 Inhalation rat (mg/l)	1910 mg/m³ 3 h
Tetrasodium EDTA (64-02-8)	
LD50 oral rat	1658 mg/kg
Sodium hydroxide (1310-73-2)	
LD50 dermal rabbit	1350 mg/kg
Sodium tetraborate decahydrate (1303-96-4)	
LD50 oral rat	5.66 g/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 Inhalation rat (mg/l)	> 2 g/m³ 4h

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: May damage fertility or the unborn child.
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Symptoms/injuries after inhalation	: May cause respiratory irritation.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
Symptoms/injuries after ingestion	: May cause gastrointestinal irritation.
Chronic symptoms	: May damage fertility. May damage the unborn child.

SECTION 12: Ecological information

12.1. Toxicity

Sodium nitrite (7632-00-0)	
LC50 fishes 1	0.19 mg/l 96 Hr Oncorhynchus mykiss [flow-through] (juvenile)
LC50 fish 2	0.092 - 0.13 mg/l 96 Hr Oncorhynchus mykiss [flow-through]

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	: Do not discharge to public wastewater systems without permit of pollution control authorities. No discharge to surface waters is allowed without an NPDES permit.
Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment.

FREMONT 9917 Closed System Treatment

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 14: Transport information

In accordance with DOT

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Additional information

Other information : No supplementary information available.

Overland transport

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

FREMONT 9917 Closed System Treatment

All components of this product are listed on the TSCA Inventory or are exempt

SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
Potassium hydroxide (1310-58-3)	

Section 302 (EHS) TPQ

Section 304 EHS RQ

CERCLA RQ

1000

Section 313

Not Listed on US SARA Section 313

Sodium nitrite (7632-00-0)

Section 302 (EHS) TPQ

Section 304 EHS RQ

CERCLA RQ

100 lbs

Section 313

Listed on US SARA Section 313

Sodium hydroxide (1310-73-2)

Section 302 (EHS) TPQ

Section 304 EHS RQ

CERCLA RQ

1000 lbs

Section 313

Not Listed on US SARA Section 313

15.2. International regulations

No additional information available

15.2.2. National regulations

15.3. US State regulations

Potassium hydroxide (1310-58-3)

State or local regulations

RTK - U.S. - Massachusetts - Right To Know List

RTK - U.S. - New Jersey - Right to Know Hazardous Substance List

RTK - U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

Sodium nitrite (7632-00-0)

State or local regulations

RTK - U.S. - Massachusetts - Right To Know List

RTK - U.S. - New Jersey - Right to Know Hazardous Substance List

RTK - U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

1,2,3-Benzothiazole (95-14-7)

State or local regulations

RTK - U.S. - Massachusetts - Right To Know List

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Sodium hydroxide (1310-73-2)

State or local regulations

RTK - U.S. - Massachusetts - Right To Know List
RTK - U.S. - New Jersey - Right to Know Hazardous Substance List
RTK - U.S. - Pennsylvania - RTK (Right to Know) List

Sodium tetraborate decahydrate (1303-96-4)

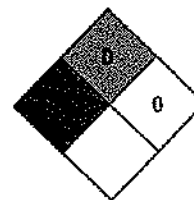
State or local regulations

RTK - U.S. - Massachusetts - Right To Know List
RTK - U.S. - New Jersey - Right to Know Hazardous Substance List
RTK - U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Indication of changes : Appearance & Color were updated in Section 9.
Revision date : 07/14/2016
Other information : Author: BB.

NFPA health hazard : 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.
NFPA fire hazard : 0 - Materials that will not burn.
NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMS III Rating

Health : 3
Flammability : 0
Physical : 0
Personal Protection : Splash goggles, Gloves, Synthetic apron, Dust & vapor respirator

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FREMONT

WATER SOLUTIONS

FREMONT 8815 System Preclean Treatment

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 02/01/2015

Supersedes: 05/31/2005

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name

: Fremont 8815 System Preclean Treatment

Product form

: Mixture

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture

: Caustic Soda

1.3. Details of the supplier of the safety data sheet

FREMONT INDUSTRIES, INC.

4400 Valley Industrial Blvd. N.

P.O. Box 67

Shakopee, MN 55379-0067

1.4. Emergency telephone number

Emergency number

: (952) 445-4121

CHEMTREC: (800) 424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin Irrit. 2 H315

Eye Irrit. 2A H319

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US)



GHS07

Signal word (GHS-US)

: **Warning**

Hazard statements (GHS-US)

: H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary statements (GHS-US)

: P264 - Wash hands, forearms and face thoroughly after handling
P280 - Wear eye protection, protective gloves
P302+P352 - If on skin: Wash with plenty of Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P321 - Specific treatment (see Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

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3.2. Mixture

Name	Product identifier	%
Trisbasic sodium phosphate dodecahydrate	(CAS No) 10101-89-0	10 - 30
Potassium Carbonate	(CAS No) 584-08-7	10 - 30
Tetrasodium EDTA	(CAS No) 64-02-8	1 - 5
Sodium nitrate	(CAS No) 7631-99-4	1 - 5
Sodium hydroxide	(CAS No) 1310-73-2	0.1 - 1

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : If exposed or concerned, get medical attention/advice. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.
- First-aid measures after inhalation : IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if breathing is affected. If breathing is difficult, supply oxygen.
- First-aid measures after skin contact : IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin with water for at least 15 minutes. If irritation develops or persists, get medical attention.
- First-aid measures after eye contact : IF IN EYES: Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do so. If pain, blinking, or irritation develops or persists, get medical attention. Continue rinsing.
- First-aid measures after ingestion : IF SWALLOWED: rinse mouth thoroughly. Do not induce vomiting without advice from poison control center or medical professional. Get medical attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Causes skin irritation. Causes serious eye irritation.
- Symptoms/injuries after inhalation : May cause respiratory irritation.
- Symptoms/injuries after skin contact : Causes skin irritation.
- Symptoms/injuries after eye contact : Causes serious eye irritation.
- Symptoms/injuries after ingestion : May cause gastrointestinal irritation.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Carbon dioxide. Foam. Dry powder. Sand. Water spray.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : The product is not flammable.
- Explosion hazard : Product is not explosive.
- Reactivity : No data available.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not dispose of fire-fighting water in the environment. Prevent human exposure to fire, fumes, smoke and products of combustion.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Evacuate area. Keep upwind. Ventilate area. Spill should be handled by trained clean-up crews properly equipped with respiratory equipment and full chemical protective gear (see Section 8).

6.1.1. For non-emergency personnel

- Protective equipment : Wear Protective equipment as described in Section 8.
- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Wear suitable protective clothing, gloves and eye or face protection. Approved supplied-air respirator, in case of emergency.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Sweep or shovel spills into appropriate container for disposal.

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Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Methods for cleaning up

Product may create slip hazard. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Wash spill area thoroughly with plenty of soap and water. If slipperiness remains, apply additional dry-sweeping compound. Place in a suitable container for disposal in accordance with the waste regulations (see Section 13).

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling

Do not handle until all safety precautions have been read and understood. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Do not breathe vapors. Keep away from sources of ignition - No smoking. Avoid spilling the product, as this might cause danger of slippage and falls.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions

Store in dry, well-ventilated area. Keep container closed when not in use.

Storage temperature

Room temperature

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Sodium hydroxide (1310-73-2)	
ACGIH Ceiling (mg/m ³)	2
OSHA PEL (TWA) (mg/m ³)	2
OSHA PEL (Ceiling) (mg/m ³)	2

8.2. Exposure controls

Appropriate engineering controls

Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment with flammable materials. Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Gloves. Protective goggles. Wear chemically impervious apron over lab coat and full coverage clothing.



Hand protection

Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Gloves should be classified under Standard EN 374 or ASTM F1296. Suggested glove materials are: Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, PVC or vinyl. Suitable gloves for this specific application can be recommended by the glove supplier.

Eye protection

Wear eye protection, including chemical splash goggles and a face shield when possibility exists for eye contact due to spraying liquid or airborne particles.

Skin and body protection

Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.

Respiratory protection

Use NIOSH-approved dust/particulate respirator. Where vapor, mist, or dust exceed PELs or other applicable OELs, use NIOSH-approved respiratory protective equipment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Liquid

Appearance

Green to yellow, watery liquid.

Color

Clear. Green.

Odor

No data available

Odor Threshold

No data available

pH

No data available

Relative evaporation rate (butylacetate=1)

No data available

Melting point

No data available

Freezing point

No data available

Boiling point

> 100 °C (212 °F)

Flash point

No data available

Auto-ignition temperature

No data available

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Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: 1.26
Solubility	: Water: 100 %
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Strong acids. Oxidizing agent.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO₂). Nitrogen oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Tetrasodium EDTA (64-02-8)	
LD50 oral rat	10 g/kg
Sodium hydroxide (1310-73-2)	
LD50 dermal rabbit	1350 mg/kg
Potassium Carbonate (584-08-7)	
LD50 oral rat	1270 mg/kg
Sodium nitrate (7631-99-4)	
LD50 oral rat	1267 mg/kg

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Symptoms/injuries after inhalation	: May cause respiratory irritation.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
Symptoms/injuries after ingestion	: May cause gastrointestinal irritation.

FREMONT 8815 System Preclean Treatment

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 68 / Monday, March 26, 2012 / Rules and Regulations

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No information available.

12.2. Persistence and degradability

Fremont 8815 System Preclean Treatment

Persistence and degradability : No information available.

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Do not discharge to public wastewater systems without permit of pollution control authorities.
No discharge to surface waters is allowed without an NPDES permit.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment.

SECTION 14: Transport information

In accordance with DOT

Not hazardous for transport

Additional information

Other information : No supplementary information available.

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Fremont 8815 System Preclean Treatment

All chemical substances in this product are listed in the EPA (Environment Protection Agency) TSCA (Toxic Substances Control Act) inventory

SARA Section 311/312 Hazard Classes : Immediate (acute) health hazard

Sodium hydroxide (1310-73-2)

RQ (Reportable quantity, section 304 of EPA's List of Lists) : 1000 lb

Tribasic sodium phosphate dodecahydrate (10101-89-0)

RQ (Reportable quantity, section 304 of EPA's List of Lists) : 5000 lb

15.2. International regulations

CANADA

No additional information available

15.3. US State regulations

California Proposition 65

This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

Sodium hydroxide (1310-73-2)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Tribasic sodium phosphate dodecahydrate (10101-89-0)

U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) List

FREMONT 8815 System Preclean Treatment

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Sodium nitrate (7631-99-4)

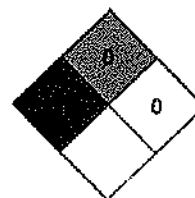
U.S. - Massachusetts - Right To Know List

U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Indication of changes : Revision 1.0: New SDS Created.
Revision date : 12/08/2014
Other information : Author: BCS.

NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard : 0 - Materials that will not burn.
NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health : 1
Flammability : 0
Physical : 0
Personal Protection :

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FREMONT

WATER SOLUTIONS

FREMONT 9106 Cooling Water Dispersant

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 02/01/2015

Supersedes: 01/28/2009

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name : FREMONT 9106 Cooling Water Dispersant

Product form : Mixture

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Cooling Water Treatment

1.3. Details of the supplier of the safety data sheet

FREMONT INDUSTRIES, INC.
4400 Valley Industrial Blvd. N.
P.O. Box 67
Shakopee, MN 55379-0067

1.4. Emergency telephone number

Emergency number : (952) 445-4121
CHEMTREC: (800) 424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Skin Irrit. 2 H315

Eye Irrit. 2A H319

Skin Sens. 1 H317

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation

Precautionary statements (GHS-US) :

P261 - Avoid breathing vapors, spray, mist
P264 - Wash skin thoroughly after handling
P272 - Contaminated work clothing must not be allowed out of the workplace
P280 - Wear protective gloves, protective clothing, face shield, eye protection
P302 + P352 - If on skin: Wash with plenty of water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P321 - Specific treatment (see first aid instructions on this label)
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P337 + P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P501 - Dispose of contents/container to licensed waste handling facility

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

FREMONT 9106 Cooling Water Dispersant

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%
2,4-Pentanediol, 2-methyl-	(CAS No) 107-41-5	30 - 60
Proprietary ingredient*	(CAS No) Trade Secret	< 10

*The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §29 CFR 1910.1200

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
- First-aid measures after skin contact : IF ON SKIN: Immediately rinse with plenty of water (for at least 15 minutes). Get medical advice/attention.
- First-aid measures after eye contact : IF IN EYES: Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 minutes minimum). Get medical advice/attention.
- First-aid measures after ingestion : IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction.
- Symptoms/injuries after inhalation : May cause headache, nausea and irritation of respiratory tract. May cause an allergic skin reaction.
- Symptoms/injuries after skin contact : Causes skin irritation. Prolonged or repeated contact may result in irritative or allergic dermatitis.
- Symptoms/injuries after eye contact : Causes eye irritation.
- Symptoms/injuries after ingestion : May cause gastrointestinal irritation, nausea, vomiting, and diarrhea if swallowed.
- Chronic symptoms : No data available.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray. Carbon dioxide. Alcohol-resistant foam. Dry powder.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Product is not flammable.
- Explosion hazard : Product is not explosive.
- Reactivity : No dangerous reactions known under normal conditions of use.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not dispose of fire-fighting water in the environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Evacuate area. Keep upwind. Ventilate area. Spill should be handled by trained clean-up crews properly equipped with respiratory equipment and full chemical protective gear (see Section 8).

6.1.1. For non-emergency personnel

- Protective equipment : Wear Protective equipment as described in Section 8.
- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Wear suitable protective clothing, gloves and eye or face protection. Approved supplied-air respirator, in case of emergency

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment

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6.3. Methods and material for containment and cleaning up

- For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
- Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Place in a suitable container for disposal in accordance with the waste regulations (see Section 13).

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Do not breathe vapor or mists. Keep away from sources of ignition - No smoking.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Heat sources. Keep container closed when not in use.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

2,4-Pentanediol, 2-methyl- (107-41-5)	
ACGIH Ceiling (ppm)	25 ppm
OSHA PEL (Ceiling) (mg/m ³)	125 mg/m ³
OSHA PEL (Ceiling) (ppm)	25 ppm

8.2. Exposure controls

- Personal protective equipment : Safety glasses. Gloves.



- Hand protection : Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Suggested glove materials are: Natural rubber ("latex"), Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, PVC or vinyl.
- Eye protection : Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles.
- Skin and body protection : Corrosionproof clothing.
- Respiratory protection : Where excessive vapor, mist, or dust may result, use approved NIOSH respiratory protection equipment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Liquid
- Color : Amber.
- Odor : Ammonia-like.
- Odor Threshold : No data available
- pH : 8 - 9
- Relative evaporation rate (butyl acetate=1) : No data available
- Melting point : No data available
- Freezing point : No data available
- Boiling point : 100 °C (212°F)
- Flash point : 121 °C (250°F)
- Auto-ignition temperature : No data available
- Decomposition temperature : No data available
- Flammability (solid, gas) : No data available
- Vapor pressure : No data available
- Relative vapor density at 20 °C : No data available

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Relative density	: 0.97 (H ₂ O)=1
Solubility	: Emulsifiable.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Strong acids.

10.6. Hazardous decomposition products

Thermal decomposition generates : Acrylic monomers and monomer vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

2,4-Pentanedioic acid, 2-methyl- (107-41-5)	
LD50 oral rat	3682 mg/kg 1 h; (Source: IUCLID)
LC50 inhalation rat (mg/l)	> 310 mg/m ³ 1 h; (Source: IUCLID)
Skin corrosion/irritation	: Causes skin irritation. pH: 8 - 9
Serious eye damage/irritation	: Causes serious eye irritation. pH: 8 - 9
Respiratory or skin sensitization	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Symptoms/injuries after inhalation	: May cause headache, nausea and irritation of respiratory tract. May cause an allergic skin reaction.
Symptoms/injuries after skin contact	: Causes skin irritation. Prolonged or repeated contact may result in irritative or allergic dermatitis.
Symptoms/injuries after eye contact	: Causes eye irritation.
Symptoms/injuries after ingestion	: May cause gastrointestinal irritation, nausea, vomiting, and diarrhea if swallowed.
Chronic symptoms	: No data available.

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SECTION 12: Ecological information

12.1. Toxicity

Ecology - general

Toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods

: Do not discharge to public wastewater systems without permit of pollution control authorities. No discharge to surface waters is allowed without an NPDES permit.

Waste disposal recommendations

: Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment.

SECTION 14: Transport information

In accordance with DOT

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Additional information

Other information

: No supplementary information available.

Overland transport

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

FREMONT 9106 Cooling Water Dispersant

All chemical substances in this product are listed in the EPA (Environmental Protection Agency) TSCA (Toxic Substances Control Act) inventory

SARA Section 311/312 Hazard Classes

Immediate (acute) health hazard

2,4-Pentanediol, 2-methyl- (107-41-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

2,4-Pentanediol, 2-methyl- (107-41-5)

Listed on the Canadian DSL (Domestic Substances List) inventory.

15.2.2. National regulations

2,4-Pentanediol, 2-methyl- (107-41-5)

Listed on the AICS (the Australian Inventory of Chemical Substances)

Listed on Inventory of Existing Chemical Substances (IECSC)

Listed on the Japanese ENCS (Existing & New Chemicals Substances) inventory.

Listed on KECI (Chemical Inventory of Korea)

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15.3. US State regulations

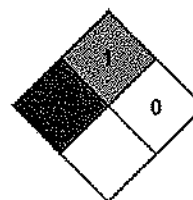
2,4-Pentenediol, 2-methyl- (107-41-5)

RTK - U.S. - Massachusetts - Right To Know List
RTK - U.S. - New Jersey - Right to Know Hazardous Substance List
RTK - U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Indication of changes : Revision 1.0: New SDS Created.
Revision date : 05/27/2014
Other information : Author: BAS.

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given
NFPA fire hazard : 1 - Must be preheated before ignition can occur.
NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water



HMIS III Rating

Health : 2
Flammability : 1
Physical : 0
Personal Protection :

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SAFETY DATA SHEET

Section 1. IDENTIFICATION

Product Identifier

Product Name GASOILA® SOFT SET.

Other means of Identification

Product Code SS01, SS02, SS04, SS08, SS16, SS32, SB32, SS28..

Recommended Use Pipe Thread Sealant.

Recommended Restrictions None Known.

Manufacturer

Company Name Federal Process Corporation
Address 4520 Richmond Road
Cleveland OH 44128
Telephone 1-800-846-7325

Emergency Telephone Number: Call Chemtrec at 1-800-424-9300

Section 2. HAZARDS IDENTIFICATION

PHYSICAL STATE: Liquid

Classification:

Flammable	Category 3
Serious eye damage/eye irritation	Category 2
Skin sensitization	Category 1

Signal Word:

Warning



Hazard Statements:

H226 - Flammable liquid and vapor.
H302 – Harmful if swallowed.
H319 – Causes serious eye irritation.
H317 – May cause an allergic skin reaction

Revised: 1st July, 2016
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Precautionary Statements:

GASOILA®SOFT SET

Prevention:

P210 – Keep away heat, sparks, open flames, and hot surfaces. No smoking.
P261 – Avoid breathing dust/fume/gas/mist/vapors/spray.
P272 – Contaminated clothing should not be allowed out of the workplace.

Response:

P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301 + P331 + P310 – IF SWALLOWED: Do NOT induce vomiting. Immediately call POISON CENTER or doctor/physician.

P337 + P313 – If eye irritation persists: Get medical advice/attention.

P332 + P313 – If skin irritation or rash occurs: Get medical advice/attention.

Disposal:

P501- Dispose of contents/container to an approved waste disposal plant.

Other Hazards:

Toxic to aquatic life with long lasting effects.

Unknown Acute Toxicity:

2% of the mixture consists of ingredient(s) of unknown toxicity.

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Weight %
Isopropyl alcohol	67-63-0	<8.0
2 butoxyethanol	111-76-2	<5.0

Section 4. FIRST AID MEASURES

First Aid Measures:

Eye Contact

Rinse thoroughly with plenty of water, for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

Skin Contact

If skin irritation occurs, rinse affected area with water. If skin irritation or rash occurs: Get medical advice/attention.

Inhalation

Remove to fresh air. If signs/symptoms continue, get medical attention. Give oxygen or artificial respiration as needed.

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Ingestion Do NOT induce vomiting Get medical attention immediately. Rinse mouth with water. Never give anything by mouth to an unconscious individual.

Most Important Symptoms and effects:

Symptoms Direct contact with eyes may cause temporary irritation.
Do NOT ingest.

Section 5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Use foam, dry chemical, carbon dioxide or water fog.

Unsuitable Extinguishing Media: Not determined.

Specific Hazards Arising from the Chemical:
Carbon oxides expected to be the primary hazardous combustion product.

Protective Equipment and Precautions for Firefighters:
As in any fire, wear self-contained breathing apparatus and other protective clothing.
(approved or equivalent) and full protective gear.

Section 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

Personal Precautions: Use personal protective equipment as required. Keep unnecessary personnel away.

Methods and Material for Containment and Cleaning Up:

Methods for Containment: Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up: Keep in suitable, closed containers for disposal.

Section 7. HANDLING AND STORAGE

Precautions for Safe Handling:

Advice on Safe Handling: Avoid breathing vapors or mists. Contaminated work-clothing should not be allowed out of the workplace.

Conditions for Safe Storage, including
Any Incompatibilities:

Storage Conditions: Keep containers tightly closed in a dry, cool and well-ventilated place.
Do not store near heat, sparks, or open flames.
KEEP OUT OF REACH OF CHILDREN.

Incompatible Materials: None known based on information supplied.

Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

Chemical Name	ACGIH TWA	ACGIH STEL	OSHA TWA
Isopropyl alcohol (CAS 67-63-0)	200 ppm	400 ppm	400 ppm
2 butoxyethanol (CAS 111-76-2)	20 ppm	200 mg/g	x

Appropriate Engineering Controls:

Engineering Controls: Apply technical measures to comply with the occupational exposure limits.

Individual Protection Measures, such as
Personal Protective Equipment:

Eye/Face Protection: Avoid contact with eyes.

Skin and Body Protection: No protective equipment is needed under normal use conditions.

Respiratory Protection: Ensure adequate ventilation, especially in confined areas. If confined in poorly ventilated areas use NIOSH/MSHA

General Hygiene Considerations: Handle in accordance with good industrial hygiene and safety practice. Wash exposed areas thoroughly before eating, drinking, smoking or leaving work area. Launder contaminated clothing before reusing.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State:	Liquid.	Odor:	Mild alcoholic.
Appearance:	Viscous liquid.	Odor Threshold:	Not available.
Color:	Blue green.		

<u>Property</u>	<u>Values</u>
pH	N/A
Melting Point/Freezing Point	Not determined.
Boiling Point/Boiling Range	Not determined.

Flash Point	98F (37C) Closed Cup.
Evaporation Rate	Not determined.
Flammability (Solid, Gas)	n/a-liquid
Upper Flammability Limit	Not determined.
Lower Flammability Limit	Not determined.
Vapor Pressure	Not determined.
Vapor Density	Not determined.
Specific Gravity	1.44
Water Solubility	None.
Solubility in other Solvents	Not determined.
Partition Coefficient (n-octanol/water)	Not determined.
Auto-ignition Temperature	Not determined.
Decomposition Temperature	Not determined.
Kinematic Viscosity	Not determined.
Explosive Properties	Not determined.
Oxidizing Properties	Not determined

Section 10. STABILITY AND REACTIVITY

<u>Reactivity:</u>	Not reactive under normal conditions.
<u>Chemical Stability:</u>	Stable under recommended storage conditions.
<u>Possibility of Hazardous Reactions:</u>	None under normal processing.
<u>Conditions to Avoid:</u>	Keep out of reach of children.
<u>Incompatible Materials:</u>	None known.
<u>Hazardous Decomposition Products:</u>	Oxides of carbon.

Section 11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure:

Eye Contact:	Causes serious eye irritation.
Skin Contact:	May cause an allergic skin reaction.

Inhalation: Avoid breathing vapors or mists.

Ingestion: Do not taste or swallow.

Component Information:

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Isopropyl alcohol (67-63-0)	4,396 mg/kg (Rat) 3,600 mg/kg (Mouse)	12,870 mg/kg (Rabbit)	19,600 ppm (Rat)
2 butoxyethanol (111-76-2)	1,300mg/g (Rat) 1,400 mg/g (Guinea Pig)	>2,000 mg/g (Rat) >2,000 mg/g (Guinea Pig)	>4.9 mg/L (Rat 3 h) >3.4 mg/L (Guinea Pig 1h)

Information on physical, chemical and toxicological effects:

Symptoms: Please section 4 of this SDS for symptoms.

Delayed and Immediate Effects as Well as Chronic Effects From Short and Long Term Exposure:

Sensitization: May cause an allergic skin reaction.

Carcinogenicity: Not classifiable as a human carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Isopropyl alcohol (67-63-0)	NO	NO	NO	NO
2 butoxyethanol (111-76-2)	NO	NO	NO	NO

Legend

IARC (International Agency for Research on Cancer).

Group3 IARC components are “not classifiable as human carcinogens”.

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Numerical Measures of Toxicity:

Not Determined.

Section 12. ECOLOGICAL INFORMATION

Ecotoxicity:

Toxic to aquatic life with lasting effects.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
Isopropyl alcohol (67-63-0)	EC50/72 hours Scenedesmus subspicatus >1,000 mg/L	LC50/96 hours Pimephales promelas: 9,640 mg/L	EC50/3 hours Activated sludge >1,000 mg/L	N/A
2 butoxyethanol (111-76-2)	EC50 Algae (Pseudokircheriella subcapitata, 72h) 1,840 mg/L	LC50/96 hours Oncorhynchus mykiss, 1,474 mg/L		

Persistence/Degradability:

Not determined.

Bioaccumulation:

Not determined.

Mobility:

Not determined.

Other Adverse Effects:

Not determined.

Section 13. DISPOSAL CONSIDERATIONS

Waste Treatment Method:

Disposal of Wastes:

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging:

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14. TRANSPORT INFORMATION

DOT:

Consumer Commodity ORM-D.

PROPER SHIPPING NAME:

Consumer Commodity ORM-D.

IATA:

ID8000 Consumer Commodity.

IMDG:

FLAMMABLE LIQUID N.O.S. (contains Alcohol) 3

IDENTIFICATION NUMBER:

UN1993, III

Section 15. REGULATORY INFORMATION

International Inventories: Not determined.

U.S. Federal Regulations: Not determined.

SARA Title 313: Not determined.

U.S. State Regulations:

U.S Right-to-Know Regulations: Not determined.

GASOILA®SOFT SET

Section 16. OTHER INFORMATION

NFPA:	Health Hazards 1	Flammability 2	Instability 0	Special Hazards Not determined
HMIS	Health Hazards 1	Flammability 2	Instability 0	Special Hazards Not determined

Issue Date: 1st March 2014

Revision Date: 1st July 2016

DISCLAIMER:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

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Safety Data Sheet

Material Name: Gasoline All Grades

SDS No. 9950
US GHS

Synonyms: Hess Conventional (Oxygenated and Non-oxygenated) Gasoline; Reformulated Gasoline (RFG); Reformulated Gasoline Blendstock for Oxygenate Blending (RBOB); Unleaded Motor or Automotive Gasoline

*** Section 1 - Product and Company Identification ***

Manufacturer Information

Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095-0961

Phone: 732-750-6000 Corporate EHS
Emergency # 800-424-9300 CHEMTREC
www.hess.com (Environment, Health, Safety Internet Website)

*** Section 2 - Hazards Identification ***

GHS Classification:

Flammable Liquid - Category 2
Skin Corrosion/Irritation - Category 2
Germ Cell Mutagenicity - Category 1B
Carcinogenicity - Category 1B
Toxic to Reproduction - Category 1A
Specific Target Organ Toxicity (Single Exposure) - Category 3 (respiratory irritation, narcosis)
Specific Target Organ Toxicity (Repeat Exposure) - Category 1 (liver, kidneys, bladder, blood, bone marrow, nervous system)
Aspiration Hazard - Category 1
Hazardous to the Aquatic Environment – Acute Hazard - Category 3

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

DANGER

Hazard Statements

Highly flammable liquid and vapour.
Causes skin irritation.
May cause genetic defects.
May cause cancer.
May damage fertility or the unborn child.
May cause respiratory irritation.
May cause drowsiness or dizziness.
Causes damage to organs (liver, kidneys, bladder, blood, bone marrow, nervous system) through prolonged or repeated exposure.
May be fatal if swallowed and enters airways.
Harmful to aquatic life.

Safety Data Sheet

Material Name: Gasoline All Grades

SDS No. 9950

Precautionary Statements

Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash hands and forearms thoroughly after handling.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe mist/vapours/spray.
Use only outdoors or in well-ventilated area.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.

Response

In case of fire: Use water spray, fog, dry chemical fire extinguishers or hand held fire extinguisher.
IF ON SKIN (or hair): Wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing and wash before reuse. If skin irritation occurs, get medical advice/attention.
IF exposed or concerned: Get medical advice/attention.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Get medical advice/attention if you feel unwell.
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting.

Storage

Store in a well-ventilated place.
Keep cool. Keep container tightly closed.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

* * * Section 3 - Composition / Information on Ingredients * * *

CAS #	Component	Percent
86290-81-5	Gasoline, motor fuel	100
108-88-3	Toluene	1-25
106-97-8	Butane	<10
1330-20-7	Xylenes (o-, m-, p- isomers)	1-15
95-63-6	Benzene, 1,2,4-trimethyl-	<6
64-17-5	Ethyl alcohol	0-10
100-41-4	Ethylbenzene	<3
71-43-2	Benzene	0.1-4.9

Safety Data Sheet

Material Name: Gasoline All Grades

SDS No. 9950

110-54-3	Hexane	0.5-4
----------	--------	-------

A complex blend of petroleum-derived normal and branched-chain alkane, cycloalkane, alkene, and aromatic hydrocarbons. May contain antioxidant and multifunctional additives. Non-oxygenated Conventional Gasoline and RBOB do not have oxygenates (Ethanol). Oxygenated Conventional and Reformulated Gasoline will have oxygenates for octane enhancement or as legally required.

* * * Section 4 - First Aid Measures * * *

First Aid: Eyes

In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

First Aid: Skin

Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or with waterless hand cleanser. Obtain medical attention if irritation or redness develops.

First Aid: Ingestion

DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

First Aid: Inhalation

Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

* * * Section 5 - Fire Fighting Measures * * *

General Fire Hazards

See Section 9 for Flammability Properties.

Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. Flowing product may be ignited by self-generated static electricity. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

Hazardous Combustion Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke). Contact with nitric and sulfuric acids will form nitrocresols that can decompose violently.

Extinguishing Media

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO₂, water spray, fire fighting foam, or gaseous extinguishing agent.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

Firefighting foam suitable for polar solvents is recommended for fuel with greater than 10% oxygenate concentration.

Unsuitable Extinguishing Media

None

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Fire Fighting Equipment/Instructions

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment. Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

*** Section 6 - Accidental Release Measures ***

Recovery and Neutralization

Carefully contain and stop the source of the spill, if safe to do so.

Materials and Methods for Clean-Up

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal. Caution, flammable vapors may accumulate in closed containers.

Emergency Measures

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Personal Precautions and Protective Equipment

Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

Environmental Precautions

Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

Prevention of Secondary Hazards

None

*** Section 7 - Handling and Storage ***

Handling Procedures

USE ONLY AS A MOTOR FUEL.
DO NOT SIPHON BY MOUTH

Handle as a flammable liquid. Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

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Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low flash point products (such as this product) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents."

Storage Procedures

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

Incompatibilities

Keep away from strong oxidizers.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Component Exposure Limits

Gasoline, motor fuel (86290-81-5)

ACGIH: 300 ppm TWA
500 ppm STEL

Toluene (108-88-3)

ACGIH: 20 ppm TWA
OSHA: 200 ppm TWA; 375 mg/m³ TWA
150 ppm STEL; 560 mg/m³ STEL
NIOSH: 100 ppm TWA; 375 mg/m³ TWA
150 ppm STEL; 560 mg/m³ STEL

Butane (106-97-8)

ACGIH: 1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)
OSHA: 800 ppm TWA; 1900 mg/m³ TWA
NIOSH: 800 ppm TWA; 1900 mg/m³ TWA

Xylenes (o-, m-, p- isomers) (1330-20-7)

ACGIH: 100 ppm TWA
150 ppm STEL
OSHA: 100 ppm TWA; 435 mg/m³ TWA
150 ppm STEL; 655 mg/m³ STEL

Benzene, 1,2,4-trimethyl- (95-63-6)

NIOSH: 25 ppm TWA; 125 mg/m³ TWA

Ethyl alcohol (64-17-5)

ACGIH: 1000 ppm STEL
OSHA: 1000 ppm TWA; 1900 mg/m³ TWA
NIOSH: 1000 ppm TWA; 1900 mg/m³ TWA

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Ethylbenzene (100-41-4)

ACGIH: 20 ppm TWA
OSHA: 100 ppm TWA; 435 mg/m³ TWA
125 ppm STEL; 545 mg/m³ STEL
NIOSH: 100 ppm TWA; 435 mg/m³ TWA
125 ppm STEL; 545 mg/m³ STEL

Benzene (71-43-2)

ACGIH: 0.5 ppm TWA
2.5 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 5 ppm STEL (Cancer hazard, Flammable, See 29 CFR 1910.1028, 15 min); 0.5 ppm Action Level; 1 ppm TWA
NIOSH: 0.1 ppm TWA
1 ppm STEL

Hexane (110-54-3)

ACGIH: 50 ppm TWA
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 500 ppm TWA; 1800 mg/m³ TWA
NIOSH: 50 ppm TWA; 180 mg/m³ TWA

Engineering Measures

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

Personal Protective Equipment: Respiratory

A NIOSH/MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

Personal Protective Equipment: Hands

Gloves constructed of nitrile, neoprene, or PVC are recommended.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

Personal Protective Equipment: Skin and Body

Chemical protective clothing such as of E.I. DuPont TyChem®, Saranex® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

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*** Section 9 - Physical & Chemical Properties ***

Appearance:	Translucent, straw-colored or light yellow	Odor:	Strong, characteristic aromatic hydrocarbon odor. Sweet-ether like
Physical State:	Liquid	pH:	ND
Vapor Pressure:	6.4 - 15 RVP @ 100 °F (38 °C) (275-475 mm Hg @ 68 °F (20 °C)	Vapor Density:	AP 3-4
Boiling Point:	85-437 °F (39-200 °C)	Melting Point:	ND
Solubility (H2O):	Negligible to Slight	Specific Gravity:	0.70-0.78
Evaporation Rate:	10-11	VOC:	ND
Percent Volatile:	100%	Octanol/H2O Coeff.:	ND
Flash Point:	-45 °F (-43 °C)	Flash Point Method:	PMCC
Upper Flammability Limit (UFL):	7.6%	Lower Flammability Limit (LFL):	1.4%
Burning Rate:	ND	Auto Ignition:	>530°F (>280°C)

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources.

Incompatible Products

Keep away from strong oxidizers.

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke). Contact with nitric and sulfuric acids will form nitrocresols that can decompose violently.

*** Section 11 - Toxicological Information ***

Acute Toxicity

A: General Product Information

Harmful if swallowed.

B: Component Analysis - LD50/LC50

Gasoline, motor fuel (86290-81-5)

Inhalation LC50 Rat >5.2 mg/L 4 h; Oral LD50 Rat 14000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg

Toluene (108-88-3)

Inhalation LC50 Rat 12.5 mg/L 4 h; Inhalation LC50 Rat >26700 ppm 1 h; Oral LD50 Rat 636 mg/kg; Dermal LD50 Rabbit 8390 mg/kg; Dermal LD50 Rat 12124 mg/kg

Butane (106-97-8)

Inhalation LC50 Rat 658 mg/L 4 h

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Material Name: Gasoline All Grades

SDS No. 9950

Xylenes (o-, m-, p- isomers) (1330-20-7)

Inhalation LC50 Rat 5000 ppm 4 h; Inhalation LC50 Rat 47635 mg/L 4 h; Oral LD50 Rat 4300 mg/kg; Dermal LD50 Rabbit >1700 mg/kg

Benzene, 1,2,4-trimethyl- (95-63-6)

Inhalation LC50 Rat 18 g/m³ 4 h; Oral LD50 Rat 3400 mg/kg; Dermal LD50 Rabbit >3160 mg/kg

Ethyl alcohol (64-17-5)

Oral LD50 Rat 7060 mg/kg; Inhalation LC50 Rat 124.7 mg/L 4 h

Ethylbenzene (100-41-4)

Inhalation LC50 Rat 17.2 mg/L 4 h; Oral LD50 Rat 3500 mg/kg; Dermal LD50 Rabbit 15354 mg/kg

Benzene (71-43-2)

Inhalation LC50 Rat 13050-14380 ppm 4 h; Oral LD50 Rat 1800 mg/kg

Hexane (110-54-3)

Inhalation LC50 Rat 48000 ppm 4 h; Oral LD50 Rat 25 g/kg; Dermal LD50 Rabbit 3000 mg/kg

Potential Health Effects: Skin Corrosion Property/Stimulativeness

Practically non-toxic if absorbed following acute (single) exposure. May cause skin irritation with prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Moderate irritant. Contact with liquid or vapor may cause irritation.

Potential Health Effects: Ingestion

Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

Potential Health Effects: Inhalation

Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

WARNING: the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity

This product may cause genetic defects.

Carcinogenicity

A: General Product Information

May cause cancer.

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IARC has determined that gasoline and gasoline exhaust are possibly carcinogenic in humans. Inhalation exposure to completely vaporized unleaded gasoline caused kidney cancers in male rats and liver tumors in female mice. The U.S. EPA has determined that the male kidney tumors are species-specific and are irrelevant for human health risk assessment. The significance of the tumors seen in female mice is not known. Exposure to light hydrocarbons in the same boiling range as this product has been associated in animal studies with effects to the central and peripheral nervous systems, liver, and kidneys. The significance of these animal models to predict similar human response to gasoline is uncertain.

This product contains benzene. Human health studies indicate that prolonged and/or repeated overexposure to benzene may cause damage to the blood-forming system (particularly bone marrow), and serious blood disorders such as aplastic anemia and leukemia. Benzene is listed as a human carcinogen by the NTP, IARC, OSHA and ACGIH.

B: Component Carcinogenicity

Gasoline, motor fuel (86290-81-5)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

Toluene (108-88-3)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

Xylenes (o-, m-, p- isomers) (1330-20-7)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

Ethyl alcohol (64-17-5)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

IARC: Monograph 100E [in preparation] (in alcoholic beverages); Monograph 96 [2010] (in alcoholic beverages) (Group 1 (carcinogenic to humans))

Ethylbenzene (100-41-4)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

IARC: Monograph 77 [2000] (Group 2B (possibly carcinogenic to humans))

Benzene (71-43-2)

ACGIH: A1 - Confirmed Human Carcinogen

OSHA: 5 ppm STEL (Cancer hazard, Flammable, See 29 CFR 1910.1028, 15 min); 0.5 ppm Action Level; 1 ppm TWA

NIOSH: potential occupational carcinogen

NTP: Known Human Carcinogen (Select Carcinogen)

IARC: Monograph 100F [in preparation]; Supplement 7 [1987]; Monograph 29 [1982] (Group 1 (carcinogenic to humans))

Reproductive Toxicity

This product is suspected of damaging fertility or the unborn child.

Specified Target Organ General Toxicity: Single Exposure

This product may cause drowsiness or dizziness.

Safety Data Sheet

Material Name: Gasoline All Grades

SDS No. 9950

Specified Target Organ General Toxicity: Repeated Exposure

This product causes damage to organs through prolonged or repeated exposure.

Aspiration Respiratory Organs Hazard

The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

* * * Section 12 - Ecological Information * * *

Ecotoxicity

A: General Product Information

Very toxic to aquatic life with long lasting effects. Keep out of sewers, drainage areas and waterways. Report spills and releases, as applicable, under Federal and State regulations.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Gasoline, motor fuel (86290-81-5)

Test & Species

Conditions

96 Hr LC50 Alburnus alburnus	119 mg/L [static]
96 Hr LC50 Cyprinodon variegatus	82 mg/L [static]
72 Hr EC50 Pseudokirchneriella subcapitata	56 mg/L
24 Hr EC50 Daphnia magna	170 mg/L

Toluene (108-88-3)

Test & Species

Conditions

96 Hr LC50 Pimephales promelas	15.22-19.05 mg/L [flow-through]	1 day old
96 Hr LC50 Pimephales promelas	12.6 mg/L [static]	
96 Hr LC50 Oncorhynchus mykiss	5.89-7.81 mg/L [flow-through]	
96 Hr LC50 Oncorhynchus mykiss	14.1-17.16 mg/L [static]	
96 Hr LC50 Oncorhynchus mykiss	5.8 mg/L [semi-static]	
96 Hr LC50 Lepomis macrochirus	11.0-15.0 mg/L [static]	
96 Hr LC50 Oryzias latipes	54 mg/L [static]	
96 Hr LC50 Poecilia reticulata	28.2 mg/L [semi-static]	
96 Hr LC50 Poecilia reticulata	50.87-70.34 mg/L [static]	
96 Hr EC50 Pseudokirchneriella subcapitata	>433 mg/L	
72 Hr EC50 Pseudokirchneriella subcapitata	12.5 mg/L [static]	
48 Hr EC50 Daphnia magna	5.46 - 9.83 mg/L [Static]	
48 Hr EC50 Daphnia magna	11.5 mg/L	

Xylenes (o-, m-, p- isomers) (1330-20-7)

Test & Species

Conditions

96 Hr LC50 Pimephales promelas	13.4 mg/L [flow-through]
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96 Hr LC50 Oncorhynchus mykiss	2.661-4.093 mg/L [static]
96 Hr LC50 Oncorhynchus mykiss	13.5-17.3 mg/L
96 Hr LC50 Lepomis macrochirus	13.1-16.5 mg/L [flow-through]
96 Hr LC50 Lepomis macrochirus	19 mg/L
96 Hr LC50 Lepomis macrochirus	7.711-9.591 mg/L [static]
96 Hr LC50 Pimephales promelas	23.53-29.97 mg/L [static]
96 Hr LC50 Cyprinus carpio	780 mg/L [semi- static]
96 Hr LC50 Cyprinus carpio	>780 mg/L
96 Hr LC50 Poecilia reticulata	30.26-40.75 mg/L [static]
48 Hr EC50 water flea	3.82 mg/L
48 Hr LC50 Gammarus lacustris	0.6 mg/L

Benzene, 1,2,4-trimethyl- (95-63-6)

Test & Species

Conditions

96 Hr LC50 Pimephales promelas	7.19-8.28 mg/L [flow-through]
48 Hr EC50 Daphnia magna	6.14 mg/L

Ethyl alcohol (64-17-5)

Test & Species

Conditions

96 Hr LC50 Oncorhynchus mykiss	12.0 - 16.0 mL/L [static]
96 Hr LC50 Pimephales promelas	>100 mg/L [static]
96 Hr LC50 Pimephales promelas	13400 - 15100 mg/L [flow-through]
48 Hr LC50 Daphnia magna	9268 - 14221 mg/L
24 Hr EC50 Daphnia magna	10800 mg/L
48 Hr EC50 Daphnia magna	2 mg/L [Static]

Ethylbenzene (100-41-4)

Test & Species

Conditions

96 Hr LC50 Oncorhynchus mykiss	11.0-18.0 mg/L [static]
96 Hr LC50 Oncorhynchus mykiss	4.2 mg/L [semi- static]
96 Hr LC50 Pimephales promelas	7.55-11 mg/L [flow- through]
96 Hr LC50 Lepomis macrochirus	32 mg/L [static]
96 Hr LC50 Pimephales promelas	9.1-15.6 mg/L [static]
96 Hr LC50 Poecilia reticulata	9.6 mg/L [static]
72 Hr EC50 Pseudokirchneriella subcapitata	4.6 mg/L
96 Hr EC50 Pseudokirchneriella subcapitata	>438 mg/L
72 Hr EC50 Pseudokirchneriella subcapitata	2.6 - 11.3 mg/L [static]

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96 Hr EC50 Pseudokirchneriella subcapitata	1.7 - 7.6 mg/L [static]
48 Hr EC50 Daphnia magna	1.8 - 2.4 mg/L

Benzene (71-43-2)

Test & Species

Conditions

96 Hr LC50 Pimephales promelas	10.7-14.7 mg/L [flow-through]
96 Hr LC50 Oncorhynchus mykiss	5.3 mg/L [flow-through]
96 Hr LC50 Lepomis macrochirus	22.49 mg/L [static]
96 Hr LC50 Poecilia reticulata	28.6 mg/L [static]
96 Hr LC50 Pimephales promelas	22330-41160 µg/L [static]
96 Hr LC50 Lepomis macrochirus	70000-142000 µg/L [static]
72 Hr EC50 Pseudokirchneriella subcapitata	29 mg/L
48 Hr EC50 Daphnia magna	8.76 - 15.6 mg/L [Static]
48 Hr EC50 Daphnia magna	10 mg/L

Hexane (110-54-3)

Test & Species

Conditions

96 Hr LC50 Pimephales promelas	2.1-2.98 mg/L [flow-through]
24 Hr EC50 Daphnia magna	>1000 mg/L

Persistence/Degradability

No information available.

Bioaccumulation

No information available.

Mobility in Soil

No information available.

*** * * Section 13 - Disposal Considerations * * ***

Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

Safety Data Sheet

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*** Section 14 - Transportation Information ***

Component Marine Pollutants

This material contains one or more of the following chemicals required by US DOT to be identified as marine pollutants.

Component	CAS #	
Gasoline, motor fuel	86290-81-5	DOT regulated marine pollutant

DOT Information

Shipping Name: Gasoline

UN #: 1203 Hazard Class: 3 Packing Group: II

Placard:



*** Section 15 - Regulatory Information ***

Regulatory Information

A: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Toluene (108-88-3)

SARA 313: 1.0 % de minimis concentration
CERCLA: 1000 lb final RQ; 454 kg final RQ

Xylenes (o-, m-, p- isomers) (1330-20-7)

SARA 313: 1.0 % de minimis concentration
CERCLA: 100 lb final RQ; 45.4 kg final RQ

Benzene, 1,2,4-trimethyl- (95-63-6)

SARA 313: 1.0 % de minimis concentration

Ethylbenzene (100-41-4)

SARA 313: 0.1 % de minimis concentration
CERCLA: 1000 lb final RQ; 454 kg final RQ

Benzene (71-43-2)

SARA 313: 0.1 % de minimis concentration
CERCLA: 10 lb final RQ (received an adjusted RQ of 10 lbs based on potential carcinogenicity in an August 14, 1989 final rule); 4.54 kg final RQ (received an adjusted RQ of 10 lbs based on potential carcinogenicity in an August 14, 1989 final rule)

Safety Data Sheet

Material Name: Gasoline All Grades

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Hexane (110-54-3)

SARA 313: 1.0 % de minimis concentration

CERCLA: 5000 lb final RQ; 2270 kg final RQ

SARA Section 311/312 – Hazard Classes

Acute Health

X

Chronic Health

X

Fire

X

Sudden Release of Pressure

--

Reactive

--

Component Marine Pollutants

This material contains one or more of the following chemicals required by US DOT to be identified as marine pollutants.

Component	CAS #	
Gasoline, motor fuel	86290-81-5	DOT regulated marine pollutant

State Regulations

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Gasoline, motor fuel	86290-81-5	No	No	No	No	Yes	No
Toluene	108-88-3	Yes	Yes	Yes	Yes	Yes	No
Butane	106-97-8	Yes	Yes	Yes	Yes	Yes	No
Xylenes (o-, m-, p- isomers)	1330-20-7	Yes	Yes	Yes	Yes	Yes	No
Benzene, 1,2,4-trimethyl-	95-63-6	No	Yes	Yes	Yes	Yes	No
Ethyl alcohol	64-17-5	Yes	Yes	Yes	Yes	Yes	No
Ethylbenzene	100-41-4	Yes	Yes	Yes	Yes	Yes	No
Benzene	71-43-2	Yes	Yes	Yes	Yes	Yes	No
Hexane	110-54-3	No	Yes	Yes	Yes	Yes	No

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

WARNING! This product contains a chemical known to the state of California to cause reproductive/developmental effects.

Safety Data Sheet

Material Name: Gasoline All Grades

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Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Toluene	108-88-3	1 %
Butane	106-97-8	1 %
Benzene, 1,2,4-trimethyl-	95-63-6	0.1 %
Ethyl alcohol	64-17-5	0.1 %
Ethylbenzene	100-41-4	0.1 %
Benzene	71-43-2	0.1 %
Hexane	110-54-3	1 %

Additional Regulatory Information

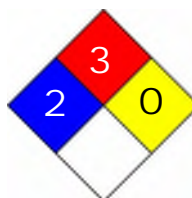
Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Gasoline, motor fuel	86290-81-5	No	DSL	EINECS
Toluene	108-88-3	Yes	DSL	EINECS
Butane	106-97-8	Yes	DSL	EINECS
Xylenes (o-, m-, p- isomers)	1330-20-7	Yes	DSL	EINECS
Benzene, 1,2,4-trimethyl-	95-63-6	Yes	DSL	EINECS
Ethyl alcohol	64-17-5	Yes	DSL	EINECS
Ethylbenzene	100-41-4	Yes	DSL	EINECS
Benzene	71-43-2	Yes	DSL	EINECS
Hexane	110-54-3	Yes	DSL	EINECS

*** Section 16 - Other Information ***

NFPA® Hazard Rating

Health	2
Fire	3
Reactivity	0



HMIS® Hazard Rating

Health	2	Moderate
Fire	3	Serious
Physical	0	Minimal

*Chronic

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.

Literature References

None

Safety Data Sheet

Material Name: Gasoline All Grades

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Other Information

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

End of Sheet

FOR ANY EMERGENCY, 24 HOURS / 7 DAYS, CALL:

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC®:

FOR ALL SDS QUESTIONS & REQUESTS, CALL:

1-800-654-6911 (OUTSIDE

USA: 1-423-780-2970)

1-800-424-9300 (OUTSIDE

USA: 1-703-527-3887)

1-800-511-MSDS (OUTSIDE

USA: 1-423-780-2347)

PRODUCT NAME: **GLB ALGIMYCIN 600**

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Supplier

GLB

**1400 Bluegrass Lakes Parkway ,
Alpharetta, GA, 30004
USA**

Telephone: +17705215999

Telefax: +17705215959

Web: www.poolspacare.com

REVISION DATE:

05/26/2015

SUPERCEDES:

02/10/2011

MSDS Number:

000000025202

SYNONYMS:

CHEMICAL FAMILY:

None

DESCRIPTION / USE

None established

FORMULA:

None established

Manufacturer

Advantis Technologies

1200 Bluegrass Lakes Parkway

Alpharetta, GA 30004

United States of America

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) : Category 4

Eye irritation : Category 2B

Acute toxicity (Inhalation) : Category 3

GHS Label element

Hazard pictograms :



Signal word	:	Danger
Hazard statements	:	H302 Harmful if swallowed. H320 Causes eye irritation. H331 Toxic if inhaled.
Precautionary statements	:	Prevention: P261 Avoid breathing vapours. P264 Wash hands thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. Response: P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. P330 Rinse mouth. P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P311 Call a POISON CENTER or doctor/ physician. P321 Specific treatment (see supplemental first aid instructions on this label). P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 If eye irritation persists: Get medical advice/ attention. Disposal: P501 Dispose of contents/container in accordance with local regulation.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>CAS OR CHEMICAL NAME</u>	<u>CAS #</u>	<u>% RANGE</u>
POLY [OXYETHYLENE (DIMETHYLIMINIO) ETHYLENE	31512-74-0	55 - 65

SECTION 4. FIRST AID MEASURES

General Advice:	Call a poison control center or doctor for treatment advice. For 24-hour emergency medical assistance, call Arch Chemical Emergency Action Network at 1-800-654-6911. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
-----------------	--

Inhalation:	IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
Skin Contact:	IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Eye Contact:	IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
Ingestion:	IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

SECTION 5. FIREFIGHTING MEASURES

Flammability Summary (OSHA): Combustible above 93 deg. C / 200 deg. F.

Flammable Properties

Flash Point: 100 °C

Fire / Explosion Hazards: May be ignited by open flame.
 Extinguishing Media: Water fog Carbon dioxide (CO₂) Foam Dry powder
 Fire Fighting Instructions: Use water spray to cool unopened containers. In case of fire, use normal fire-fighting equipment and the personal protective equipment recommended in Section 8 to include a NIOSH approved self-contained breathing apparatus.

Upper Flammable / Explosive Limit, No data
 % in air:
 Lower Flammable / Explosive Limit, No data
 % in air:

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Protection for Emergency Situations: Use the personal protective equipment recommended in Section 8 and a NIOSH approved self-contained breathing apparatus.

Spill Mitigation Procedures

Air Release: Keep people away from and upwind of spill/leak.
 Water Release: soluble Do not contaminate water.
 Land Release: Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

Additional Spill Information : Prevent further leakage or spillage if safe to do so. Use personal protective equipment as required. Evacuate personnel to safe areas. Remove all sources of ignition.

SECTION 7. HANDLING AND STORAGE

Handling: Do not take internally. Avoid contact with skin, eyes and clothing. If in eyes or on skin, rinse well with water. Avoid breathing vapours, mist or gas.

Storage: Store in a cool, dry and well ventilated place. Isolate from incompatible materials. Do not freeze.

Incompatible Materials for Storage: Refer to Section 10, "Incompatible Materials."

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: No exposure limits exist for the constituents of this product. Additional ventilation beyond that of general exhaust is not normally required.

Protective Equipment for Routine Use of Product

Respiratory Protection : Respiratory protection not normally needed., If vapors, mists or aerosols are generated, wear a NIOSH approved respirator.

Skin Protection : Impervious gloves

Eye Protection: Safety glasses with side-shields

Protective Clothing Type: impervious clothing

General Protective Measures: Emergency eyewash should be provided in the immediate work area.

Components with workplace control parameters

no data available

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	liquid
Form	No data.
Color:	No data.
Odor:	No data.
Molecular Weight:	None established
pH :	6.0 - 8.0
	()
Boiling Point:	No data
Melting point/freezing point	No data
Density	Not applicable
Bulk Density:	()
	Not applicable
Vapor Pressure:	Not applicable
Vapor Density:	Not applicable

Viscosity:	125 mPa.s 20 °C
Solubility in Water:	completely soluble
Partition coefficient n-octanol/water:	No data
Evaporation Rate:	no data available
Oxidizing:	None established
Volatiles, % by vol.:	no data available
VOC Content	This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489). This product does not contain any VOC exemptions listed under the U.S. Clean Air Act Section 450.
HAP Content	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Stability and Reactivity Summary:	Stable under normal conditions., Product will not undergo hazardous polymerization.
Conditions to Avoid:	Heat, flames and sparks.
Chemical Incompatibility:	Anionic polymers
Hazardous Decomposition Products:	Carbon monoxide
Decomposition Temperature:	No data

SECTION 11. TOXICOLOGICAL INFORMATION

Component Animal Toxicology

Oral LD50 value:

POLY [OXYETHYLENE (DIMETHYLIMINIO) ETHYLENE] LD50 (60% Active Ingredient) = 1,951 mg/kg Rat male
LD50 (60% Active Ingredient) = 2,587 mg/kg Rat female

Component Animal Toxicology

Dermal LD50 value:

POLY [OXYETHYLENE (DIMETHYLIMINIO) ETHYLENE] LD50 (60% Active Ingredient) > 2,000 mg/kg Rabbit

Component Animal Toxicology

Inhalation LC50 value:

POLY [OXYETHYLENE (DIMETHYLIMINIO) ETHYLENE] LC50 4 h (60% Active Ingredient) = 2.9 ppm Rat

Product Animal Toxicity

Oral LD50 value: LD50 = 1,951 mg/kg Rat male LD50 = 2,587 mg/kg Rat female

<u>Dermal LD50 value:</u>	LD50 > 2,000 mg/kg Rabbit
<u>Inhalation LC50 value:</u>	LC50 4 h Approximately 3 ppm Rat
Skin Irritation:	Contact would be expected to cause transient redness if not washed off and left on the skin for an extended period of time., Not considered to be a primary skin irritant.
Eye Irritation:	May cause mild eye irritation.
Skin Sensitization:	This material is not known or reported to be a skin or respiratory sensitizer., A similar product was found to be a negative skin sensitizer in the Guinea pig Buehler method test.
Acute Toxicity:	May cause mild eye irritation. Ingestion may cause mild gastrointestinal discomfort.
Subchronic / Chronic Toxicity:	Not known or reported to cause subchronic or chronic toxicity.
Reproductive and Developmental Toxicity:	This chemical has been tested in laboratory animals and no evidence of teratogenicity or fetotoxicity was seen.
Mutagenicity:	Not known or reported to be mutagenic. A similar product was tested in a mutagenicity assay and was found to be non-mutagenic under the conditions of the test.
Carcinogenicity:	This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA.
POLY [OXYETHYLENE (DIMETHYLIMINIO) ETHYLENE	A two-year rat carcinogenicity study showed a slight increase in c-cell adenomas in female rats. Studies with male rats and male and female mice did not show any evidence of carcinogenic response. This product is not considered a carcinogen

SECTION 12. ECOLOGICAL INFORMATION

Overview: Very toxic to aquatic life.

Ecological Toxicity Values for: POLY [OXYETHYLENE (DIMETHYLIMINIO) ETHYLENE

Rainbow trout (<i>Salmo gairdneri</i>),	-	96 h LC50 = 0.047 mg/l
Bluegill sunfish	-	96 h LC50 = 0.21 mg/l
Pimephales promelas (fathead minnow)	-	96 h LC50 = 0.26 mg/l
Mysid shrimp	-	96 h LC50= 13 mg/l
Daphnia magna,	-	48 h LC50= 0.37 mg/l

SECTION 13. DISPOSAL CONSIDERATIONS

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THE MATERIAL. THE USER OF THE MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.

Waste Disposal Summary : If this product becomes a waste, it DOES NOT meet the criteria of a hazardous waste as defined under 40 CFR 261, in that it does not exhibit the characteristics of hazardous waste of Subpart C, nor is it listed as a hazardous waste under Subpart D. As a nonhazardous liquid waste, it should be disposed of in accordance with local, state and federal regulations.

SECTION 14. TRANSPORT INFORMATION

DOT

UN number : 3082
 Description of the goods : Environmentally hazardous substance, liquid, n.o.s.
 : (Poly[oxyethylene (dimethyliminio) ethylene])
 Class : 9
 Packing group : III
 Labels : 9
 Emergency Response : 171
 Guidebook Number

TDG

UN number : 3082
 Description of the goods : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
 N.O.S.
 : (Poly[oxyethylene (dimethyliminio) ethylene])
 Class : 9
 Packing group : III
 Labels : 9

IATA

UN number : 3082
 Description of the goods : Environmentally hazardous substance, liquid, n.o.s.
 : (Poly[oxyethylene (dimethyliminio) ethylene])
 Class : 9
 Packing group : III
 Labels : 9MI
 Packing instruction (cargo aircraft) : 964
 Packing instruction (passenger aircraft) : 964

Packing instruction : Y964
(passenger aircraft)

IMDG-CODE

UN number : 3082
Description of the goods : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(Poly[oxyethylene (dimethyliminio) ethylene])
Class : 9
Packing group : III
Labels : 9
EmS Number 1 : F-A
EmS Number 2 : S-F
Marine pollutant : yes

SECTION 15. REGULATORY INFORMATION

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals.

Signal word : CAUTION!
Hazard statements : Harmful if swallowed.
This pesticide is toxic to fish.

EPCRA - Emergency Planning and Community Right-to-Know Act

SARA 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

Poly[oxyethylene (dimethyliminio) ethylene] 31512-74-0

New Jersey Right To Know

Poly[oxyethylene (dimethyliminio) ethylene]	31512-74-0	50 - 70 %
Water	7732-18-5	30 - 50 %

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

TSCA	: This is an EPA registered pesticide.
	: Poly[oxyethylene (dimethyliminio) ethylene]

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

SECTION 16. OTHER INFORMATION

SECTIONS REVISED: 1

GLB ALGIMYCIN 600

REVISION DATE : 05/26/2015

Page 9 of 10

SAFETY DATA SHEET

Major References : Available upon request.

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THE INFORMATION IN THIS MSDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. ARCH CHEMICALS BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION BUT, MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MSDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT ARCH CHEMICALS MSDS CONTROL AT THE PHONE NUMBER ON THE FRONT PAGE TO MAKE CERTAIN THAT THIS DOCUMENT IS CURRENT. .

Revision Date: 10/30/15
SDS ID: OSHA HCS (29 CFR 1910.1200)

1. IDENTIFICATION

GHS PRODUCT IDENTIFIER:

Product Name Gruvlok Xtreme
CAS No. Lubricant
Trade Name Mixture
Product Codes Silicone Grease
None

RELEVANT IDENTIFIED USES:

Identified Use(s) Lubricant
Uses Advised Against None

DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET:

Company Identification

Anvil International LLC
2 Holland Way, Exeter, NH 03833
Tel. 603-418-2800

EMERGENCY TELEPHONE NUMBER:

Transportation Emergency

CHEMTREC 24 Hr. 1-800-424-9300 / 1-703-527-3887
(Collect calls accepted)

2. HAZARDS IDENTIFICATION

CLASSIFICATION:

OSHA HCS (29 CFR 1910.1200) Not classified as dangerous for supply/use.

LABEL ELEMENTS:

Hazard Symbol: None
Hazard Statements: None
Precautionary Statements: If swallowed: rinse mouth. DO NOT induce vomiting.
If on skin: Wash with plenty of soap and water.
Keep out of reach of children.
Other Hazards: None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	% wt.	CAS No.
None	-----	-----

Additional Information: None

4. FIRST AID MEASURES



DESCRIPTION OF FIRST AID MEASURES:

Inhalation Unlikely to be required but if necessary treat symptomatically.
Skin Contact Unlikely to be required but if necessary treat symptomatically.
Eye Contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
Ingestion Do not give anything by mouth to an unconscious person. Seek medical treatment.
Most important symptoms and effects, both acute and delayed None
Identification of any immediate medical attention and special treatment needed None

5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA:

Suitable Extinguishing Media

Extinguish preferably with dry chemical, sand, foam or carbon dioxide.
Keep fire exposed containers cool by spraying with water.

Unsuitable Extinguishing Media

Do not use water jet.

SPECIFIC HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

None known.

ADVICE FOR FIRE-FIGHTERS:

A self contained breathing apparatus and suitable protective clothing should be worn in fire conditions.
Keep containers cool by spraying with water if exposed to fire.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

Not normally required. Wear protective gloves/eye protection.

ENVIRONMENTAL PRECAUTIONS:

Prevent substance entering sewers.

METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:

Transfer to a container for disposal or recovery.

REFERENCE TO OTHER SECTIONS:

None

ADDITIONAL INFORMATION:

None

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING:

Avoid contact with skin and eyes.

CAUTIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

Special storage conditions

Keep container tightly closed and dry.

Incompatible materials

None known

SPECIFIC END USES(S):

Lubricant

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS:

SUBSTANCE.	CAS No.	(Shr TWA)		(STEL)		Note:
		PEL (OSHA)	TLV (ACGIH)	PEL (OSHA)	TLV (ACGIH)	
Amorphous silica	7631-86-9	5 mg/m ³ 15 mg/m ³	3 mg/m ³	-----	-----	Respirable Dust Total Dust

RECOMMENDED MONITORING METHOD:

Exposure Controls

Appropriate Engineering Controls

Personal Protection Equipment

No specific measures are required.

The following to be used as necessary:

Eye/Face Protection



Wear protective eyewear (goggles, face shield, or safety glasses)

Skin Protection (Hand protection/Other)



Wear suitable gloves if prolonged skin contact is likely (Nitrile rubber)

Respiratory Protection



Normally no personal respiratory protection is necessary. An approved dust mask should be worn if exposure to levels above the occupational exposure limit is likely.

Thermal Hazards

Not normally required. Use gloves with insulation for thermal protection, when needed.

Environmental Exposure Controls

None known

9. PHYSICAL AND CHEMICAL PROPERTIES

INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:

Appearance	Grease
Color.	White/Translucent
Odor	Slight
Odor Threshold (ppm)	Not available
pH (Value)	Not available
Melting Point (°C) / Freezing Point (°C)	> 500
Boiling point/boiling range (°C):	Not available
Flash Point (°C)	>200
Evaporation Rate	Not available
Flammability (solid, gas)	Not applicable
Explosive Limit Ranges	Not applicable
Vapor pressure (Pascal)	Not available
Vapor Density (Air=1)	Not available
Specific Gravity	1.1
Solubility (Water)	Insoluble
Auto Ignition Point (°C)	Not Determined

Decomposition Temperature (°C)	Not available
Kinematic Viscosity (cSt)	Not available
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions.
Chemical stability	Stable.
Possibility of hazardous reactions	None anticipated.
Conditions to avoid	None known
Incompatible materials	None known
Hazardous decomposition product(s)	None known

11. TOXICOLOGICAL INFORMATION

EXPOSURE ROUTES:

Oral, Skin Contact, Eye Contact

Acute toxicity	Oral: LD50 >5 g/kg-bw
Irritation/Corrosivity	Unlikely to cause skin irritation.
Sensitization	It is not a skin sensitizer.
Repeated dose toxicity	Not available
Carcinogenicity	No data. It is unlikely to present a carcinogenic hazard to man.

NTP	IARC	ACGIH	OSHA	NIOSH
No.	No.	No.	No.	No.

Mutagenicity	There is no evidence of mutagenic potential.
Toxicity for reproduction	None

12. ECOLOGICAL INFORMATION

TOXICITY:

Short term	Not available
Long term	Not available

Persistence and degradability	Not available
--------------------------------------	---------------

Bioaccumulative potential	The product has low potential for bioaccumulation.
Mobility in soil	The product has low mobility in soil.
Results of PBT and vPvB assessment	Not classified as PBT or vPvB.
Other adverse effects	None known.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods	Disposal should be in accordance with local, state or national legislation. Consult an accredited waste disposal contractor or the local authority for advice.
--------------------------------	---

14. TRANSPORT INFORMATION

	Land Transport (U.S. DOT)	Sea Transport (MDG)	Air Transport (ICAO/IATA)
UN number			
Proper Shipping Name		Not classified as dangerous for transport	
Transport hazard class(es)			
Packing group			
Environmental hazards			
Special precautions for user			
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:	Not applicable		

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture:
TSCA (Toxic Substance Control Act) - Inventory Status: All components listed or polymer exempt.

Designated Hazardous Substances and Reportable Quantities (40 CFR 302.4):

Chemical Name	CAS No.	Typical % wt.	RQ (Pounds)
None	-----	-----	-----

SARA 311/312 - Hazard Categories: None

☐ Fire ☐ Sudden Release ☐ Reactivity ☐ Immediate (acute) ☐ Chronic (delayed)

SARA 313 - Toxic Chemicals (40 CFR 372):

Chemical Name	CAS No.	Typical % wt.
None	-----	-----

SARA 302 - Extremely Hazardous Substances (40 CFR 355):

Chemical Name	CAS No.	Typical % wt.	TPQ (pounds)
None	-----	-----	-----

California Proposition 65 List

Chemical Name	CAS No.	Type of Toxicity
None	-----	-----

16. OTHER INFORMATION

The following sections contain revisions or new statements: 1-16.

Date of preparation: July 13, 2015

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.



Safety Data Sheet

acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 12/23/2015

Reviewed on 12/23/2015

1 Identification

- **Product identifier**
- **Trade name:** Solar Flux® Type B
- **Other means of identification:**
- **SDS Number:** 0082
- **Recommended use and restriction on use**
- **Recommended use:** Powder flux for welding
- **Restrictions on use:** No relevant information available.
- **Manufacturer/Importer/Supplier/Distributor information**
- **Manufacturer/Supplier:**
Harris Products Group
4501 Quality Place
Mason, Ohio 45040 US
513-754-2000
- **Safety Data Sheet Questions:** salesinfo@jwharris.com
- **Arc Welding Safety Information:** www.lincolnelectric.com/safety
- **24-Hour Emergency Response Telephone Numbers:**
1-866-519-4752 (USA, Canada, Mexico only)
- (+) 1-760-476-3962
- **3E Company Access Code:** 333895

2 Hazard(s) identification

Classified according to the criteria of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS), OSHA Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Controlled Products Regulations.

- **Classification of the substance or mixture**



GHS08 Health hazard

Carc. 1A H350 May cause cancer.

- **Additional information:**
There are no other hazards not otherwise classified that have been identified.
0 % of the mixture consists of component(s) of unknown toxicity.

-
- **Label elements**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

(Cont'd. on page 2)

Safety Data Sheet

acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 12/23/2015

Reviewed on 12/23/2015

Trade name: Solar Flux® Type B

(Cont'd. of page 1)

· Hazard pictograms:



GHS08

· Signal word: Danger

· Hazard-determining components of labeling:

Quartz (SiO₂)

· Hazard statements:

H350 May cause cancer.

· Precautionary statements:

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P280 Wear protective gloves/protective clothing/eye protection.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· Additional information:

· Other hazards which do not result in GHS classification:

Electrical Shock can kill. If welding must be performed in damp locations or with wet clothing, on metal structures or when in cramped positions such as sitting, kneeling or lying, or if there is a high risk of unavoidable or accidental contact with workpiece, use the following equipment: Semiautomatic DC Welder, DC Manual (Stick) Welder, or AC Welder with Reduced Voltage Control.

Arc rays can injure eyes and burn skin. Welding arc and sparks can ignite combustibles and flammable materials. Overexposure to welding fumes and gases can be hazardous. Read and understand the manufacturer's instructions, Safety Data Sheets and the precautionary labels before using this product. Refer to Section 8.

3 Composition/information on ingredients

· Chemical characterization: Mixtures

· Dangerous components:

14808-60-7 Quartz (SiO₂)

6-12%

· Additional information:

For the listed ingredient(s), the identity and exact percentage(s) are being withheld as a trade secret.

4 First-aid measures

· Description of first aid measures

· General information: Provide oxygen treatment if affected person has difficulty breathing.

(Cont'd. on page 3)

Safety Data Sheet

acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 12/23/2015

Reviewed on 12/23/2015

Trade name: Solar Flux® Type B

(Cont'd. of page 2)

- **After inhalation:**
Move to fresh air if breathing is difficult. If breathing has stopped, perform artificial respiration and obtain medical assistance at once.
- **After skin contact:**
Remove contaminated clothing and wash the skin thoroughly with soap and water. For reddened or blistered skin, or thermal burns, obtain medical assistance at once.
- **After eye contact:**
Dust or fume from this product should be flushed from the eyes with copious amounts of clean, tepid water until transported to an emergency medical facility. Do not allow victim to rub or keep eyes tightly closed. Obtain medical assistance at once.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; immediately call for medical help.
- **Most important symptoms and effects, both acute and delayed:**
Nausea
Gastric or intestinal disorders when ingested.
Breathing difficulty
Coughing
- **Danger:**
Carcinogenic.
Welding hazards are complex and may include physical and health hazards such as but not limited to electric shock, physical strains, radiation burns (eye flash), thermal burns due to hot metal or spatter and potential health effects of overexposure to welding fume or dust. Refer to Section 11 for more information.
- **Indication of any immediate medical attention and special treatment needed:** Treat symptomatically.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
As shipped, the product will not burn. In case of fire in the surroundings: use appropriate extinguishing agent.
For metal fires: Use specific agents only.
- **For safety reasons unsuitable extinguishing agents:** For metal fires: Use specific agents only.
- **Special hazards arising from the substance or mixture**
Infrared radiation from flame or hot metal can ignite combustibles and flammable products.
- **Advice for firefighters**
- **Special fire fighting procedures:**
Use standard firefighting procedures and consider the hazards of other involved materials.
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
- **Additional information:**
Read and understand American National Standard Z49.1, "Safety In Welding, Cutting and Allied Processes" and National Fire Protection Association NFPA 51B, "Standard for Fire Prevention During Welding, Cutting and Other Hot Work" before using this product.

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Trade name: Solar Flux® Type B

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6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures:**
If airborne dust and/or fume is present, use adequate engineering controls and, if needed, personal protection to prevent overexposure. Refer to recommendations in Section 8.
- **Environmental precautions:**
Avoid release to the environment.
Damp down dust with water spray.
Prevent further leakage or spillage if safe to do so.
- **Methods and material for containment and cleaning up:**
Clean up spills immediately, observing precautions in the personal protective equipment in Section 8.
Avoid generating dust. Prevent product from entering any drains, sewers or water sources.
Pick up mechanically.
Send for recovery or disposal in suitable receptacles.
- **Reference to other sections:**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling**
- **Precautions for safe handling:**
Avoid breathing dust.
Ensure good ventilation/exhaustion at the workplace.
Any deposit of dust which cannot be avoided must be regularly removed.
Prevent formation of dust. Ensure good ventilation/exhaustion at the workplace. Any deposit of dust which cannot be avoided must be regularly removed. Read and understand the manufacturer's instruction and the precautionary label on the product. Refer to Lincoln Safety Publications at www.lincolnelectric.com/safety. See American National Standard Z49.1, "Safety In Welding, Cutting and Allied Processes" published by the American Welding Society, <http://pubs.aws.org> and OSHA Publication 2206 (29CFR1910), U.S. Government Printing Office, www.gpo.gov.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:**
Store in closed original container in a dry place. Store away from incompatible materials. Store in accordance with local/regional/national regulations.
- **Information about storage in one common storage facility:** No special requirements.
- **Further information about storage conditions:** No special requirements.
- **Specific end use(s):** No relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

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- **Control parameters**

- **Exposure Guidelines:**

Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs) are values published by the American Conference of Government Industrial Hygienists (ACGIH). ACGIH Statement of Positions Regarding the TLVs® and BEIs® states that the TLV-TWA should be used as a guide in the control of health hazards and should not be used to indicate a fine line between safe and dangerous exposures. See Sections 2, 3, 8, 10, and 11 for information on potential fume constituents of health interest. Threshold Limit Values are figures published by the American Conference of Government Industrial Hygienists.

- **Components with limit values that require monitoring at the workplace:**

14808-60-7 Quartz (SiO₂)

PEL (USA)	see Quartz listing
REL (USA)	Long-term value: 0.05* mg/m ³ *respirable dust; See Pocket Guide App. A
TLV (USA)	Long-term value: 0.025* mg/m ³ *as respirable fraction
EL (Canada)	Long-term value: 0.025 mg/m ³ ACGIH A2; IARC 1
EV (Canada)	Long-term value: 0.10* mg/m ³ *respirable fraction
LMPE (Mexico)	Long-term value: 0.025* mg/m ³ A2, *fracción respirable

- **Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits. See ANSI/AWS F1.1, F1.2, F1.3 and F1.5, available from the American Welding Society, www.aws.org.

Keep away from foodstuffs, beverages and feed.

- **Engineering controls:** No relevant information available.

- **Ventilation**

Use enough ventilation, local exhaust at the arc, or both to keep the fumes and gases from the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes. Keep exposure as low as possible.

- **Breathing equipment:**

Particulate mask should filter at least 99% of airborne particles.

Keep your head out of fumes. Use enough ventilation and local exhaust to keep fumes and gases from your breathing zone and the general area. An approved respirator should be used unless exposure assessments are below applicable exposure limits.

- **Protection of hands:**



Thermally-protective gloves.

Suitable gloves can be recommended by the glove supplier.

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The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

· **Eye protection:**



Wear helmet or use face shield with filter lens shade number 12 or darker for open arc processes. No specific lens shade recommendation for submerged arc processes. Shield others by providing screens and flash goggles.

· **Body protection:** Protective work clothing

· **Limitation and supervision of exposure into the environment** No special requirements.

· **Risk management measures** No special requirements.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General information**

· **Appearance:**

Form: Powder

Color: Silver-colored

· **Odor:** Odorless

· **Odor threshold:** Not determined.

· **pH-value:** Not applicable.

· **Change in condition:**

Melting point/Melting range: Not determined.

Boiling point/Boiling range: 1682 °C (3060 °F)

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not determined.

· **Auto-ignition temperature:** Not determined.

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not self-igniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower: Not determined.

Upper: Not determined.

· **Vapor pressure:** Not applicable.

· **Density:** 2.2 g/cm³ (18.359 lbs/gal)

· **Relative density:** Not determined.

· **Vapor density:** Not applicable.

· **Evaporation rate:** Not applicable.

· **Solubility in / Miscibility with:**

Water: Partly soluble.

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- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
 - Dynamic:** Not applicable.
 - Kinematic:** Not applicable.
- **Other information** No relevant information available.

10 Stability and reactivity

- **Reactivity:** The product is non-reactive under normal conditions of use, storage and transport.
- **Chemical stability:** Stable under normal temperatures and pressures.
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions:**
Reacts with strong acids and alkali.
Reacts with strong oxidizing agents.
As the product is supplied it is not capable of dust explosion; however enrichment with fine dust causes risk of dust explosion.
- **Conditions to avoid:** Prevent formation of dust.
- **Incompatible materials:** No relevant information available.
- **Hazardous decomposition products:**
Hazardous decomposition welding fumes and gases cannot be classified simply. The composition and products: quantity of both are dependent upon the metal being welded, the process, procedure and electrodes used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating, or galvanizing), the number of welders and the volume of the worker area, the quality and amount of ventilation, the position of the welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities.)

11 Toxicological information

- **Information on likely routes of exposure**
- **Ingestion:** Possible route of exposure.
- **Inhalation:**
Potential chronic health hazards related to the use of welding consumables are most applicable to the inhalation route of exposure.
- **Skin Contact:** Arc rays can burn skin. Skin cancer has been reported.
- **Eye Contact:** Arc rays can injure eyes.
- **Information on toxicological effects**
- **Inhalation**
Short-term (acute) overexposure to welding fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema). Long-term (chronic) overexposure to welding fumes can lead to siderosis (iron deposits in lung), central nervous system effects, bronchitis and other pulmonary effects.

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- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:** None.
- **Primary irritant effect:**
- **On the skin:** Based on available data, the classification criteria are not met.
- **On the eye:** Based on available data, the classification criteria are not met.
- **Sensitization:** No sensitizing effects known.

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer):**

14808-60-7	Quartz (SiO ₂)	1
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- **NTP (National Toxicology Program):**

14808-60-7	Quartz (SiO ₂)	K
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- **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

- **Other information relevant to carcinogenicity**
Cancerous lesions have been reported in persons exposed to arc rays.
- **Repeated dose toxicity:**
Repeated or long-term inhalation of product dusts may cause pulmonary disease.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
Carc. 1A
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** May cause cancer.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No relevant information available.
- **Persistence and degradability:** No relevant information available.
- **Behavior in environmental systems**
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.
- **Additional ecological information**
- **General notes:**
Due to available data on eliminability/decomposition and bioaccumulation potential, a prolonged damage of the environment is unlikely.
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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· **Other adverse effects:** No relevant information available.

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13 Disposal considerations

· **Waste treatment methods**· **Recommendation:**

Contact waste processors for recycling information.

The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

· **Uncleaned packagings**· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **UN-Number**· **DOT, ADR, IMDG, IATA**

Not regulated.

· **UN proper shipping name**· **DOT, ADR, IMDG, IATA**

Not regulated.

· **Transport hazard class(es)**· **DOT, ADR, IMDG, IATA**· **Class**

Not regulated.

· **Packing group**· **DOT, ADR, IMDG, IATA**

Not regulated.

· **Environmental hazards**

Not applicable.

· **Special precautions for user**

Not applicable.

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**· **US Federal Regulations**

None of the ingredients are listed.

· **SARA**· **Section 313 (TRI reporting)**

None of the ingredients are listed.

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

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· **CERCLA Hazardous Substance List (40 CFR 302.4):**

None of the ingredients are listed.

· **TSCA (Toxic Substances Control Act)**

All ingredients are listed.

· **Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)**

None present or none present in regulated quantities.

· **Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):**

None present or none present in regulated quantities.

· **Proposition 65 (California)**· **Chemicals known to cause cancer:**14808-60-7 | Quartz (SiO₂)· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **Carcinogenic categories**· **EPA (Environmental Protection Agency):**

None of the ingredients are listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health):**14808-60-7 | Quartz (SiO₂)· **State Right to Know Listings**· **US. New Jersey Worker and Community Right-to-Know Act**Quartz (SiO₂)· **Canada**· **Canadian substance listings**· **Canadian Domestic Substances List (DSL):**

All ingredients are listed.

· **Canada Non-Domestic Substances List (NDSL)**

None of the ingredients are listed.

· **Canadian Ingredient Disclosure list (limit 0.1%):**

None of the ingredients are listed.

· **Canadian Ingredient Disclosure list (limit 1%):**14808-60-7 | Quartz (SiO₂)· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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16 Other information

· **Date of preparation / last revision** 12/23/2015 / -

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 DNEL: Derived No-Effect Level (REACH)
 PNEC: Predicted No-Effect Concentration (REACH)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 vPvB: very Persistent and very Bioaccumulative
 OSHA: Occupational Safety & Health
 Carc. 1A: Carcinogenicity, Hazard Category 1A

· **Sources**

Website, European Chemicals Agency (<http://echa.europa.eu/>)
 Website, US EPA Substance Registry Services (http://ofmpub.epa.gov/sor_internet/registry/substreg/home/overview/home.do)
 Website, Chemical Abstracts Registry, American Chemical Society (<https://www.cas.org>)
 Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6
 Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaassen, Curtis D., ed., ISBN: 978-0-07-176923-5.
 Safety Data Sheets, Individual Manufacturers

SDS Prepared by:

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· **Disclaimer:**

We urge each end user and recipient of this SDS to study it carefully. If necessary consult an industrial hygienist or other expert to understand this information and safeguard the environment and protect workers from potential hazards associated with the handling or use of this product.

Harris Products Group cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for use, handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

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SDS

Common Name: HERCULES PLUMBER'S CAULK -SILICONE WHITE AND CLEAR**Manufacturer:** HCC HOLDINGS**SDS Revision Date:** 5/12/2015**SDS Format:** GHS-US**Grainger Item Number(s):** 39AP03**Manufacturer Model Number(s):**

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H

HERCULES (R*)

SAFETY DATA SHEET

1. IDENTIFICATION



PRODUCT IDENTIFIER: HERCULES PLUMBER'S CAULK -SILICONE WHITE AND CLEAR

OTHER MEANS OF IDENTIFICATION:

PRODUCT CODE: 7332E

SYNONYMS:

PART NUMBERS: 25666

RECOMMENDED USE:

CAULK AND SEALANT FOR USE AROUND TUBS, SINKS AND OTHER PLUMBING APPLICATIONS.

RECOMMENDED RESTRICTIONS:

DO NOT USE ON APPLICATIONS WHERE PRODUCT WILL BE SUBMERGED UNDER WATER.

MANUFACTURER/IMPORTER/SUPPLIER/DISTRIBUTOR INFORMATION:

COMPANY NAME: HCC HOLDINGS, INC. AN OATEY AFFILIATE

ADDRESS:

4700 WEST 160TH STREET
CLEVELAND, OH 44135

TELEPHONE: 216-267-7100

E-MAIL: INFO@OATEY.COM

TRANSPORT EMERGENCY:

CHEMTREC: 1-800-424-9300 (OUTSIDE THE US 1-703-527-3887)

EMERGENCY FIRST AID: 1-877-740-5015

CONTACT PERSON: MSDS COORDINATOR

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

FLAMMABLE LIQUIDS, CATEGORY 4:

H227: COMBUSTIBLE LIQUID

SKIN IRRITATION, CATEGORY 2:

H315: CAUSES SKIN IRRITATION.

SERIOUS EYE DAMAGE, CATEGORY 1:

H318: CAUSES SERIOUS EYE DAMAGE.

REPRODUCTIVE TOXICITY, CATEGORY 2:

H361: SUSPECTED OF DAMAGING FERTILITY OR THE UNBORN CHILD.

GHS LABEL ELEMENT:

HAZARD PICTOGRAMS:

HEALTH HAZARD
CORROSION

SIGNAL WORD: DANGER

HAZARD STATEMENTS:

H227: COMBUSTIBLE LIQUID

H315: CAUSES SKIN IRRITATION.

H318: CAUSES SERIOUS EYE DAMAGE.

H361: SUSPECTED OF DAMAGING FERTILITY OR THE UNBORN CHILD.

PRECAUTIONARY STATEMENTS:

PREVENTION:

P201: OBTAIN SPECIAL INSTRUCTIONS BEFORE USE.

P202:

DO NOT HANDLE UNTIL ALL SAFETY PRECAUTIONS HAVE BEEN READ AND UNDERSTOOD.

P210: KEEP AWAY FROM HEAT/SPARKS/OPEN FLAMES/HOT SURFACES. - NO SMOKING.

P264: WASH SKIN THOROUGHLY AFTER HANDLING.

P280: WEAR EYE PROTECTION/ FACE PROTECTION.

P280: WEAR PROTECTIVE GLOVES.

P281: USE PERSONAL PROTECTIVE EQUIPMENT AS REQUIRED.

RESPONSE:

P302 + P352:

IF ON SKIN: WASH WITH PLENTY OF SOAP AND WATER.

P305 + P351 + P338:

IF IN EYES:

RINSE CAUTIOUSLY WITH WATER FOR SEVERAL MINUTES. REMOVE CONTACT LENSES, IF PRESENT AND EASY TO DO. CONTINUE RINSING.

P308 + P313:

IF EXPOSED OR CONCERNED: GET MEDICAL ADVICE/ATTENTION.

P310: IMMEDIATELY CALL A POISON CENTER OR DOCTOR/PHYSICIAN.

P332 + P313:

IF SKIN IRRITATION OCCURS: GET MEDICAL ADVICE/ATTENTION.

P362: TAKE OFF CONTAMINATED CLOTHING AND WASH BEFORE REUSE.

P370 + P378:

IN CASE OF FIRE:

USE EXTINGUISHING MEASURES THAT ARE APPROPRIATE TO LOCAL CIRCUMSTANCES AND THE SURROUNDING ENVIRONMENT FOR EXTINCTION.

STORAGE:

P403 + P235: STORE IN A WELL-VENTILATED PLACE. KEEP COOL.

P405: STORE LOCKED UP.

DISPOSAL:

P501: DISPOSE OF CONTENTS/ CONTAINER TO AN APPROVED WASTE DISPOSAL PLANT.

SEE SECTION 11 FOR MORE DETAILED INFORMATION ON HEALTH EFFECTS AND SYMPTOMS.

3. COMPOSITION/INFORMATION ON INGREDIENTS



HAZARDOUS INGREDIENTS:

CHEMICAL NAME	CAS-NO.	CONCENTRATION (%)
POLYSILOXANEDIOL	70131-67-8	>=50 - <=100%
OCTAMETHYLCYCLOTETRA-SILOXANE	556-67-2	>=2 - <5%
METHYLSILANETRIYL-TRIACETATE	4253-34-3	>=2 - <5%

THERE ARE NO ADDITIONAL INGREDIENTS PRESENT WHICH, WITHIN THE CURRENT KNOWLEDGE OF THE SUPPLIER AND IN THE CONCENTRATIONS APPLICABLE, ARE CLASSIFIED AS HAZARDOUS TO HEALTH OR THE ENVIRONMENT AND HENCE REQUIRE REPORTING IN THIS SECTION.

4. FIRST AID MEASURES



IF INHALED:
MOVE TO FRESH AIR.
CONSULT A PHYSICIAN AFTER SIGNIFICANT EXPOSURE.

IN CASE OF SKIN CONTACT:
TAKE OFF CONTAMINATED CLOTHING AND SHOES IMMEDIATELY.
WASH OFF WITH SOAP AND PLENTY OF WATER.
IF SYMPTOMS PERSIST, CALL A PHYSICIAN.

IN CASE OF EYE CONTACT:
SMALL AMOUNTS SPLASHED INTO EYES CAN CAUSE IRREVERSIBLE TISSUE DAMAGE AND
BLINDNESS.

IN THE CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER
AND SEEK MEDICAL ADVICE.

CONTINUE RINSING EYES DURING TRANSPORT TO HOSPITAL.

REMOVE CONTACT LENSES.

KEEP EYE WIDE OPEN WHILE RINSING.

IF SWALLOWED:
CLEAN MOUTH WITH WATER AND DRINK AFTERWARDS PLENTY OF WATER.
INDUCE VOMITING IMMEDIATELY AND CALL A PHYSICIAN.
DO NOT INDUCE VOMITING.
DO NOT GIVE MILK OR ALCOHOLIC BEVERAGES.
NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:
IRRITANT EFFECTS

EXCESSIVE LACHRYMATION

ERYTHEMA

DERMATITIS

SEE SECTION 11 FOR MORE DETAILED INFORMATION ON HEALTH EFFECTS AND
SYMPTOMS.

PROTECTION OF FIRST-AIDERS:
MOVE OUT OF DANGEROUS AREA.
CONSULT A PHYSICIAN.
SHOW THIS MATERIAL SAFETY DATA SHEET TO THE DOCTOR IN ATTENDANCE.

NOTES TO PHYSICIAN: TREAT SYMPTOMATICALLY.

5. FIRE-FIGHTING MEASURES



SUITABLE EXTINGUISHING MEDIA: CARBON DIOXIDE (CO2)

UNSUITABLE EXTINGUISHING MEDIA: WATER

SPECIFIC EXTINGUISHING METHODS:
COLLECT CONTAMINATED FIRE EXTINGUISHING WATER SEPARATELY. THIS MUST NOT BE
DISCHARGED INTO DRAINS.

FIRE RESIDUES AND CONTAMINATED FIRE EXTINGUISHING WATER MUST BE DISPOSED OF

IN ACCORDANCE WITH LOCAL REGULATIONS.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS:

IN THE EVENT OF FIRE, WEAR SELF-CONTAINED BREATHING APPARATUS.

6. ACCIDENTAL RELEASE MEASURES



PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

USE PERSONAL PROTECTIVE EQUIPMENT.

DENY ACCESS TO UNPROTECTED PERSONS.

ENVIRONMENTAL PRECAUTIONS:

DO NOT FLUSH INTO SURFACE WATER OR SANITARY SEWER SYSTEM.

IF THE PRODUCT CONTAMINATES RIVERS AND LAKES OR DRAINS INFORM RESPECTIVE AUTHORITIES.

LOCAL AUTHORITIES SHOULD BE ADVISED IF SIGNIFICANT SPILLAGES CANNOT BE CONTAINED.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP:

SOAK UP WITH INERT ABSORBENT MATERIAL (E.G. SAND, SILICA GEL, ACID BINDER, UNIVERSAL BINDER, SAWDUST).

KEEP IN SUITABLE, CLOSED CONTAINERS FOR DISPOSAL.

7. HANDLING AND STORAGE



ADVICE ON SAFE HANDLING:

DO NOT BREATHE VAPORS OR SPRAY MIST.

AVOID EXCEEDING THE GIVEN OCCUPATIONAL EXPOSURE LIMITS (SEE SECTION 8).

DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING.

FOR PERSONAL PROTECTION SEE SECTION 8.

SMOKING, EATING AND DRINKING SHOULD BE PROHIBITED IN THE APPLICATION AREA.

FOLLOW STANDARD HYGIENE MEASURES WHEN HANDLING CHEMICAL PRODUCTS.

CONDITIONS FOR SAFE STORAGE:

STORE IN ORIGINAL CONTAINER.

KEEP IN A WELL-VENTILATED PLACE.

OBSERVE LABEL PRECAUTIONS.

STORE IN ACCORDANCE WITH LOCAL REGULATIONS.

MATERIALS TO AVOID: NO DATA AVAILABLE

8. EXPOSURE CONTROLS/PERSONAL PROTECTION



CONTAINS NO SUBSTANCES WITH OCCUPATIONAL EXPOSURE LIMIT VALUES.

ENGINEERING MEASURES:

USE OF ADEQUATE VENTILATION SHOULD BE SUFFICIENT TO CONTROL WORKER EXPOSURE TO AIRBORNE CONTAMINANTS. IF THE USE OF THIS PRODUCT GENERATES DUST, FUMES, GAS, VAPOR OR MIST, USE PROCESS ENCLOSURES, LOCAL EXHAUST VENTILATION OR OTHER ENGINEERING CONTROLS TO KEEP WORKER EXPOSURE BELOW ANY RECOMMENDED OR STATUTORY LIMITS.

THE ENGINEERING CONTROLS ALSO NEED TO KEEP GAS, VAPOR OR DUST CONCENTRATIONS BELOW ANY LOWER EXPLOSIVE LIMITS.

PERSONAL PROTECTIVE EQUIPMENT:**RESPIRATORY PROTECTION:**

USE A PROPERLY FITTED NIOSH APPROVED AIR-PURIFYING OR AIR-FED RESPIRATOR COMPLYING WITH AN APPROVED STANDARD IF A RISK ASSESSMENT INDICATES THIS IS NECESSARY.

THE FILTER CLASS FOR THE RESPIRATOR MUST BE SUITABLE FOR THE MAXIMUM EXPECTED CONTAMINANT CONCENTRATION (GAS/VAPOR/AEROSOL/PARTICULATES) THAT MAY ARISE WHEN HANDLING THE PRODUCT. IF THIS CONCENTRATION IS EXCEEDED, SELF-CONTAINED BREATHING APPARATUS MUST BE USED.

HAND PROTECTION:**REMARKS:**

CHEMICAL-RESISTANT, IMPERVIOUS GLOVES COMPLYING WITH AN APPROVED STANDARD SHOULD BE WORN AT ALL TIMES WHEN HANDLING CHEMICAL PRODUCTS IF A RISK ASSESSMENT INDICATES THIS IS NECESSARY.

EYE PROTECTION:

SAFETY EYEWEAR COMPLYING WITH AN APPROVED STANDARD SHOULD BE USED WHEN A RISK ASSESSMENT INDICATES THIS IS NECESSARY.

SKIN AND BODY PROTECTION:

CHOOSE BODY PROTECTION IN RELATION TO ITS TYPE, TO THE CONCENTRATION AND AMOUNT OF DANGEROUS SUBSTANCES, AND TO THE SPECIFIC WORK-PLACE.

HYGIENE MEASURES:

AVOID CONTACT WITH SKIN, EYES AND CLOTHING.

WASH HANDS BEFORE BREAKS AND IMMEDIATELY AFTER HANDLING THE PRODUCT.

REMOVE RESPIRATORY AND SKIN/EYE PROTECTION ONLY AFTER VAPORS HAVE BEEN CLEARED FROM THE AREA.

REMOVE CONTAMINATED CLOTHING AND PROTECTIVE EQUIPMENT BEFORE ENTERING EATING AREAS.

WASH THOROUGHLY AFTER HANDLING.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: PASTE

COLOR: RED

ODOR: VINEGAR-LIKE

ODOR THRESHOLD: NO DATA AVAILABLE

FLASH POINT: 199 DEG. F (93 DEG. C)

IGNITION TEMPERATURE: NOT APPLICABLE

DECOMPOSITION TEMPERATURE: NO DATA AVAILABLE

LOWER EXPLOSION LIMIT (VOL%): NO DATA AVAILABLE

UPPER EXPLOSION LIMIT (VOL%): NO DATA AVAILABLE

FLAMMABILITY (SOLID, GAS): NO DATA AVAILABLE

OXIDIZING PROPERTIES: NO DATA AVAILABLE

AUTOIGNITION TEMPERATURE: NO DATA AVAILABLE

PH:

NOTE: NOT APPLICABLE

MELTING POINT/RANGE / FREEZING POINT: NO DATA AVAILABLE

BOILING POINT/BOILING RANGE: NO DATA AVAILABLE

VAPOR PRESSURE: NO DATA AVAILABLE

DENSITY: CA. 1.06 G/CM3 AT 73 DEG. F (23 DEG. C)

WATER SOLUBILITY:

NOTE: INSOLUBLE

PARTITION COEFFICIENT N-OCTANOL/WATER: NO DATA AVAILABLE

VISCOSITY, DYNAMIC: NO DATA AVAILABLE

VISCOSITY, KINEMATIC: >20.5 MM2/S AT 104 DEG. F (40 DEG. C)

RELATIVE VAPOR DENSITY: NO DATA AVAILABLE

EVAPORATION RATE: NO DATA AVAILABLE

BURNING RATE: NO DATA AVAILABLE

VOLATILE ORGANIC COMPOUNDS (VOC) CONTENT: 20 G/L

10. STABILITY AND REACTIVITY



REACTIVITY: NO DANGEROUS REACTION KNOWN UNDER CONDITIONS OF NORMAL USE.

CHEMICAL STABILITY: THE PRODUCT IS CHEMICALLY STABLE.

POSSIBILITY OF HAZARDOUS REACTIONS:

STABLE UNDER RECOMMENDED STORAGE CONDITIONS.

CONDITIONS TO AVOID: EXTREMES OF TEMPERATURE AND DIRECT SUNLIGHT.

INCOMPATIBLE MATERIALS: NO DATA AVAILABLE

11. TOXICOLOGICAL INFORMATION



ACUTE TOXICITY:

PRODUCT:

ACUTE ORAL TOXICITY: NO DATA AVAILABLE

ACUTE INHALATION TOXICITY: NO DATA AVAILABLE

ACUTE DERMAL TOXICITY: NO DATA AVAILABLE

INGREDIENTS:

OCTAMETHYLCYCLOTETRAISILOXANE:

ACUTE INHALATION TOXICITY:

LC50 RAT: 36 MG/L

EXPOSURE TIME: 4 H

SKIN CORROSION/IRRITATION:

PRODUCT: CAUSES SKIN IRRITATION.

SERIOUS EYE DAMAGE/EYE IRRITATION:

PRODUCT: CAUSES SERIOUS EYE DAMAGE.

RESPIRATORY OR SKIN SENSITIZATION:

PRODUCT: NO DATA AVAILABLE

GERM CELL MUTAGENICITY:

PRODUCT:

MUTAGENICITY: NO DATA AVAILABLE

CARCINOGENICITY:

PRODUCT:

CARCINOGENICITY: NO DATA AVAILABLE

IARC: NOT APPLICABLE

NTP: NOT APPLICABLE

REPRODUCTIVE TOXICITY/FERTILITY:

PRODUCT:

REPRODUCTIVE TOXICITY: SUSPECTED OF DAMAGING FERTILITY OR THE UNBORN CHILD.

REPRODUCTIVE TOXICITY/DEVELOPMENT/TERATOGENICITY:

PRODUCT:

TERATOGENICITY: NO DATA AVAILABLE

STOT-SINGLE EXPOSURE:

PRODUCT:

ASSESSMENT: NO DATA AVAILABLE

STOT-REPEATED EXPOSURE:

PRODUCT:

ASSESSMENT: NO DATA AVAILABLE

ASPIRATION TOXICITY:

PRODUCT: NO DATA AVAILABLE

12. ECOLOGICAL INFORMATION

OTHER INFORMATION:

DO NOT EMPTY INTO DRAINS; DISPOSE OF THIS MATERIAL AND ITS CONTAINER IN A SAFE WAY.

AVOID DISPERSAL OF SPILLED MATERIAL AND RUNOFF AND CONTACT WITH SOIL, WATERWAYS, DRAINS AND SEWERS.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS:

WASTE FROM RESIDUES:

DISPOSAL OF THIS PRODUCT, SOLUTIONS AND ANY BY-PRODUCTS SHOULD AT ALL TIMES COMPLY WITH THE REQUIREMENTS OF ENVIRONMENTAL PROTECTION AND WASTE DISPOSAL LEGISLATION AND ANY REGIONAL LOCAL AUTHORITY REQUIREMENTS.

CONTAMINATED PACKAGING:

EMPTY CONTAINERS SHOULD BE TAKEN TO AN APPROVED WASTE HANDLING SITE FOR RECYCLING OR DISPOSAL.

14. TRANSPORT INFORMATION

DOT: NOT DANGEROUS GOODS

IATA: NOT DANGEROUS GOODS

IMDG: NOT DANGEROUS GOODS

SPECIAL PRECAUTIONS FOR USER: NO DATA AVAILABLE

TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE:
NOT APPLICABLE

15. REGULATORY INFORMATION

TSCA LIST:

ALL CHEMICAL SUBSTANCES IN THIS PRODUCT ARE EITHER LISTED ON THE TSCA INVENTORY OR ARE IN COMPLIANCE WITH A TSCA INVENTORY EXEMPTION.

EPCRA - EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW:

CERCLA REPORTABLE QUANTITY:

THIS MATERIAL DOES NOT CONTAIN ANY COMPONENTS WITH A CERCLA RQ.

SARA304 REPORTABLE QUANTITY:

THIS MATERIAL DOES NOT CONTAIN ANY COMPONENTS WITH A SECTION 304 EHS RQ.

SARA 311/312 HAZARDS:

ACUTE HEALTH HAZARD

CHRONIC HEALTH HAZARD

FIRE HAZARD

SARA 302:

SARA 302:

NO CHEMICALS IN THIS MATERIAL ARE SUBJECT TO THE REPORTING REQUIREMENTS OF SARA TITLE III, SECTION 302.

SARA 313:

SARA 313:

THIS MATERIAL DOES NOT CONTAIN ANY CHEMICAL COMPONENTS WITH KNOWN CAS NUMBERS THAT EXCEED THE THRESHOLD (DE MINIMIS) REPORTING LEVELS ESTABLISHED BY SARA TITLE III, SECTION 313.

CLEAN AIR ACT:

OZONE-DEPLETION POTENTIAL:

THIS PRODUCT NEITHER CONTAINS, NOR WAS MANUFACTURED WITH A CLASS I OR CLASS II ODS AS DEFINED BY THE U.S. CLEAN AIR ACT SECTION 602 (40 CFR 82, SUBPT. A, APP.A + B).

THIS PRODUCT DOES NOT CONTAIN ANY HAZARDOUS AIR POLLUTANTS (HAP), AS DEFINED BY THE U.S. CLEAN AIR ACT SECTION 12 (40 CFR 61).

THIS PRODUCT DOES NOT CONTAIN ANY CHEMICALS LISTED UNDER THE U.S. CLEAN AIR ACT SECTION 112(R) FOR ACCIDENTAL RELEASE PREVENTION (40 CFR 68.130, SUBPART F).

CALIFORNIA PROP 65:

THIS PRODUCT DOES NOT CONTAIN ANY CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH, OR ANY OTHER REPRODUCTIVE DEFECTS.

16. OTHER INFORMATION

ISSUE DATE: 12-MAY-2015

REVISION DATE:

VERSION #: 01

HMIS RATING:

HEALTH	2
FLAMMABILITY	1
PHYSICAL HAZARDS	0

DISCLAIMER:

HCC HOLDINGS INC. AN OATEY AFFILIATE CANNOT ANTICIPATE ALL CONDITIONS UNDER WHICH THIS INFORMATION AND ITS PRODUCT, OR THE PRODUCTS OF OTHER MANUFACTURERS IN COMBINATION WITH ITS PRODUCT, MAY BE USED. IT IS THE USER'S RESPONSIBILITY TO ENSURE SAFE CONDITIONS FOR HANDLING, STORAGE AND DISPOSAL OF THE PRODUCT, AND TO ASSUME LIABILITY FOR LOSS, INJURY, DAMAGE OR EXPENSE DUE TO IMPROPER USE. THE INFORMATION IN THE SHEET WAS WRITTEN BASED ON THE BEST KNOWLEDGE AND EXPERIENCE CURRENTLY AVAILABLE.

HERCULES HIGH TEMP RED

SDS: #7332E

SDS US



Safety Data Sheet

1. Identification

Product identifier	Hercules Plumber's Caulk –Silicone White and Clear
Other means of identification	
Product code	7332E
Synonyms	Part Numbers: 25666
Recommended use	Caulk and sealant for use around tubs, sinks and other plumbing applications.
Recommended restrictions	Do not use on applications where product will be submerged under water.
Manufacturer/Importer/Supplier/Distributor information	
Company Name	HCC Holdings, Inc. an Oatey Affiliate
Address	4700 West 160th Street Cleveland, OH 44135
Telephone	216-267-7100
E-mail	info@oatey.com
Transport Emergency	Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)
Emergency First Aid	1-877-740-5015
Contact person	MSDS Coordinator

2. Hazards identification

GHS Classification

Flammable liquids , Category 4	H227: Combustible liquid
Skin irritation , Category 2	H315: Causes skin irritation.
Serious eye damage , Category 1	H318: Causes serious eye damage.
Reproductive toxicity , Category 2	H361: Suspected of damaging fertility or the unborn child.

GHS Label element

Hazard pictograms	:	
Signal Word	:	Danger
Hazard Statements	:	H227 Combustible liquid H315 Causes skin irritation. H318 Causes serious eye damage. H361 Suspected of damaging fertility or the unborn child.
Precautionary Statements	:	Prevention: P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking. P264 Wash skin thoroughly after handling. P280 Wear eye protection/ face protection.

P280 Wear protective gloves.

P281 Use personal protective equipment as required.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P313 IF exposed or concerned: Get medical advice/attention.

P310 Immediately call a POISON CENTER or doctor/physician.

P332 + P313 If skin irritation occurs: Get medical advice/attention.

P362 Take off contaminated clothing and wash before reuse.

P370 + P378 In case of fire: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment for extinction.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

See Section 11 for more detailed information on health effects and symptoms.

3. Composition/information on ingredients

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
Polysiloxanediol	70131-67-8	>= 50 - <= 100 %
octamethylcyclotetrasiloxane	556-67-2	>= 2 - < 5 %
methylsilanetriyl-triacetate	4253-34-3	>= 2 - < 5 %

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

If inhaled	: Move to fresh air. Consult a physician after significant exposure.
In case of skin contact	: Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. If symptoms persist, call a physician.
In case of eye contact	: Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

	Continue rinsing eyes during transport to hospital. Remove contact lenses. Keep eye wide open while rinsing.
If swallowed	: Clean mouth with water and drink afterwards plenty of water. Induce vomiting immediately and call a physician. Do NOT induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	: irritant effects Excessive lachrymation Erythema Dermatitis See Section 11 for more detailed information on health effects and symptoms.
Protection of first-aiders	: Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance.
Notes to physician	: Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media	: Carbon dioxide (CO ₂)
Unsuitable extinguishing media	: Water
Specific extinguishing methods	: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters	: In the event of fire, wear self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment. Deny access to unprotected persons.
Environmental precautions	: Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

7. Handling and storage

Advice on safe handling	: Do not breathe vapors or spray mist. Avoid exceeding the given occupational exposure limits (see section 8). Do not get in eyes, on skin, or on clothing. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Follow standard hygiene measures when handling chemical products.
Conditions for safe storage	: Store in original container. Keep in a well-ventilated place. Observe label precautions. Store in accordance with local regulations.
Materials to avoid	: no data available

8. Exposure controls/personal protection

Contains no substances with occupational exposure limit values.

Engineering measures	: Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits.
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Personal protective equipment

Respiratory protection	: Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.
Hand protection Remarks	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eye protection	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.
Skin and body protection	: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to

the specific work-place.

Hygiene measures : Avoid contact with skin, eyes and clothing.
Wash hands before breaks and immediately after handling the product.
Remove respiratory and skin/eye protection only after vapors have been cleared from the area.
Remove contaminated clothing and protective equipment before entering eating areas.
Wash thoroughly after handling.

9. Physical and chemical properties

Appearance	: paste
Color	: red
Odor	: vinegar-like
Odor Threshold	: no data available
Flash point	: 199 °F (93 °C)
Ignition temperature	: not applicable
Decomposition temperature	: no data available
Lower explosion limit (Vol%)	: no data available
Upper explosion limit (Vol%)	: no data available
Flammability (solid, gas)	: no data available
Oxidizing properties	: no data available
Autoignition temperature	: no data available
pH	: Note: not applicable
Melting point/range / Freezing point	: no data available
Boiling point/boiling range	: no data available
Vapor pressure	: no data available
Density	: ca.1.06 g/cm3 at 73 °F (23 °C)
Water solubility	: Note: insoluble
Partition coefficient: n- octanol/water	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: > 20.5 mm2/s at 104 °F (40 °C)

Relative vapor density : no data available
Evaporation rate : no data available
Burning rate : no data available
Volatile organic compounds (VOC) content : 20 g/l

10. Stability and reactivity

Reactivity : No dangerous reaction known under conditions of normal use.
Chemical stability : The product is chemically stable.
Possibility of hazardous reactions : Stable under recommended storage conditions.
Conditions to avoid : Extremes of temperature and direct sunlight.
Incompatible materials : no data available

11. Toxicological information

Acute toxicity

Product

Acute oral toxicity : no data available
Acute inhalation toxicity : no data available
Acute dermal toxicity : no data available

Ingredients:

octamethylcyclotetrasiloxane :

Acute inhalation toxicity : LC50 rat: 36 mg/l
Exposure time: 4 h

Skin corrosion/irritation

Product

Causes skin irritation.

Serious eye damage/eye irritation

Product

Causes serious eye damage.

Respiratory or skin sensitization

Product

no data available

Germ cell mutagenicity

Product

Mutagenicity : no data available

Carcinogenicity

Product

Carcinogenicity : no data available

IARC

not applicable

NTP

not applicable

Reproductive Toxicity/Fertility

Product

Reproductive toxicity : Suspected of damaging fertility or the unborn child.

Reproductive Toxicity/Development/Teratogenicity

Product

Teratogenicity : no data available

STOT-single exposure

Product

Assessment: no data available

STOT-repeated exposure

Product

Assessment: no data available

Aspiration toxicity

Product

no data available

12. Ecological information

Other information

Do not empty into drains; dispose of this material and its container in a safe way.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

13. Disposal considerations

Disposal methods

- Waste from residues : Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
- Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not dangerous goods

IATA

Not dangerous goods

IMDG

Not dangerous goods

Special precautions for user

no data available

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

15. Regulatory information

- TSCA list** : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA304 Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

- SARA 311/312 Hazards** : Acute Health Hazard
Chronic Health Hazard
Fire Hazard

- SARA 302** : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313

: SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act**Ozone-Depletion
Potential**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

California Prop 65

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

16. Other information

Issue Date 12-May-2015

Revision Date -

Version # 01

HMIS Rating Health: 2
Flammability: 1
Physical Hazards: 0

Disclaimer HCC Holdings Inc. an Oatey Affiliate cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.



SAFETY DATA SHEET

1. Identification

Product identifier Hercules MegaBubble

Other means of identification

Product code 7322E

Synonyms Part Numbers: 45801, 45802, 45803, 45804

Recommended use Leak Detector

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name HCC Holdings, Inc. an Oatey Affiliate

Address 4700 West 160th Street
Cleveland, OH 44135

Telephone 216-267-7100

E-mail info@oatey.com

Transport Emergency Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)

Emergency First Aid 1-877-740-5015

Contact person MSDS Coordinator

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards Hazardous to the aquatic environment, acute Not applicable hazard

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement The mixture does not meet the criteria for classification.

Precautionary statement

Prevention Observe good industrial hygiene practices.

Response Wash hands after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Propylene glycol	57-55-6	30-60
Water	7732-18-5	30-60
Glycerol	56-81-5	10-30

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.

Skin contact Rinse skin with water/shower. Get medical attention if irritation develops and persists.

Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	<p>Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.</p> <p>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p> <p>Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.</p>
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Avoid prolonged exposure. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Glycerol (CAS 56-81-5)	PEL	5 mg/m3 15 mg/m3	Respirable fraction. Total dust.

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value	Form
Propylene glycol (CAS 57-55-6)	TWA	10 mg/m3	Aerosol.

Biological limit values	No biological exposure limits noted for the ingredient(s).
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Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear suitable protective clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Liquid.
Color	Blue.
Odor	Odorless.
Odor threshold	Not available.
pH	7.2
Melting point/freezing point	Not available.
Initial boiling point and boiling range	212 °F (100 °C)
Flash point	> 212.0 °F (> 100.0 °C)
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.

Vapor pressure	Not available.
Vapor density	Not available.
Relative density	1.05
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	100 cP
Other information	
VOC (Weight %)	435 g/l

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.

Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics
Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity

Components	Species	Test Results
Glycerol (CAS 56-81-5)		
Acute		
<i>Oral</i>		
LD50	Rat	12600 mg/kg
Propylene glycol (CAS 57-55-6)		
Acute		
<i>Oral</i>		
LD50	Rat	30 g/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.

Germ cell mutagenicity
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity
This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity
This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure
Not classified.

Specific target organ toxicity - repeated exposure
Not classified.

Aspiration hazard
Not an aspiration hazard.

Chronic effects
Prolonged inhalation may be harmful.

Further information
This product has no known adverse effect on human health.

12. Ecological information

Ecotoxicity
The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components		Species	Test Results
Propylene glycol (CAS 57-55-6)			
Aquatic			
Crustacea	LC50	Ceriodaphnia dubia	18340 mg/l, 48 hours
Fish	LC50	Pimephales promelas	46500 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Glycerol (CAS 56-81-5)	-1.76
Propylene glycol (CAS 57-55-6)	-0.92

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Glycerol (CAS 56-81-5)

US. New Jersey Worker and Community Right-to-Know Act

Glycerol (CAS 56-81-5)

Propylene glycol (CAS 57-55-6)

US. Pennsylvania Worker and Community Right-to-Know Law

Glycerol (CAS 56-81-5)

Propylene glycol (CAS 57-55-6)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 05-February-2015

Revision date -

Version # 01

HMIS® ratings
Health: 0
Flammability: 0
Physical hazard: 0

Disclaimer
HCC Holdings Inc. an Oatey Affiliate cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.



SAFETY DATA SHEET

1. Identification

Product identifier	Hercules Megaloc
Other means of identification	
Product code	7305E
Synonyms	Part Numbers: 15802, 15804, 15806, 15808, 15811, 15814, 15816, 15818, 15821
Recommended use	Pipe thread sealant.
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Company Name	HCC Holdings, Inc. an Oatey Affiliate
Address	4700 West 160th Street Cleveland, OH 44135
Telephone	216-267-7100
E-mail	info@oatey.com
Transport Emergency	Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)
Emergency First Aid	1-877-740-5015
Contact person	MSDS Coordinator

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
OSHA defined hazards	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	The mixture does not meet the criteria for classification.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC)	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. The thermal decomposition vapors of fluorinated polymers may cause polymer fume fever.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Petroleum-based Lubricating Oil	64741-88-4	30-60
Kaolin	1332-58-7	10-30
Talc	14807-96-6	10-30
Magnesium carbonate	546-93-0	1-10
Poly (P-phenylenediamine terephthalamide)	26125-61-1	1-5
Titanium Dioxide	13463-67-7	1-5
Silica, amorphous, fumed	112945-52-5	0.5-1.5

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	<p>This product is miscible in water.</p> <p>Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.</p> <p>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p> <p>Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.</p>
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Avoid prolonged exposure. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Kaolin (CAS 1332-58-7)	PEL	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Magnesium carbonate (CAS 546-93-0)	PEL	5 mg/m3	Respirable fraction.
Petroleum-based Lubricating Oil (CAS 64741-88-4)	PEL	15 mg/m3 5 mg/m3	Total dust. Mist.
Titanium Dioxide (CAS 13463-67-7)	PEL	2000 mg/m3 500 ppm 15 mg/m3	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Crystalline silica (Quartz) (CAS 14808-60-7)	TWA	0.3 mg/m3	Total dust.
Talc (CAS 14807-96-6)	TWA	0.1 mg/m3 0.3 mg/m3 0.1 mg/m3 20 mppcf 2.4 mppcf	Respirable. Total dust. Respirable. Respirable.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Crystalline silica (Quartz) (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.
Kaolin (CAS 1332-58-7)	TWA	2 mg/m3	Respirable fraction.
Petroleum-based Lubricating Oil (CAS 64741-88-4)	TWA	5 mg/m3	Inhalable fraction.
Talc (CAS 14807-96-6)	TWA	2 mg/m3	Respirable fraction.
Titanium Dioxide (CAS 13463-67-7)	TWA	10 mg/m3	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Crystalline silica (Quartz) (CAS 14808-60-7)	TWA	0.05 mg/m3	Respirable dust.
Kaolin (CAS 1332-58-7)	TWA	5 mg/m3 10 mg/m3	Respirable. Total
Magnesium carbonate (CAS 546-93-0)	TWA	5 mg/m3	Respirable.
Petroleum-based Lubricating Oil (CAS 64741-88-4)	STEL	10 mg/m3 10 mg/m3	Total Mist.
Talc (CAS 14807-96-6)	TWA	5 mg/m3	Mist.
	TWA	2 mg/m3	Respirable.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other	Wear suitable protective clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Liquid paste.
Color	Blue.
Odor	Odorless.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	> 212.0 °F (> 100.0 °C)
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	1.2 g/cm3
Solubility(ies)	
Solubility (water)	Slightly Soluble
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	30000 cP
Other information	
VOC (Weight %)	4 g/l

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Acids.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
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Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Information on toxicological effects	
Acute toxicity	Not available.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.)
IARC Monographs. Overall Evaluation of Carcinogenicity	
Crystalline silica (Quartz) (CAS 14808-60-7)	1 Carcinogenic to humans.
Petroleum-based Lubricating Oil (CAS 64741-88-4)	3 Not classifiable as to carcinogenicity to humans.
Titanium Dioxide (CAS 13463-67-7)	2B Possibly carcinogenic to humans.
NTP Report on Carcinogens	
Crystalline silica (Quartz) (CAS 14808-60-7)	Known To Be Human Carcinogen.
Petroleum-based Lubricating Oil (CAS 64741-88-4)	Known To Be Human Carcinogen.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not listed.	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.
Further information	This product has no known adverse effect on human health.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Crystalline silica (Quartz) (CAS 14808-60-7)
Kaolin (CAS 1332-58-7)
Magnesium carbonate (CAS 546-93-0)
Petroleum-based Lubricating Oil (CAS 64741-88-4)
Talc (CAS 14807-96-6)
Titanium Dioxide (CAS 13463-67-7)

US. New Jersey Worker and Community Right-to-Know Act

Crystalline silica (Quartz) (CAS 14808-60-7)
Kaolin (CAS 1332-58-7)
Magnesium carbonate (CAS 546-93-0)

Talc (CAS 14807-96-6)
Titanium Dioxide (CAS 13463-67-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Crystalline silica (Quartz) (CAS 14808-60-7)
Kaolin (CAS 1332-58-7)
Talc (CAS 14807-96-6)
Titanium Dioxide (CAS 13463-67-7)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Crystalline silica (Quartz) (CAS 14808-60-7)
Di-"isononyl" phthalate (CAS 28553-12-0)
Titanium Dioxide (CAS 13463-67-7)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 05-February-2015

Revision date -

Version # 01

HMIS® ratings Health: 0
Flammability: 1
Physical hazard: 0

NFPA ratings



Disclaimer

HCC Holdings Inc. an Oatey Affiliate cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.



SAFETY DATA SHEET

1. Identification

Product identifier Hercules Megaloc

Other means of identification

Product code 7305E

Synonyms Part Numbers: 15802, 15804, 15806, 15808, 15811, 15814, 15816, 15818, 15821

Recommended use Pipe thread sealant.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name HCC Holdings, Inc. an Oatey Affiliate

Address 4700 West 160th Street
Cleveland, OH 44135

Telephone 216-267-7100

E-mail info@oatey.com

Transport Emergency Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)

Emergency First Aid 1-877-740-5015

Contact person MSDS Coordinator

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement The mixture does not meet the criteria for classification.

Precautionary statement

Prevention Observe good industrial hygiene practices.

Response Wash hands after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
The thermal decomposition vapors of fluorinated polymers may cause polymer fume fever.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Petroleum-based Lubricating Oil	64741-88-4	30-60
Kaolin	1332-58-7	10-30
Talc	14807-96-6	10-30
Magnesium carbonate	546-93-0	1-10
Poly (P-phenylenediamine terephthalamide)	26125-61-1	1-5
Titanium Dioxide	13463-67-7	1-5
Silica, amorphous, fumed	112945-52-5	0.5-1.5

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	<p>This product is miscible in water.</p> <p>Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.</p> <p>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p> <p>Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.</p>
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Avoid prolonged exposure. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Kaolin (CAS 1332-58-7)	PEL	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Magnesium carbonate (CAS 546-93-0)	PEL	5 mg/m3	Respirable fraction.
Petroleum-based Lubricating Oil (CAS 64741-88-4)	PEL	15 mg/m3 5 mg/m3	Total dust. Mist.
Titanium Dioxide (CAS 13463-67-7)	PEL	2000 mg/m3 500 ppm 15 mg/m3	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Crystalline silica (Quartz) (CAS 14808-60-7)	TWA	0.3 mg/m3	Total dust.
Talc (CAS 14807-96-6)	TWA	0.1 mg/m3 0.3 mg/m3 0.1 mg/m3 20 mppcf 2.4 mppcf	Respirable. Total dust. Respirable. Respirable.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Crystalline silica (Quartz) (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.
Kaolin (CAS 1332-58-7)	TWA	2 mg/m3	Respirable fraction.
Petroleum-based Lubricating Oil (CAS 64741-88-4)	TWA	5 mg/m3	Inhalable fraction.
Talc (CAS 14807-96-6)	TWA	2 mg/m3	Respirable fraction.
Titanium Dioxide (CAS 13463-67-7)	TWA	10 mg/m3	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Crystalline silica (Quartz) (CAS 14808-60-7)	TWA	0.05 mg/m3	Respirable dust.
Kaolin (CAS 1332-58-7)	TWA	5 mg/m3 10 mg/m3	Respirable. Total
Magnesium carbonate (CAS 546-93-0)	TWA	5 mg/m3	Respirable.
Petroleum-based Lubricating Oil (CAS 64741-88-4)	STEL	10 mg/m3 10 mg/m3	Total Mist.
Talc (CAS 14807-96-6)	TWA	5 mg/m3	Mist.
	TWA	2 mg/m3	Respirable.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Wear safety glasses with side shields (or goggles).

Skin protection**Hand protection**

Wear appropriate chemical resistant gloves.

Other	Wear suitable protective clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Liquid paste.
Color	Blue.
Odor	Odorless.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	> 212.0 °F (> 100.0 °C)
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	1.2 g/cm ³
Solubility(ies)	
Solubility (water)	Slightly Soluble
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	30000 cP
Other information	
VOC (Weight %)	4 g/l

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Acids.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
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Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Information on toxicological effects	
Acute toxicity	Not available.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.)
IARC Monographs. Overall Evaluation of Carcinogenicity	
Crystalline silica (Quartz) (CAS 14808-60-7)	1 Carcinogenic to humans.
Petroleum-based Lubricating Oil (CAS 64741-88-4)	3 Not classifiable as to carcinogenicity to humans.
Titanium Dioxide (CAS 13463-67-7)	2B Possibly carcinogenic to humans.
NTP Report on Carcinogens	
Crystalline silica (Quartz) (CAS 14808-60-7)	Known To Be Human Carcinogen.
Petroleum-based Lubricating Oil (CAS 64741-88-4)	Known To Be Human Carcinogen.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not listed.	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.
Further information	This product has no known adverse effect on human health.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Crystalline silica (Quartz) (CAS 14808-60-7)
Kaolin (CAS 1332-58-7)
Magnesium carbonate (CAS 546-93-0)
Petroleum-based Lubricating Oil (CAS 64741-88-4)
Talc (CAS 14807-96-6)
Titanium Dioxide (CAS 13463-67-7)

US. New Jersey Worker and Community Right-to-Know Act

Crystalline silica (Quartz) (CAS 14808-60-7)
Kaolin (CAS 1332-58-7)
Magnesium carbonate (CAS 546-93-0)

Talc (CAS 14807-96-6)
Titanium Dioxide (CAS 13463-67-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Crystalline silica (Quartz) (CAS 14808-60-7)
Kaolin (CAS 1332-58-7)
Talc (CAS 14807-96-6)
Titanium Dioxide (CAS 13463-67-7)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Crystalline silica (Quartz) (CAS 14808-60-7)
Di-"isononyl" phthalate (CAS 28553-12-0)
Titanium Dioxide (CAS 13463-67-7)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 05-February-2015

Revision date -

Version # 01

HMIS® ratings Health: 0
Flammability: 1
Physical hazard: 0

NFPA ratings



Disclaimer

HCC Holdings Inc. an Oatey Affiliate cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.



Material Safety Data Sheet # 337

Hercules Chemical Company Inc.
111 South Street
Passaic NJ 07055-7398
Information Telephone: 1-800 221-9330
Internet: www.herchem.com

NFPA	HMIS	PPE	Transport Symbol						
	<table><tr><td>Health Hazard</td><td>2</td></tr><tr><td>Fire Hazard</td><td>2</td></tr><tr><td>Reactivity</td><td>0</td></tr></table>	Health Hazard	2	Fire Hazard	2	Reactivity	0		
Health Hazard	2								
Fire Hazard	2								
Reactivity	0								

Preparation Date April 27, 2007

Revision Date Jan. 20, 2011

Revision Number 2

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identity: HERCULES ROOF & FLASHING SEALANT

Intended Use: Roof Sealant

Manufacturer: Hercules Chemical Company, Inc.
111 South Street
Passaic, New Jersey 07055-7398

Information Telephone: (800) 221-9330

Internet: <http://www.herchem.com>

Emergency Phone: CHEMTREC: (800) 424-9300

MSDS Date of Preparation: 03/23/2007

2. HAZARDS IDENTIFICATION

Combustible viscous paste with mild petroleum odor.

EMERGENCY OVERVIEW

Fumes from the product can be unpleasant, may cause nausea, headache and irritation to eyes, skin and respiratory tract.

Potential Health Effects.

Inhalation: Inhalation of high vapor concentration can cause dizziness, headaches, and even loss of consciousness.

Ingestion: DO NOT INDUCE VOMITING. If vomiting occurs, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.

Eye: May cause eye irritation.

Skin: Prolonged skin contact can lead to dry and irritated skin possibly causing dermatitis.

HMIS Hazard Rating: 2 2 0 C

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS #	Weight %
Asphalt	8052-42-4	30-80
Aliphatic hydrocarbons	8052-41-3	3-40
Amorphous Alumina Silicates	93763-70-3	0-20
Attapulgite Clay	12174-11-7	0-20
Cellulosic Fibers	9004-34-6	0-15
Polymers	9003-55-8	0-20
Cationic Salts	28701-67-9	0-3

4. EMERGENCY AND FIRST AID PROCEDURES.

Eye: Immediately flush victim's eyes with large quantities of water, for 15 minutes, holding the eyelids apart. Get medical attention if irritation persists.

Skin: Wash with soap and water. Remove contaminated clothing and do not reuse until laundered. If persistent irritation occurs, get medical attention.

Inhalation: Remove the victim to fresh air, if experiencing problem breathing, give oxygen. Give artificial respiration if not breathing, Get Medical attention. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

Flashpoint: 104°F (40°C) PMCC

Flammable Limits: LEL 1.0, LEL 7.0

Autoignition Temperature: Not applicable

Extinguishing Media: Water fog, Foam, Dry Chemical, Carbon Dioxide

Unusual Fire or Explosion Hazards: When heated above flash point, material will release flammable vapors which can burn or be explosive in confined spaces if ignited. Do not mix with strong oxidants such as liquid chlorine or concentrated oxygen.

Special Fire-Fighting Instructions: Firefighters and others, who might be exposed to products of combustion, should wear positive pressure self-contained breathing apparatus and full protective clothing.

Hazardous Combustion Products: Carbon monoxide and Carbon Dioxide.

6. ACCIDENTAL RELEASE MEASURES

Spills/Leak Control: Eliminate all sources of ignition and ventilate the area. Soak up with non-combustible absorbent material like clay or vermiculite. Place in marked containers for proper disposal.

Keep products out of sewers and waterways.

7. HANDLING AND STORAGE

Handling: Keep away from heat and open flames. Keep containers tightly closed. Use with adequate ventilation

Storage: Store in a cool, dry place with adequate ventilation. Do not store in temperatures above 120 deg. F. Store large quantities in buildings designed for storage of NFPA combustible liquids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection: None required in well ventilated areas. In confined spaces wear a NIOSH approved respirator for organic vapors.

Engineering Controls: Use with general or local exhaust ventilation.

Skin Protection: Wear protective gloves where prolonged contact is anticipated.

Eye Protection: Safety glasses.

Component	CAS #	OSHA PEL	ACGIH TLV	Other limits
Asphalt	8052-42-4	N.E.	5 mg/m ³	5 mg/m ³ (NIOSH)
Aliphatic hydrocarbons	8052-41-3	100 ppm	100 ppm	350 mg/m ³ (NIOSH)
Amorphous Alumina Silicates	93763-70-3	15 mg/m ³	10 mg/m ³	N/A
Attapulgitte Clay	12174-11-7	N/A	5 mg/m ³	N/A
Cellulosic Fibers	9004-34-6	5 mg/m ³	5 mg/m ³	N/A
Polymers	9003-55-8	N/A	N/A	N/A
Cationic Salts	28701-67-9	N/A	N/A	N/A

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance And Odor: Black viscous Paste with mild odor.	Boiling Point: 300-350°F
Physical State: Liquid	Vapor Pressure: 3
Vapor Density (Air=1): 3.9	Evaporation Rate (Butyl Acetate=1) @77F: 0.2
Solubility In Water: insoluble	Volatile Components: 300 g/l
Specific Gravity: 0.8 - 1.0	Viscosity: Viscous
Melting Point: N/A	pH: N/A

10. STABILITY AND REACTIVITY

Stability: Stable.

Conditions to avoid: Keep away from heat, spark, and open flames.

Incompatibility: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon dioxide, carbon monoxide, nitrogen oxides, smoke and fumes.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Product may cause respiratory irritation, headache, dizziness, nausea and vomiting. Prolonged or repeated contact with skin may cause dermatitis.

Sensitization: None.

Chronic: Possible skin and eye irritant.

Carcinogenicity: NTP: No, IARC: No, OSHA: No.

Mutagenicity: Not mutagenic.

Medical Conditions Aggravated by Exposure: Pre-existing skin disease may be aggravated.

Reproductive Toxicity: None.

Acute Toxicity Values: Not determined.

12. ECOLOGICAL INFORMATION

Product has not been tested for ecotoxicity

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with Federal, State, and Local regulations.

14. TRANSPORT INFORMATION

Not regulated for ground transport. For other modes of transportation, consult 49 CFR

15. REGULATORY INFORMATION

SARA TITLE III – EPA Regulation 40 CFR 302 (CERCLA Section 102); CFR 355 (SARA Section 301-304); CFR 372 (SARA Section 311 – 313) – NOT APPLICABLE

This product contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372.

1,2,4 – Trimethylbenzene CAS # 95-63-6 Weight % 0 - 2

EPA HAZARD CLASSIFICATION CODE:

Acute Hazard: N/A

Chronic Hazard: N/A

Fire Hazard: N/A

Pressure Hazard: N/A

Reactive Hazard: N/A

TSCA Inventory: All the components in this product are listed on the TSCA and DSL inventory list.

16. OTHER INFORMATION**DISCLAIMER:**

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Hercules cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.



SAFETY DATA SHEET

1. Identification

Product identifier	Hercules High Hear Furnace Cement
Other means of identification	
Product code	7330E
Synonyms	Part Numbers: Regular- 35503, 35504, 35509, 35515, 35610, Heavy- 35521, 35526
Recommended use	Furnace Cement
Recommended restrictions	Workers (and your customers or users in the case of resale) should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

Manufacturer/Importer/Supplier/Distributor information

Company Name	HCC Holdings, Inc. an Oatey Affiliate
Address	4700 West 160th Street Cleveland, OH 44135
Telephone	216-267-7100
E-mail	info@oatey.com
Transport Emergency	Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)
Emergency First Aid	1-877-740-5015
Contact person	MSDS Coordinator

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
OSHA defined hazards	Not classified.	
Label elements		



Signal word	Danger
Hazard statement	Causes severe skin burns and eye damage.
Precautionary statement	
Prevention	Do not breathe mist or vapor. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse.
Storage	Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Kaolin	1332-58-7	10-30
Nepheline Syenite	37244-96-5	10-30
Sodium silicate	1344-09-8	10-30
Mica	12001-26-2	5-10
Wollastonite	13983-17-0	5-10
Crystalline silica (Quartz)	14808-60-7	1-5
Microspheres	68131-74-8	0-3
Other components below reportable levels		24.12

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air.
Skin contact	Take off immediately all contaminated clothing. Wash off with soap and water. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Powder. Foam. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
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Methods and materials for containment and cleaning up

Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

Environmental precautions**7. Handling and storage****Precautions for safe handling**

Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection**Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value	Form
Kaolin (CAS 1332-58-7)	PEL	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Crystalline silica (Quartz) (CAS 14808-60-7)	TWA	0.3 mg/m ³	Total dust.
Mica (CAS 12001-26-2)	TWA	0.1 mg/m ³	Respirable.
		20 mppcf	

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Crystalline silica (Quartz) (CAS 14808-60-7)	TWA	0.025 mg/m ³	Respirable fraction.
Kaolin (CAS 1332-58-7)	TWA	2 mg/m ³	Respirable fraction.
Mica (CAS 12001-26-2)	TWA	3 mg/m ³	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Crystalline silica (Quartz) (CAS 14808-60-7)	TWA	0.05 mg/m ³	Respirable dust.
Kaolin (CAS 1332-58-7)	TWA	5 mg/m ³	Respirable.
		10 mg/m ³	Total
Mica (CAS 12001-26-2)	TWA	3 mg/m ³	Respirable.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection**Hand protection**

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties**Appearance**

Physical state	Liquid.
Form	Paste.
Color	Tan. or Black.

Odor Odorless.

Odor threshold Not available.

pH 11 - 13

Melting point/freezing point Not available.

Initial boiling point and boiling range 212 °F (100 °C)

Flash point > 212.0 °F (> 100.0 °C)

Evaporation rate Not available.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure Not available.

Vapor density Not available.

Relative density 1.95 +/- 0.03

Solubility(ies)

Solubility (water) Not available.

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity Not available.

Other information

VOC (Weight %) 0 g/l

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.

Conditions to avoid Contact with incompatible materials.

Incompatible materials Strong oxidizing agents.

Hazardous decomposition products No hazardous decomposition products are known.

11. Toxicological information**Information on likely routes of exposure**

Inhalation May cause irritation to the respiratory system. Prolonged inhalation may be harmful.

Skin contact Causes severe skin burns.

Eye contact Causes serious eye damage.

Ingestion	Causes digestive tract burns.
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Information on toxicological effects	
Acute toxicity	Not available.
Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) Risk of cancer cannot be excluded with prolonged exposure.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Crystalline silica (Quartz) (CAS 14808-60-7)	1 Carcinogenic to humans.
Wollastonite (CAS 13983-17-0)	3 Not classifiable as to carcinogenicity to humans.
NTP Report on Carcinogens	
Crystalline silica (Quartz) (CAS 14808-60-7)	Known To Be Human Carcinogen.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not listed.	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
One or more components are not listed on TSCA.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Crystalline silica (Quartz) (CAS 14808-60-7)
Kaolin (CAS 1332-58-7)
Mica (CAS 12001-26-2)

US. New Jersey Worker and Community Right-to-Know Act

Crystalline silica (Quartz) (CAS 14808-60-7)
Kaolin (CAS 1332-58-7)
Mica (CAS 12001-26-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Crystalline silica (Quartz) (CAS 14808-60-7)
Kaolin (CAS 1332-58-7)
Mica (CAS 12001-26-2)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Crystalline silica (Quartz) (CAS 14808-60-7)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	22-April-2015
Revision date	-
Version #	01
HMIS® ratings	Health: 3 Flammability: 0 Physical hazard: 0

NFPA ratings**Disclaimer**

HCC Holdings Inc. an Oatey Affiliate cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

HIT-HY 200-A

Safety information for 2-Component-products

Date of issue: 30/11/2015

Revision date: 30/11/2015

Supersedes: 24/03/2015

Version: 3.1

SECTION 1: Kit identification

1.1 Product identifier

Name HIT-HY 200-A



Product code BU Anchor

1.2 Details of the supplier of the Safety information for 2-Component-products

Hilti (Gt. Britain) Ltd.
1 Trafford Wharf Road
M17 1BY Manchester - Great Britain
T +44 161 886 1000
0800 886 100 Toll-free - F +44 161 872 1240
gbsales@hilti.com

SECTION 2: General information

Storage Storage temperature: 5 - 25 °C

A SDS for each of these components is included. Please do not separate any component SDS from this cover page

This Kit should be handled in accordance with good laboratory practices and appropriate personal protective equipment should be used

SECTION 3: Kit contents

Classification of the Product

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Eye Irrit. 2	H319
Skin Sens. 1	H317
Aquatic Acute 1	H400

Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



GHS07

GHS09

Signal word (CLP)

Warning

Hazardous ingredients

methacrylates, dibenzoyl peroxide

Hazard statements (CLP)

H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H400 - Very toxic to aquatic life

Precautionary statements (CLP)

P280 - Wear eye protection, protective clothing, protective gloves
P262 - Do not get in eyes, on skin, or on clothing
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P302+P352 - IF ON SKIN: Wash with plenty of water
P337+P313 - If eye irritation persists: Get medical advice/attention
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention

HIT-HY 200-A

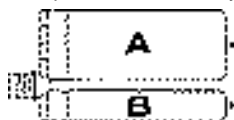
Safety information for 2-Component-products

Additional information

2-Component-foilpack, contains:

Component A: Urethane methacrylate resin, inorganic filler

Component B: Dibenzoyl peroxide, phlegmatized



Name	General description	Quantity	Unit	Classification according to Regulation (EC) No. 1272/2008 [CLP]
HIT-HY 200-A, B		1	pcs (pieces)	Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Acute 1, H400
HIT-HY 200-A, A		1	pcs (pieces)	Skin Sens. 1, H317

SECTION 4: General information

General advice

For professional users only

SECTION 5: Safe handling advice

Environmental precautions

Prevent entry to sewers and public waters
Notify authorities if liquid enters sewers or public waters

Storage conditions

Keep cool. Protect from sunlight

Precautions for safe handling

Wear personal protective equipment
Avoid contact with skin and eyes
Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work
Provide good ventilation in process area to prevent formation of vapour

Methods for cleaning up

This material and its container must be disposed of in a safe way, and as per local legislation
Recover mechanically the product
Store away from other materials

For containment

Collect spillage

Incompatible materials

Sources of ignition
Direct sunlight

Incompatible products

Strong bases
Strong acids

SECTION 6: First aid measures

First-aid measures after eye contact

Rinse immediately with plenty of water
Remove contact lenses, if present and easy to do. Continue rinsing
Obtain medical attention if pain, blinking or redness persist

First-aid measures after ingestion

Rinse mouth
Drink plenty of water
Get medical advice/attention
Do not induce vomiting
Obtain emergency medical attention

First-aid measures after inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing
Allow breathing of fresh air
Allow the victim to rest

First-aid measures after skin contact

Wash contaminated clothing before reuse
Wash with plenty of soap and water
If skin irritation or rash occurs: Get medical advice/attention

First-aid measures general

Remove/Take off immediately all contaminated clothing
Never give anything by mouth to an unconscious person

HIT-HY 200-A

Safety information for 2-Component-products

Symptoms/injuries after eye contact	If you feel unwell, seek medical advice (show the label where possible)
Symptoms/injuries after skin contact	Causes serious eye irritation
	May cause an allergic skin reaction

SECTION 7: Fire fighting measures

Firefighting instructions	Use water spray or fog for cooling exposed containers Exercise caution when fighting any chemical fire Prevent fire-fighting water from entering environment
Protection during firefighting	Self-contained breathing apparatus Do not enter fire area without proper protective equipment, including respiratory protection
Hazardous decomposition products in case of fire	Thermal decomposition generates : Carbon dioxide Carbon monoxide

SECTION 8: Other information

No data available

HIT-HY 200-A, A

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

Date of issue: 30/11/2015

Revision date: 30/11/2015

Supersedes: 24/03/2015

Version: 3.1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	Mixture
Name	HIT-HY 200-A, A
Product code	BU Anchor

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

No additional information available

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier

Hilti (Gt. Britain) Ltd.
1 Trafford Wharf Road
M17 1BY Manchester - Great Britain
T +44 161 886 1000
0800 886 100 Toll-free - F +44 161 872 1240
gbsales@hilti.com

Department issuing data specification sheet

Hilti Entwicklungsgesellschaft mbH
Hiltistrasse 6
86916 Kaufering - Deutschland
T +49 8191 906310 - F +49 8191 90176310
anchor.hse@hilti.com

1.4. Emergency telephone number

Emergency number	Schweizerisches Toxikologisches Informationszentrum – 24h Service +41 44 251 51 51 (international) +44 161 886 1000 0800 886 100 Toll-free
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin Sens. 1 H317

Full text of hazard classes and H-statements : see section 16

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



GHS07

Signal word (CLP)

Warning

Hazardous ingredients

1,4-Butanediol dimethacrylate, 2-Hydroxypropyl methacrylate

Hazard statements (CLP)

H317 - May cause an allergic skin reaction

Precautionary statements (CLP)

P280 - Wear eye protection, protective clothing, protective gloves
P262 - Do not get in eyes, on skin, or on clothing
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P302+P352 - IF ON SKIN: Wash with plenty of water
P337+P313 - If eye irritation persists: Get medical advice/attention

HIT-HY 200-A, A

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

P333+P313 - If skin irritation or rash occurs: Get medical advice/attention

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
1,4-Butanediol dimethacrylate	(CAS No) 2082-81-7 (EC no) 218-218-1	10 - 25	Skin Sens. 1B, H317
2-Hydroxypropyl methacrylate	(CAS No) 27813-02-1 (EC no) 248-666-3 (EC index no) 607-125-00-5 (REACH-no) 01-2119490226-37	5 - 10	Eye Irrit. 2, H319 Skin Sens. 1, H317
1,1'-(p-tolylimino)dipropyl-2-ol	(CAS No) 38668-48-3 (EC no) 254-075-1 (REACH-no) 01-2119980937-17	0.1 - 1	Acute Tox. 2 (Oral), H300 Eye Irrit. 2, H319 Aquatic Chronic 3, H412

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	Remove/Take off immediately all contaminated clothing. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Allow breathing of fresh air. Allow the victim to rest.
First-aid measures after skin contact	Wash contaminated clothing before reuse. Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if pain, blinking or redness persist.
First-aid measures after ingestion	Rinse mouth. Drink plenty of water. Get medical advice/attention. Do not induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after skin contact	May cause an allergic skin reaction.
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4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Water spray. Carbon dioxide. Dry powder. Foam. Sand.
Unsuitable extinguishing media	Do not use a heavy water stream.

HIT-HY 200-A, A

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Firefighting instructions	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protection during firefighting	Self-contained breathing apparatus. Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures	Evacuate unnecessary personnel.
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6.1.2. For emergency responders

Protective equipment	Use personal protective equipment as required. Equip cleanup crew with proper protection.
Emergency procedures	Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment	Collect spillage.
Methods for cleaning up	This material and its container must be disposed of in a safe way, and as per local legislation. Recover mechanically the product. Store away from other materials.
Other information	Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	Wear personal protective equipment. Avoid contact with skin and eyes. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour.
Hygiene measures	Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	Keep cool. Protect from sunlight.
Incompatible products	Strong bases. Strong acids.
Incompatible materials	Sources of ignition. Direct sunlight.
Storage temperature	5 - 25 °C

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

HIT-HY 200-A, A

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

Additional information

The product has a pasty consistency. Exposure limit values for respirable dusts are not relevant for this product.

8.2. Exposure controls

Personal protective equipment

Avoid all unnecessary exposure. Safety glasses. Gloves. Protective clothing.

Hand protection

Wear protective gloves

Eye protection

Chemical goggles or safety glasses

Skin and body protection

Wear suitable protective clothing



Environmental exposure controls

Avoid release to the environment.

Consumer exposure controls

Avoid contact during pregnancy/while nursing.

Other information

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Appearance	Thixotropic paste.
Colour	Light grey.
Odour	characteristic.
Odour threshold	Not determined
pH	No data available
Relative evaporation rate (butylacetate=1)	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	240 °C
Flash point	> 109 °C DIN EN ISO 1523
Auto-ignition temperature	Not self-igniting
Decomposition temperature	No data available
Flammability (solid, gas)	Non flammable
Vapour pressure	No data available
Relative vapour density at 20 °C	No data available
Relative density	No data available
Density	1.8 g/ml AW 4.3.23
Solubility	Water: Not miscible
Log Pow	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	35 - 65 Pa.s HN-0333
Explosive properties	Product is not explosive.
Oxidising properties	No data available
Explosive limits	No data available

9.2. Other information

No additional information available

HIT-HY 200-A, A

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Not classified

1,1'-(p-tolylimino)dipropen-2-ol (38668-48-3)	
LD50 oral rat	25 mg/kg
LD50 dermal rat	> 2000 mg/kg
1,4-Butanediol dimethacrylate (2082-81-7)	
LD50 oral rat	10066 mg/kg
LD50 dermal rat	> 3000 mg/kg
2-Hydroxypropyl methacrylate (27813-02-1)	
LD50 oral rat	> 5000 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Literature study; >=2000 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rabbit	>= 5000 mg/kg bodyweight (Rabbit; Experimental value)

Skin corrosion/irritation

Not classified

Based on available data, the classification criteria are not met

Serious eye damage/irritation

Not classified

Based on available data, the classification criteria are not met

Respiratory or skin sensitisation

May cause an allergic skin reaction.

Germ cell mutagenicity

Not classified

Based on available data, the classification criteria are not met

Carcinogenicity

Not classified

Based on available data, the classification criteria are not met

Reproductive toxicity

Not classified

Based on available data, the classification criteria are not met

Specific target organ toxicity (single exposure)

Not classified

Based on available data, the classification criteria are not met

Specific target organ toxicity (repeated exposure)

Not classified

Based on available data, the classification criteria are not met

Aspiration hazard

Not classified

Based on available data, the classification criteria are not met

Potential adverse human health effects and symptoms

Based on available data, the classification criteria are not met.

HIT-HY 200-A, A

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

SECTION 12: Ecological information

12.1. Toxicity

1,1'-(p-tolylimino)dipropyl-2-ol (38668-48-3)	
LC50 fish 1	≈ 17 mg/l
LC50 other aquatic organisms 1	245 mg/l
EC50 Daphnia 1	28.8 mg/l
NOEC (acute)	57.8 mg/l
1,4-Butanediol dimethacrylate (2082-81-7)	
LC50 fish 1	32.5 mg/l
LC50 other aquatic organisms 1	9.79 mg/l
NOEC (acute)	7.51 mg/l
NOEC (chronic)	20 mg/l
2-Hydroxypropyl methacrylate (27813-02-1)	
LC50 fish 1	493 mg/l (48 h; Leuciscus idus; GLP)
EC50 Daphnia 1	> 143 mg/l (48 h; Daphnia magna; GLP)
Threshold limit algae 1	> 97.2 mg/l (72 h; Pseudokirchneriella subcapitata; GLP)
Threshold limit algae 2	> 97.2 mg/l (72 h; Pseudokirchneriella subcapitata; GLP)

12.2. Persistence and degradability

HIT-HY 200-A, A	
Persistence and degradability	Not established.
1,4-Butanediol dimethacrylate (2082-81-7)	
Biodegradation	84 %
2-Hydroxypropyl methacrylate (27813-02-1)	
Persistence and degradability	Readily biodegradable in water. No (test) data on mobility of the substance available.

12.3. Bioaccumulative potential

HIT-HY 200-A, A	
Bioaccumulative potential	Not established.
1,1'-(p-tolylimino)dipropyl-2-ol (38668-48-3)	
BCF fish 1	≈
Log Kow	2.1
1,4-Butanediol dimethacrylate (2082-81-7)	
Log Pow	3.1
2-Hydroxypropyl methacrylate (27813-02-1)	
BCF fish 1	≤ 100 (Pisces)
BCF fish 2	3.2 (Pisces; QSAR)
Log Pow	0.97 (OECD 102: Melting Point/Melting Range)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Additional information Avoid release to the environment

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	Disposal must be done according to official regulations.
Waste disposal recommendations	Refer to manufacturer/supplier for information on recovery/recycling. Dispose of contents/container to Avoid release to the environment, Refer to manufacturer/supplier for information on recovery/recycling.

HIT-HY 200-A, A

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

Ecology - waste materials

Avoid release to the environment.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

Other information

No supplementary information available

ADR	IMDG	IATA	RID
14.1. UN number			
Not regulated for transport			
14.2. UN proper shipping name			
Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)			
Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards			
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available			

14.6. Special precautions for user

- Overland transport

- Transport by sea

No data available

- Air transport

No data available

- Rail transport

Carriage prohibited (RID)

No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

15.1.2. National regulations

No additional information available

HIT-HY 200-A, A

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Other information

None.

Full text of H- and EUH-statements:

Acute Tox. 2 (Oral)	Acute toxicity (oral), Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Skin Sens. 1	Sensitisation — Skin, Category 1
Skin Sens. 1B	Sensitisation — Skin, category 1B
H300	Fatal if swallowed
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H412	Harmful to aquatic life with long lasting effects

SDS_EU_Hilti

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

HIT-HY 200-A, B

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

Date of issue: 30/11/2015

Revision date: 30/11/2015

Supersedes: 24/03/2015

Version: 3.1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	Mixture
Name	HIT-HY 200-A, B
Product code	BU Anchor

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Industrial/Professional use spec	For professional use only
----------------------------------	---------------------------

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier

Hilti (Gt. Britain) Ltd.
1 Trafford Wharf Road
M17 1BY Manchester - Great Britain
T +44 161 886 1000
0800 886 100 Toll-free - F +44 161 872 1240
gbsales@hilti.com

Department issuing data specification sheet

Hilti Entwicklungsgesellschaft mbH
Hiltistrasse 6
86916 Kaufering - Deutschland
T +49 8191 906310 - F +49 8191 90176310
anchor.hse@hilti.com

1.4. Emergency telephone number

Emergency number	Schweizerisches Toxikologisches Informationszentrum – 24h Service +41 44 251 51 51 (international) +44 161 886 1000 0800 886 100 Toll-free
------------------	---

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Eye Irrit. 2	H319
Skin Sens. 1	H317
Aquatic Acute 1	H400

Full text of hazard classes and H-statements : see section 16

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



GHS07

GHS09

Signal word (CLP)

Warning

Hazardous ingredients

dibenzoyl peroxide

Hazard statements (CLP)

H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H400 - Very toxic to aquatic life

Precautionary statements (CLP)

P280 - Wear eye protection, protective clothing, protective gloves

HIT-HY 200-A, B

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

P262 - Do not get in eyes, on skin, or on clothing
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P302+P352 - IF ON SKIN: Wash with plenty of water
 P337+P313 - If eye irritation persists: Get medical advice/attention
 P333+P313 - If skin irritation or rash occurs: Get medical advice/attention

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
dibenzoyl peroxide	(CAS No) 94-36-0 (EC no) 202-327-6 (EC index no) 617-008-00-0	10 - 25	Org. Perox. B, H241 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Acute 1, H400 (M=10)

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	Remove/Take off immediately all contaminated clothing. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Allow breathing of fresh air. Allow the victim to rest.
First-aid measures after skin contact	Wash contaminated clothing before reuse. Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if pain, blinking or redness persist.
First-aid measures after ingestion	Rinse mouth. Drink plenty of water. Get medical advice/attention. Do not induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after skin contact	May cause an allergic skin reaction.
--------------------------------------	--------------------------------------

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Water spray. Carbon dioxide. Dry powder. Foam. Sand.
Unsuitable extinguishing media	Do not use a heavy water stream.

HIT-HY 200-A, B

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire Thermal decomposition generates : Carbon dioxide. Carbon monoxide.

5.3. Advice for firefighters

Firefighting instructions Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting Self-contained breathing apparatus. Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment Use personal protective equipment as required. Equip cleanup crew with proper protection.

Emergency procedures Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment Collect spillage.

Methods for cleaning up This material and its container must be disposed of in a safe way, and as per local legislation. Recover mechanically the product. Store away from other materials.

Other information Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling Wear personal protective equipment. Avoid contact with skin and eyes. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour.

Hygiene measures Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions Keep cool. Protect from sunlight.

Incompatible products Strong bases. Strong acids.

Incompatible materials Sources of ignition. Direct sunlight.

Storage temperature 5 - 25 °C

7.3. Specific end use(s)

No additional information available

HIT-HY 200-A, B

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

dibenzoyl peroxide (94-36-0)		
United Kingdom	Local name	Dibenzoyl peroxide
United Kingdom	WEL TWA (mg/m ³)	5 mg/m ³

Additional information

The product has a pasty consistency. Exposure limit values for respirable dusts are not relevant for this product.

8.2. Exposure controls

Personal protective equipment

Avoid all unnecessary exposure. Safety glasses. Gloves. Protective clothing.

Hand protection

Wear protective gloves

Type	Material	Permeation	Thickness (mm)	Standard
Disposable gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	0,12	EN 374

Eye protection

Chemical goggles or safety glasses

Type	Use	Characteristics	Standard
Safety glasses	Droplet	clear	EN 166, EN 170

Skin and body protection

Wear suitable protective clothing



Environmental exposure controls

Avoid release to the environment.

Consumer exposure controls

Avoid contact during pregnancy/while nursing.

Other information

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Appearance	Thixotropic paste.
Colour	white.
Odour	characteristic.
Odour threshold	Not determined
pH	6 - 7
Relative evaporation rate (butylacetate=1)	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	100 °C
Flash point	No data available
Auto-ignition temperature	Not self-igniting
Decomposition temperature	No data available
Flammability (solid, gas)	Non flammable
Vapour pressure	23 hPa
Relative vapour density at 20 °C	No data available
Relative density	No data available
Density	1.9 g/cm ³
Solubility	Water: Miscible with water

HIT-HY 200-A, B

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

Log Pow	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	25 - 55 Pa.s HN-0333
Explosive properties	Product is not explosive.
Oxidising properties	No data available
Explosive limits	No data available

9.2. Other information

SADT	65 °C (Dibenzoylperoxide)
------	---------------------------

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	Not classified
----------------	----------------

dibenzoyl peroxide (94-36-0)	
LD50 oral rat	> 5000 mg/kg bodyweight (Rat; Equivalent or similar to OECD 401; Weight of evidence)
Skin corrosion/irritation	Not classified Based on available data, the classification criteria are not met pH: 6 - 7
Serious eye damage/irritation	Causes serious eye irritation. Based on available data, the classification criteria are not met pH: 6 - 7
Respiratory or skin sensitisation	May cause an allergic skin reaction.
Germ cell mutagenicity	Not classified Based on available data, the classification criteria are not met
Carcinogenicity	Not classified Based on available data, the classification criteria are not met
Reproductive toxicity	Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	Not classified Based on available data, the classification criteria are not met

HIT-HY 200-A, B

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

Specific target organ toxicity (repeated exposure)	Not classified Based on available data, the classification criteria are not met
Aspiration hazard	Not classified Based on available data, the classification criteria are not met
Potential adverse human health effects and symptoms	Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

dibenzoyl peroxide (94-36-0)	
LC50 fish 1	2 mg/l (96 h; Poecilia reticulata)
EC50 Daphnia 1	0.07 mg/l
LC50 fish 2	0.0602 mg/l (96h; Oncorhynchus mykiss; ECHA)
NOEC (acute)	0.0316 mg/l (96h; Oncorhynchus mykiss; ECHA)

12.2. Persistence and degradability

HIT-HY 200-A, B	
Persistence and degradability	Not established.
dibenzoyl peroxide (94-36-0)	
Persistence and degradability	Readily biodegradable in water. No (test)data on mobility of the substance available.

12.3. Bioaccumulative potential

HIT-HY 200-A, B	
Bioaccumulative potential	Not established.
dibenzoyl peroxide (94-36-0)	
Log Pow	3.71 (QSAR; 3.2; Experimental value; OECD 117: Partition Coefficient (n-octanol/water), HPLC method; 22 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Additional information Avoid release to the environment

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	Disposal must be done according to official regulations.
Waste disposal recommendations	Refer to manufacturer/supplier for information on recovery/recycling. Dispose of contents/container to Avoid release to the environment, Refer to manufacturer/supplier for information on recovery/recycling.
Ecology - waste materials	Avoid release to the environment.
European List of Waste (LoW) code	08 04 09* - waste adhesives and sealants containing organic solvents or other dangerous substances 20 01 27* - paint, inks, adhesives and resins containing dangerous substances

HIT-HY 200-A, B

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

Other information

No supplementary information available

ADR	IMDG	IATA	RID
14.1. UN number			
Not regulated for transport			
14.2. UN proper shipping name			
Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)			
Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards			
Dangerous for the environment : Yes	Dangerous for the environment : Yes Marine pollutant : Yes	Dangerous for the environment : Yes	Dangerous for the environment : Yes
ADR 5.2.1.8.1 derogation applies (quantity of liquids \leq 5 litres or net mass of solids \leq 5 kg)			
No supplementary information available			

14.6. Special precautions for user

- Overland transport

- Transport by sea

No data available

- Air transport

No data available

- Rail transport

Carriage prohibited (RID)

No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

15.1.2. National regulations

No additional information available

HIT-HY 200-A, B

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Other information None.

Full text of H- and EUH-statements:

Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Org. Perox. B	Organic Peroxides, Type B
Skin Sens. 1	Sensitisation — Skin, Category 1
H241	Heating may cause a fire or explosion
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H400	Very toxic to aquatic life

SDS_EU_Hilti

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

1 Identification

- **Product identifier**
- **Trade name:** **Hilti HIT-HY 200-R**
- **Container size:** 330 ml, 500 ml
- **Relevant identified uses of the substance or mixture and uses advised against**
- **Sector of Use** Building and construction work
- **Application of the substance / the mixture** Adhesive anchoring system for rebar and anchor fastenings in concrete.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Hilti, Inc.
5400 South 122nd East Ave.
US-Tulsa, OK 74146
Phone: (800) 879-8000
Fax: (800) 879-7000
Español: (800) 879-5000
- **Information department:**
anchor.hse@hilti.com
see section 16
- **Emergency telephone number:**
Chem-Trec
Tel.: 1 800 424 9300 (USA, PR, Virgin Islands, Canada)
Tel.: 703 527 3887 (Other countries)

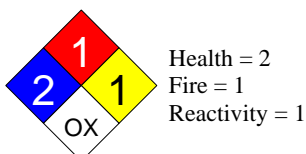
2 Hazard(s) identification

- **Classification of the substance or mixture**
Aquatic Acute 1 H400 Very toxic to aquatic life.
Eye Irrit. 2A H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



- **Signal word** Warning
- **Hazard-determining components of labeling:**
Hydroxypropyl methacrylate
dibenzoyl peroxide
- **Hazard statements**
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H400 Very toxic to aquatic life.
- **Precautionary statements**
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P262 Do not get in eyes, on skin, or on clothing.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P302+P352 If on skin: Wash with plenty of water.
- **Classification system**
- **NFPA ratings (scale 0-4)**



(Contd. on page 2)

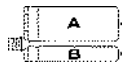
US EN

Trade name: Hilti HIT-HY 200-R

(Contd. of page 1)

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

- **Additional information:**



Hilti HIT

- **Information pertaining to particular dangers for man and environment: A**
H317 May cause an allergic skin reaction.

- **Information pertaining to particular dangers for man and environment: B**
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H400 Very toxic to aquatic life.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:**
2-Component-Foilpack, contains:
Component A: Urethane methacrylate resin, inorganic filler
Component B: Dibenzoylperoxide, phlegmatized

Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

- **Dangerous components A:**

27813-02-1	Hydroxypropyl methacrylate	5-10%
2082-81-7	tetramethylene dimethacrylate	10-15%
14808-60-7	Quartz (SiO ₂)	40-50%
1344-28-1	aluminium oxide	5-10%

- **Dangerous components B:**

94-36-0	dibenzoyl peroxide	10-15%
14808-60-7	Quartz (SiO ₂)	40-50%
1344-28-1	aluminium oxide	15-25%

4 First-aid measures

- **Description of first aid measures**
- **General information** Immediately remove any clothing soiled by the product.
- **After inhalation** Take affected persons into fresh air and keep quiet.
- **After skin contact** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact**
Rinse opened eye for several minutes under running water. Then consult a doctor.
Protect unharmed eye.
- **After swallowing**
Rinse out mouth and then drink plenty of water.
Seek immediate medical advice.
- **Information for doctor**
- **Most important symptoms and effects, both acute and delayed** Allergic reactions
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

US EN

(Contd. on page 3)


Trade name: Hilti HIT-HY 200-R

(Contd. of page 2)

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Sand
- **For safety reasons unsuitable extinguishing agents** Water with full jet.
- **Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Carbon monoxide (CO)
Carbondioxide (CO₂)
Nitrogen oxides (NO_x)
In certain fire conditions, traces of other toxic gases cannot be excluded.
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
Ensure adequate ventilation
- **Environmental precautions:** Do not allow to penetrate the ground/soil.
- **Methods and material for containment and cleaning up:**
Pick up mechanically.
Clean the affected area carefully; suitable cleaners are:
organic solvent
Ensure adequate ventilation.
Dispose contaminated material as waste according to item 13.
- **Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling**
- **Precautions for safe handling**
Check the expiry date: see imprint on manifold (month/year). Do not use expired mortar!
The usual precautionary measures for handling chemicals should be followed.
- **Information about protection against explosions and fires:**
No special measures required.
Keep ignition sources away - Do not smoke.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:**
Keep in a cool, dry and dark place; 41 °F / 5 °C to 77 °F / 25 °C.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:** Protect from heat and direct sunlight.
- **Storage class**
As per VCI (1991) storage classification concept.
11
- **Specific end use(s)** Adhesive mortar for anchor and rebar fastenings

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
The product has a pasty consistency. Exposure limit values for respirable dusts are not relevant for this product.

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US EN

Trade name: Hilti HIT-HY 200-R

(Contd. of page 3)

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment**

· **General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Do not eat, drink, smoke or sniff while working.

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· **Breathing equipment:** Not required.

· **Protection of hands:**



Protective gloves.

Only use chemical-protective gloves with CE-labeling of category III.

EN 374

Avoid direct contact with the chemical/ the product/ the preparation by organizational measures.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

· **Material of gloves**

Nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.12 mm

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Not suitable are gloves made of the following materials:**

Natural rubber, NR

Leather gloves

Strong gloves

· **Eye protection:**



Tightly sealed goggles.

EN 166 / EN 170

· **Body protection:**



Protective work clothing.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:

Pasty

Color:

Component A: grey

Component B: white

· **Odor:**

Ester-like

· **Odour threshold:**

Not determined

· **pH-value:**

Componente A: not applicable

Componente B: ~ 7

· **Change in condition**

Melting point/Melting range:

Not determined.

Boiling point/Boiling range:

undetermined

· **Flash point:**

Component A: > 109 °C (DIN EN ISO 1523)

Component B: not applicable

· **Flammability (solid, gaseous)**

Not determined

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US EN



Safety Data Sheet

acc. to ISO 11014

Printing date 05/18/2015

Version number 3

Reviewed on 05/18/2015

Trade name: Hilti HIT-HY 200-R

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· Ignition temperature:	355 °C (671 °F)
· Decomposition temperature:	Component A: not relevant Component B: SADT 65 °C UN test H4
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined
Upper:	Not determined
· Vapor pressure at 20 °C (68 °F):	< 0.1 hPa (< 0 mm Hg)
· Density at 20 °C (68 °F):	1.8 g/cm ³ (15.021 lbs/gal) (DIN 51757)
· Relative density	Not determined
· Vapour density	Not determined
· Evaporation rate	Not determined
· Solubility in / Miscibility with Water:	Not miscible or difficult to mix
· Partition coefficient (n-octanol/water):	Not determined
· Viscosity:	
dynamic at 20 °C (68 °F):	50 Pa.s (DIN 53019)
kinematic at 20 °C (68 °F):	> 20 s (ISO 2431)
· Solvent separation test	Not determined
· Solvent content:	
Organic solvents:	None
Water:	Component B: ~ 20%
· Other information	VOC Content: 7 g/l (EPA Method 24)

10 Stability and reactivity

- Reactivity
- Chemical stability
- Thermal decomposition / conditions to be avoided:
To avoid thermal decomposition do not overheat.
No decomposition if used and stored according to specifications.
- Possibility of hazardous reactions No dangerous reactions known
- Conditions to avoid No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known

11 Toxicological information

- Information on toxicological effects
- Acute toxicity:
- Primary irritant effect:
- on the skin: No irritant effect.
- on the eye: Irritating effect.
- Sensitization: Sensitization possible through skin contact.
- Additional toxicological information:
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Irritant
- Carcinogenic categories

· NTP (National Toxicology Program)

14808-60-7 | Quartz (SiO₂)

K

US EN

(Contd. on page 6)

Trade name: Hilti HIT-HY 200-R

(Contd. of page 5)

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- According to the formulation contains the following heavy metals and compounds from the EU guideline NO. 2006/11/EC:
None
- **General notes:** The product does not contain organically bounded halogens (AOX-free).
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**
Full or only partially emptied cartridges must be disposed of as special waste in accordance with official regulations.

· European waste catalogue:

08 04 09*	waste adhesives and sealants containing organic solvents or other dangerous substances
20 01 27*	paint, inks, adhesives and resins containing dangerous substances

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- | | |
|--|--|
| · UN-Number | Void |
| · DOT, ADR, ADN, IMDG, IATA | Void |
| · UN proper shipping name | Void |
| · DOT, ADR, ADN, IMDG, IATA | Void |
| · Transport hazard class(es) | |
| · DOT, ADN | |
| · Class | Void |
| · ADR, IMDG, IATA | |
| · Class | Void |
| · Label | Void |
| · Packing group | |
| · DOT, ADR, IMDG, IATA | Void |
| · Environmental hazards: | |
| · Marine pollutant: | No |
| · Special marking (ADR): | None |
| · Special marking (IATA): | None |
| · Special precautions for user | Not applicable. |
| · Danger code (Kemler): | Void |
| · EMS Number: | Void |
| · Segregation groups | Void |
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| · Transport/Additional information: | Not dangerous according to the above specifications.
available oxygen content < 1 % |

(Contd. on page 7)

US EN

Trade name: Hilti HIT-HY 200-R

(Contd. of page 6)

- UN "Model Regulation": -
- HS-Code: 3214 10 10: Glaziers' putty, grafting putty, resin cements, caulking compounds and other mastics

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture

· Section 355 (Extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

1344-28-1 aluminium oxide

94-36-0 Dibenzoyl peroxide

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· Proposition 65:

· Chemicals known to cause cancer:

None of the ingredients are listed.

· Cancerogenicity categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

14808-60-7 Quartz (SiO₂)

A2

1344-28-1 aluminium oxide

A4

94-36-0 Dibenzoyl peroxide

A4

· MAK (German Maximum Workplace Concentration)

14808-60-7 Quartz (SiO₂)

1

1344-28-1 aluminium oxide

2

· NIOSH-Ca (National Institute for Occupational Safety and Health)

14808-60-7 Quartz (SiO₂)

· National regulations

The product is subject to be labeled according with the prevailing version of the regulations on hazardous substances.

· Information about limitation of use: Employment restrictions concerning young persons must be observed.

· Chemical safety assessment: not required.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Relevant phrases

R3 Extreme risk of explosion by shock, friction, fire or other sources of ignition.

R7 May cause fire.

R36 Irritating to eyes.

R43 May cause sensitisation by skin contact.

R50 Very toxic to aquatic organisms.

H241 Heating may cause a fire or explosion.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H400 Very toxic to aquatic life.

· Department issuing SDS:

(Contd. on page 8)

US EN

Trade name: Hilti HIT-HY 200-R

(Contd. of page 7)

Hilti Entwicklungsgesellschaft mbH
Hiltistrasse 6
D-86916 Kaufering
Tel.: +49 8191 906310
Fax: +49 8191 90176310
e-mail: anchor.hse@hilti.com
None

· **Contact:** Mechthild Krauter

· **Date of preparation / last revision** 05/18/2015 / 2

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1

· *** Data compared to the previous version altered.**

US EN

MATERIAL SAFETY DATA SHEET

MSDS date: 8/6/01
Supersedes: All Previous

MANUFACTURER: **HIRSHFIELD'S PAINT MANUFACTURING**
4450 LYNDAL AVE NORTH
MINNEAPOLIS, MN 55412

MEDICAL AND TRANSPORTATION EMERGENCY CONTACT:
INFOTRAC: 1-800-535-5053

PRODUCT IDENTIFICATION

TRADE NAME: **Housecoat II Low Lustre**
CHEMICAL FAMILY: LATEX EMULSION/PIGMENT DISPERSION
SYNONYMS: **4400, 4490, 4492, 4493, 4496**
DOT CLASSIFICATION: NOT REGULATED
CAS NUMBER: MIXTURE

PHYSICAL DATA

BOILING RANGE (F): 212(Water)
FREEZING POINT (F): 32(Water)
SOLUBILITY IN WATER: Dilutable
SPECIFIC GRAVITY: 1.2-1.3
VAPOR DENSITY (AIR=1): <1
% VOLATILE BY WEIGHT: 51-55
VAPOR PRESSURE (mmHg@68F): 17
pH INFORMATION: 9.0-10.0
EVAPORATION RATE (BUTYL ACETATE = 1): <1 (Water)
APPEARANCE/ODOR: Liquid, various colors, latex odor.

HAZARDOUS INGREDIENTS

<u>INGREDIENT</u>	<u>PERCENT</u>	<u>TLV PPM</u>	<u>TLV MG/M3</u>	<u>CAS NUMBER</u>
None				

This paint mixture contains pigments classed by ACGIH as "nuisance dusts". Exposures to spray mists or sanding dusts should be controlled to below 10 mg/m³ through usage of NIOSH/MSHA TC23C or equivalent approved dust filter respirators. Follow respirator manufacturer's directions for respirator use.

SECTION 313 SUPPLIER NOTIFICATION:

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372:

NONE above de minimis concentrations.

HMIS RATING: HEALTH = 1 FLAMMABILITY = 0 REACTIVITY = 0

* The user should determine appropriate personal protective equipment based on use conditions.

FIRE AND EXPLOSION DATA

FLASH POINT: Not determined (aqueous system)

FIRE EXTINGUISHING MEDIA: Non-flammable (aqueous emulsion)

When water evaporates, remaining material can burn.

LEL: Not determined (aqueous system)

UEL: Not determined (aqueous system)

Use all-purpose foam for large fires, and CO₂ or dry chemical media for small fires.

SPECIAL FIRE FIGHTING PROCEDURES: Self-contained breathing apparatus when fighting fires in enclosed areas.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Product will not burn but may spatter if temperature exceeds boiling point of water. Dried solids can burn, giving off oxides and carbon.

REACTIVITY DATA

THIS PRODUCT IS STABLE UNDER NORMAL (AMBIENT) CONDITIONS AND HAZARDOUS POLYMERIZATION WILL NOT OCCUR.

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion of dried film may produce carbon dioxide and carbon monoxide.

CONDITIONS OR MATERIALS TO AVOID: NONE

HEALTH HAZARD DATA

EFFECTS OF ACUTE OVER EXPOSURE:

INGESTION: Irritating to gastrointestinal tract, abdominal pain, and diarrhea.

INHALATION: Trace component, residual monomer, and other organics may be irritating to eyes, skin, mucous membranes, respiratory tract and may produce symptoms of headache, nausea in poorly ventilated areas.

SKIN CONTACT: Prolonged contact may cause transient reddening of the skin.

EYE CONTACT: Direct contact may be irritating to eyes.

EFFECTS OF REPEATED OVEREXPOSURE: This mixture as provided shows no evidence of chronic effects from available information.

EMERGENCY FIRST AID PROCEDURES:

INGESTION: Induce vomiting; consult a physician.

INHALATION: Remove to fresh air. If irritation persists, seek medical attention. If victim is not breathing, qualified personnel should administer artificial respiration. Seek immediate medical attention.

SKIN CONTACT: Wash affected area thoroughly with mild soap and water. If irritation develops and persists seek medical attention.

EYE CONTACT: Immediately flush eyes for 15 minutes occasionally lifting eyelids. If victim wears contact lenses, remove lenses and continue rinsing. Obtain medical attention.

TOXICITY DATA

NOTE: Formaldehyde may be generated under acid conditions. Maintain adequate ventilation under these conditions to prevent exposure above TWA 0.3 ppm and STEL of 0.6 ppm.

SPILL OR LEAK PROCEDURES

STEPS TO TAKE IN CASE OF SPILL OR LEAK: Major spills should be collected for disposal. Minor spills may be flushed to sewer if permitted by local, state, and federal regulations.

WASTE DISPOSAL METHOD: Incinerate or bury in suitable landfill where permitted by appropriate government regulations.

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Use appropriate MSHA/NIOSH-approved respirator in areas with poor ventilation and when exposed to spray mists or sanding dusts.

VENTILATION: General room ventilation is expected to be satisfactory. Use local exhaust if needed.

EYE PROTECTION: Safety glasses and available eye bath.

PROTECTIVE GLOVES: Use gloves impervious to water and soap.

SPECIAL PRECAUTIONS

Avoid breathing vapors and keep containers closed. Keep from freezing. Keep out of the reach of children.

DISCLAIMER

The information in this MSDS was obtained from sources that we believe are reliable. However, the information is provided without any representation or warranty, expressed or implied, regarding its accuracy or completeness. The conditions of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product. Disposal of containers should be in accordance with applicable federal, state and local laws and regulations.

Safety Data Sheet
OSHA Hazard Communication Standard
29 CFR 1910.1200. Prepared to GHS Rev 3.



Revision
date: 08.11.2016

Date of issue: 06.07.2015

Page: 1/10

Trade name: Aqua-Gel® II Utility Cable Pulling Lubricant
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SECTION 1: Identification

Product identifier:	Aqua-Gel® II Utility Cable Pulling Lubricant.
Synonyms:	None available.
Product Code Number:	31-371(G), 31-375(G), 31-378(G), 31-3855.
SDS number:	ID001
Recommended use:	Wire Pulling Lubricant.
Recommended restrictions:	None known.

Manufacturer/Importer/Supplier/Distributor information:

Company Name:	IDEAL INDUSTRIES, INC.
Company Address:	Becker Place, Sycamore, IL 60178
Company Telephone:	Office hours (Mon – Fri) 7AM - 5 PM (CDT) (815)895-5181
Company Contact Name:	Darryl Docter.
Company Contact Email:	IDEAL@IDEALINDUSTRIES.COM
Emergency phone number:	24 HOUR EMERGENCY NUMBER: (815)895-5181.

SECTION 2: Hazard(s) identification
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Classification of the chemical in accordance with paragraph (d) of §1910.1200:

Physical hazards

Not classified as a physical hazard under GHS criteria

Health hazards

Not classified as a health hazard under GHS criteria

Environmental hazards

Not classified as a physical hazard under GHS criteria.

GHS Signal word:	Not applicable.
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GHS Hazard statement(s):	Not applicable.
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GHS Hazard symbol(s):	Not applicable.
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GHS Precautionary statement(s):

Prevention:

No prevention precautionary statements required.

Response:

No response precautionary statements required

Storage:

No storage precautionary statements required.

Disposal:

No disposal precautionary statements required.

Hazard(s) not otherwise

Classified (HNOC): None known.

Percentage of ingredient(s) of unknown acute toxicity:

Not applicable.

SECTION 3: Composition/information on ingredients

Mixture:

Chemical name	CAS#	Concentration (weight %)
Potassium Hydroxide (20% solution)	1310-58-3	< 2%

Note: The balance of the ingredients are not classified as hazardous or below the threshold concentration, under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

SECTION 4: First-aid Measures

Description of necessary measures:

Inhalation: Obtain medical attention if there are signs of breathing difficulties.

Skin contact: Wash with plenty of soap and water. Remove contaminated clothing and thoroughly clean before reuse.

Eye contact: Flush eyes with water for at least 15 minutes, occasionally lifting eyelids. If pain or redness persists after flushing, obtain medical attention.

Ingestion: Do not induce vomiting. Consult physician or local poison control center.

Most important symptoms/effects, acute and delayed: None expected.

Indication of immediate medical attention and special treatment needed: If any symptoms are observed, contact a physician and give them this SDS sheet. If exposed or concerned: Get medical advice/attention.

SECTION 5: Fire-fighting measures

Suitable extinguishing media: Not flammable. Use extinguishing media suitable for surrounding materials.

Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical: Extreme temperatures of combustion or burning and contact with nitrites could result in the formation of nitrosamines which are potential carcinogens. This condition is unlikely to occur.
Combustion products - Carbon monoxide, Carbon dioxide.

Special protective equipment and precautions for fire-fighters: For fire involving this material, do not enter any enclosed or confined fire space without proper protective equipment. This may include self-contained breathing apparatus to protect against the hazardous effects of combustion products and oxygen deficiencies.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Stay upwind and away from spill/release. For large spillages, notify persons downwind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Methods and material for containment and cleaning up:

Persons not wearing protective equipment should be excluded from area of spill until cleanup has been completed. Stop spill at source, wipe up, shovel or vacuum spilled material. Clean up spills immediately as they can be dangerously slippery. Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required.

SECTION 7: Handling and Storage

Precautions for safe handling: Wash thoroughly after handling. Wear protective gloves/clothing and eye/face protection. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Conditions for safe storage, including any incompatibles: Store at temperatures between 40 - 180°F. Avoid freezing. Keep away from children, infants and pets. Keep container(s) tightly closed and properly labeled. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

"Empty" containers retain residue and may be dangerous. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

SECTION 8: Exposure controls/personal protection

Control Parameters:

Occupational exposure limits:

US OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200): Permissible Exposure Limits		
Substance	PEL-TWA (8 hour)	PEL-STEEL (15 min)
Potassium Hydroxide	No data available	No data available

US ACGIH Threshold Limit Values		
Substance	TLV-TWA (8 hour)	TLV-STEEL (15 min)
Potassium Hydroxide	2 mg/m ³ Ceiling	No data available

NIOSH Exposure Limits		
Substance	TWA	STEEL
Potassium Hydroxide	2 mg/m ³ Ceiling	No data available

Appropriate engineering controls: General (mechanical) room ventilation is expected to be adequate. Special local ventilation is suggested at points where vapors can be expected to escape to the workplace air or in enclosed areas.

Individual protection measures, such as personal protective equipment:

Eye/face protection: None normally required, but the use of OSHA compliant safety glasses or splash goggles recommended.

Skin and Hand protection: None normally needed -Neoprene if necessary. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Respiratory protection: None normally required.

Other: Eye wash / eye bath in the work area is recommended but not necessary.

Thermal hazards: No data available.

SECTION 9: Physical and chemical properties

Appearance

Physical state:	Gel
Form:	Clear gel.
Color:	Blue.
Odor:	Mild odor.
Odor threshold:	No data available
pH:	6.5 – 8.0
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	100°C (212°F)
Flash point:	None
Evaporation rate:	No data available
Flammability (solid, gas):	Not applicable
Upper/lower flammability or explosive limits	
Flammability limit – lower (%):	No data available
Flammability limit – upper (%):	No data available
Explosive limit – lower (%):	No data available
Explosive limit – upper (%):	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative Density:	0.9930-1.0330
Solubility(ies):	Infinite.
Partition coefficient (n-octanol/water):	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	20000-40000 cps

Other information:

% Volatile by volume:	< 90%
Percent solids by weight:	~10

SECTION 10: Stability and Reactivity

Reactivity:	Not chemically reactive.
Chemical stability:	Stable under normal ambient and anticipated conditions of use.
Possibility of hazardous reactions:	Hazardous reactions not anticipated.
Conditions to avoid:	Avoid prolonged storage at temperatures exceeding 190°F. Extreme temperatures of combustion or burning and contact with nitrites could result in the formation of nitrosamines which are potential carcinogens. This condition is unlikely to occur.
Incompatible materials:	Avoid contact with strong oxidizers and nitrites.

Hazardous decomposition Products: In the unlikely event of combustion of dried residue, oxides and nitrogen may be released.

SECTION 11: Toxicological information

Information on likely routes of exposure:

Inhalation: Not an expected route of entry.
Ingestion: Not an expected route of entry.
Skin: Not an expected route of entry.
Eyes: Not an expected route of entry.

Symptoms related to the physical, chemical, and toxicological characteristics:
None expected.

Delayed and immediate effects and chronic effects from short or long-term exposure:
Detailed below.

Numerical measures of toxicity:

Ingredient Information:

Substance	Test Type (species)	Value
Potassium hydroxide	LD ₅₀ Oral (Rat)	273 mg/kg
	LD ₅₀ Dermal (Rabbit)	No data available
	LC ₅₀ Inhalation (Rat)	No data available

Product Acute Toxicity Estimates:

Acute Oral Toxicity – no data available
Acute Dermal Toxicity - no data available
Acute Inhalation Toxicity - no data available

Skin corrosion/irritation: Not expected to cause skin corrosion or irritation.

Serious eye damage/eye irritation: Not expected to cause eye damage / irritation.

Respiratory sensitization: No information available on the mixture, however none of the components have been classified as a respiratory sensitizer (or are below the concentration threshold for classification).

Skin sensitization: No information available on the mixture, however none of the components have been classified as a skin sensitizer (or are below the concentration threshold for classification).

Germ cell mutagenicity: No information available on the mixture, however none of the components have been classified for

germ cell mutagenicity (or are below the concentration threshold for classification).

Carcinogenicity:

No information available on the mixture, however none of the components are listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA.

Reproductive toxicity:

No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification).

**Specific target organ toxicity-
Single exposure:**

No information available on the mixture, however none of the components have been classified for STOT SE (or are below the concentration threshold for classification).

**Specific target organ toxicity-
Repeat exposure:**

No information available on the mixture, however none of the components have been classified for STOT RE (or are below the concentration threshold for classification).

Aspiration hazard:

No information available on the mixture, however none of the components have been classified for aspiration hazard (or are below the concentration threshold for classification).

Further information:

No data available.

SECTION 12: Ecological information

Ecotoxicity:

Product data: No data available

Ingredient Information:

Substance	Test Type	Species	Value
Potassium hydroxide	LC ₅₀	Fish - Gambusia affinis (Mosquito fish)	85 mg/l (24h)

	LC ₅₀	Aquatic crustacea	No data available
	EC ₅₀	Algae	No data available

Persistence and Degradability: No data available

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

Other adverse effects: No data available.

SECTION 13: Disposal considerations

Disposal instructions:

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

SECTION 14: Transport Information

DOT: This material is not classified as dangerous under DOT regulations.

IATA: This material is not classified as dangerous under IATA regulations.

IMDG: This material is not classified as dangerous under IMDG regulations.

SECTION 15: Regulatory Information

Safety, health and environmental regulations specific for the product.

USA:

United States Federal Regulations: This SDS complies with the OSHA, 29 CFR 1910.1200. The product is hazardous under OSHA.

Toxic Substances Control Act (TSCA) – All substances in this product are listed, as required, on the TSCA inventory.

SARA Superfund and Reauthorization Act of 1986 Title III sections 302, 311, 312 and 313:

Section 302 – No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

CERCLA Hazardous Substance List, 40 CFR 302.4:

Component	Reportable Quantity
Potassium Hydroxide	1000 lbs

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None listed.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3): None listed.

SARA Title III

Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A): None listed.

Section 311/312 (40 CFR 370):

Acute Health Hazard: No

Chronic Health Hazard: No

Fire Hazard: No

Pressure Hazard: No

Reactivity Hazard: No

Section 313 Toxic Release Inventory (40 CFR 372):

None

STATE REGULATIONS:

This SDS contains specific health and safety data is applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

California Proposition 65 (California Safe Drinking Water and Toxic Enforcement Act of 1986): No components are listed on Prop 65.

Massachusetts Right to Know: Potassium hydroxide is listed on the Massachusetts Right to Know List.

Minnesota Hazardous Substance List: None of the components are listed on the Minnesota Hazardous Substance List.

New Jersey Right to Know: Potassium hydroxide is listed on the New Jersey Right to Know list.

Pennsylvania Right to Know: Potassium hydroxide is listed on the Pennsylvania Right to Know List.

Canada WHMIS Hazard Class: Not classified.

SECTION 16: Other information, including date of preparation or last revision.

Revision Date: June 07, 2015

To the best of our knowledge, the information contained herein is accurate. However IDEAL INDUSTRIES INC. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

JT-3450



Corporate Headquarters
1290 Osborne Road NE Minneapolis, MN 55432
Non-Emergency Tel: 1-855-795-8555

Product Use: Mixture, components
for Water Treatment Applications

24 Hour Emergency Response No.: 800-424-9300 CHEMTREC®

Personal Protective Equipment(s)

GHS Pictogram(s)

DOT Symbol(s)

HMIS



Non Regulated
Materials



To the best of our knowledge, this Safety Data Sheet is prepared to comply with US OSHA 29 CFR 1910.1200 and other governmental agencies both domestic and foreign. Hazard and precautionary statements are based on maximum listed concentrations of each hazardous ingredient. Unlisted ingredients are not "hazardous" per the OSHA Hazard Communication Standard (29 CFR 1910.1200) and/or other governmental agencies.

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

GHS Label Element Signal Word	GHS Symbol(s)	Hazard Statements	Precautionary Statements
"WARNING"		H303-May be harmful if swallowed. H316-Causes mild skin irritation. H320-Causes eye irritation.	P102-Keep out of reach of children. P233-Keep container tightly closed. P262-Do not get in eyes, on skin or on clothing. P264-Wash thoroughly after handling. P281-Use personal protective equipment as required.

3. PRODUCT INGREDIENTS

Hazardous Components	% by Wt.	CAS Number	Hazard Statements (Section 15)	Hazard Symbol(s)
2-Hydroxy-1,2,3-Propanetricarboxylic Acid	0-20	77-92-9	H303-May be harmful if swallowed. H316-Causes mild skin irritation. H320-Causes eye irritation	
Hydroxycarboxylic Acid Salt	0-20	31138-65-5	H303-May be harmful if swallowed. H316-Causes mild skin irritation. H320-Causes eye irritation	
Hydroxy Phosphonoacetic Acid	0-20	23783-26-8	H302-Harmful if swallowed. H314-Causes severe skin burns and eye damage. H332-Harmful if inhaled. H412-Harmful to aquatic life with long lasting effects.	
Non Hazardous Ingredient	40-100			
Total	100.00			

4. FIRST AID MEASURES

Inhalation:	Remove to fresh air. If not breathing, give artificial respiration. If breathing difficult, give oxygen. Call a physician if any difficulties persist.
Eyes:	Flush eyes with a large amount of water for 15 minutes. Seek medical attention immediately if any irritation persists. After first aid, get appropriate in-plant, paramedic or community medical support.
Skin:	Wash affected areas thoroughly with soap and water for at least 15 minutes. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Seek medical attention if any irritation persists.
Ingestion	If person can swallow, give 2 glasses of water to drink. DO NOT INDUCE VOMITING! After first aid, seek appropriate in-plant, paramedic, or community medical support. Never give anything by mouth to an unconscious person.

After first aid, get appropriate in-plant, paramedic, or community medical support.

5. FIRE FIGHTING MEASURES

Flammability Classification:	Non Flammable
Suitable Extinguishing Media:	Water fog, Alcohol foam, Carbon Dioxide, Dry Chemical
Unusual Fire or Explosion Hazards:	None known other than material can splatter above 100°C/212°F.
Hazardous Combustion Products:	Unknown but carbon monoxide may be released on burning.
Fire-Fighting Instructions:	Do not release runoff from fire control methods to sewers or waterways.
Fire-Fighting Equipment:	Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full face piece operated in pressure-demand or positive-pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation
Small Spills:	Absorb spill with paper towel or similar absorbent; or flush to sewer or ground with large amounts of water.
Large Spills:	For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways. Absorb spill with vermiculite, oil dry or similar non-reactant absorbent. Solidified product represents no environmental hazard.
Containment:	
Cleanup:	Accumulate the absorbed materials and dispose of according to federal, state and local regulations.
Environmental Precautions:	Follow applicable OSHA/CERCLA or any other regulations (29 CFR 1910.120) as well as any state or local regulations that may apply.

7. HANDLING AND STORAGE

Precautions for safe handling:	Use the recommended safety controls and personal protective equipment as outlined. Fully review all data before handling of the material itself. Avoid contact with skin or eyes. Avoid breathing dust or mist. Keep from contact with clothing and other combustible materials. Observe good personal hygiene and housekeeping practices. Wash thoroughly after handling.
Conditions for safe Storage:	Do not store in direct sunlight. Store in a tightly closed container. Store in a cool dry, well ventilated area. Do not store this material near any strong acids, bases, oxidizers, flammables or any other type of reactive material. Do not expose the material to temperature extremes. Do not store product above 77°F.
Regulatory Requirements:	Store materials according to all local, state and federal guidelines that are established for non-regulated chemical products.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with limit values that require monitoring at the workplace:

Hazardous Components	CAS Number	OSHA PEL/TWA STEL	ACGIH TLV/TWA STEL	Other
2-Hydroxy-1,2,3-Propanetricarboxylic Acid	77-92-9	None Est.	None Est.	
Hydroxycarboxylic Acid Salt	31138-65-5	None Est.	None Est.	
Hydroxy Phosphonoacetic Acid	23783-26-8	None Est.	None Est.	

Engineering Controls:	
Ventilation:	Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.
Respiratory Protection:	Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or non-routine operations (cleaning spills, reactor vessel, or storage tanks), wear an SCBA. <i>Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.</i> If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.
Personal Protective Equipment (PPE):	Wear protective eyeglasses or chemical safety goggles, per OSHA eye-and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses. At a minimum wear safety glasses with side shields as well as chemically protective gloves and aprons to prevent prolonged or repeated skin contact.
Safety Stations:	Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.
Contaminated Equipment:	Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.
Comments:	Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.
Work/Hygienic Practices	Consistent use of afore-mentioned personal protective equipment is essential in preventing injuries or irritation.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	Liquid	Appearance:	Amber color	Odor:	Characteristic
pH:	<6	Vapor Pressure:	Same as water	Flammability:	Non Flammable
Specific Gravity:	1.14+/-	Vapor Density:	Same as water	Flash Point:	NIA
Water Solubility:	Complete	Evaporation Rate:	1.00	Auto Ignition Temp:	NIA
Other Solubilities:	Not Determined	Melting Point:	NA	LEL:	Not Determined
% Volatile:	75%	Freeze Point:	Approx. 32°F	UEL:	Not Determined
Boiling Point:	212°F+/-	Decomposition Temp:	Not Determined		

10. STABILITY AND REACTIVITY

Stability:	This product is stable at room temperature in closed containers under normal storage and handling conditions. However, avoid temperature extremes.
Conditions to Avoid:	Excessive temperature, contact with any type of reactive chemicals
Hazardous Polymerization:	Hazardous polymerization will not occur.
Chemical Incompatibilities:	Avoid contact with Strong Acids, Strong Alkalies, Oxidizers or any other type of reactive material.
Hazardous Decomposition Products:	There are no known hazardous decomposition products for this material unless the material is burned in which case undetermined evolution of toxic gases may occur.

11. TOXICOLOGICAL INFORMATION

Hazardous Components	CAS No.:	LD50 of Ingredient (Specify Species & Route)	LD50 Dermal of Ingredient (Specify Species)
2-Hydroxy-1,2,3-Propanetricarboxylic Acid	77-92-9	3000mg/kg Oral Rat	Irritating to eyes and skin.
Hydroxycarboxylic Acid Salt	31138-65-5	No information available at publication.	No information available at publication.
Hydroxy Phosphonoacetic Acid	23783-26-8	2754mg/kg Oral Rat	Irritant

Primary Irritant Effects:

Routes of Entry:	Absorbed through skin, Dermal Contact, Eye Contact, Inhalation.
Eye Effects:	Irritation to eyes & possible burning if materials are not immediately rinsed from the eye.
Acute Inhalation Effects:	Might produce irritation to respiratory system.
Skin Effects:	Irritation to skin.
Acute Oral/Ingestion Effects:	Not tested for this blend. Harmful if swallowed.
Chronic Effects on Humans:	No specific studies have been conducted for this specific blend.
Other Toxic Effects on Humans:	No specific studies have been conducted for this specific blend.
Special Remarks- Human Chronic Effects:	No other information for chronic effects on humans.
Carcinogenicity:	IARC, NTP, and OSHA do not list this product or its components as a carcinogen.
Mutagenicity:	No mutagenic effects are known to be applicable for the formulation components of this product.
Teratogenicity:	No studies have been performed for this specific product blend.
Target Organ Statement:	No studies have been conducted for this specific product blend.

12. ECOLOGICAL INFORMATION

Hazardous Components	CAS No.:	LC:50	EC:50
2-Hydroxy-1,2,3-Propanetricarboxylic Acid	77-92-9	440-706mg/l 96hr Gold Fish	No data available at publication
Hydroxycarboxylic Acid Salt	31138-65-5	No information available at publication.	No information available at publication.
Hydroxy Phosphonoacetic Acid	23783-26-8	140mg/l 48hr Daphnia Magna	30mg/l 72hr Algae
Special Remarks-Products of biodegradation:	The Component(s) of this product are not subject to rapid biodegradation.		

13. WASTE DISPOSAL CONSIDERATIONS

Disposal Regulatory Requirements:	Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable federal, state and local regulations.
Container Cleaning and Disposal:	Triple rinse the empty containers with water before disposal to reconditioned or land fill or garbage.

14. TRANSPORTATION INFORMATION

Proper Shipping Name: NON REGULATED MATERIALS

DOT/GHS Shipping Label Symbol(s):

Contains:

Hazard Class:	Marine Pollutant	UN Number:	Packing Group:	ERG Number:	
Non Hazardous	No	NA	NA	NA	None
Special Shipping Notations:	None				

Note: Transportation information provided is for reference only. Client is urged to consult CFR 49, Parts 100-177, IMDG, IATA, EU, United Nations, TDG and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

15. REGULATORY INFORMATION

Hazard Symbol(s):



Hazard Statements:

H303-May be harmful if swallowed.
H316-Causes mild skin irritation.
H320-Causes eye irritation

Safety Phrases:

S3/7/9/49-Keep only in the original container tightly closed in a cool well-ventilated place.
S24/25-Avoid contact with skin and eyes.
S26-In case of contact with eyes, rinse immediately with plenty of water and seek medical advise.
S36/37/39-Wear suitable protective clothing, gloves and eye/face protection.
S62-If swallowed do not induce vomiting: seek medical advise immediately and show this container or label.

EPA Regulations:

RCRA Hazardous Waste Number:	Product blend is not listed (40 CFR 261.33)
RCRA Hazardous Waste Classification (40 CFR 261.):	Product blend is not classified.
CERCLA Hazardous Substance (40 CFR 302.4):	Product blend is unlisted specific per RCRA, Sec. 3001; CWA, Sec. 311 (b) (4); CWA, Sec. 307 (a),
CAA, Sec. 112 CERCLA Reportable Quantity (RQ):	Not listed
SARA 313 Codes: This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.	Not listed
SARA Toxic Chemical (40CFR 372.65):	Not listed
Sara 302/304 Extremely Hazardous Substance (40CFR 355)	Not listed
Sara 313 SARA EHS (Extremely Hazardous Substance) (40 CFR 355):	Not listed
Threshold Planning Quantity (TPQ):	Not listed
OSHA Regulations:	
Air Contaminant (20 CFR 1910.1000, Table Z-1, Z-1-A):	Not listed.
OSHA Specifically Regulated Substance (29 CFR 1910.):	Not Listed

State Regulations:

As a product blend, the materials are generally not listed. Check with your local state regulatory board for more detailed information regarding the specific components of this product.

National Regulations:

All components of this product are listed in the U.S. Environmental Protection Agencies, Toxic Substance Control Act (TSCA) Chemical Substance Inventory.
All components of this product are listed on the Canadian Non-Domestic Substances List (NDSL).

16. OTHER INFORMATION

SDS Prepared/Reviewed By:

M. Juhl

Date of Preparation:

3/2015

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

USER'S RESPONSIBILITY: The information and recommendations contained herein cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. It is your responsibility to use this information to develop appropriate work practice guidelines and employee instructional programs for your operation.

DISCLAIMER OF LIABILITY: As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this material. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state and local laws and regulations remains the responsibility of the user.

**KANO LABORATORIES, INC.
SAFETY DATA SHEET**

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: AEROKROIL

Product Use: Penetrant/Lubricant for Industrial Use

Manufacturer: Kano Laboratories, Inc.
1000 E. Thompson Lane
Nashville, TN 37211

Emergency Phone Number: Chemtrec 1 (800) 424-9300

Manufacturer Phone Number: 615-833-4101

Website: www.kanolaboratories.com

SDS Date of Preparation: October 5th, 2016

SECTION 2: HAZARDS IDENTIFICATION

GHS / HAZCOM 2012 Classification:

Health	Physical
Skin Irritation Category 2 Eye Irritation Category 2A Specific Target Organ Toxicity – Single Exposure Category 3 (Respiratory Irritation, CNS) Aspiration Hazard Category 1	Flammable Aerosol Category 2 Gas Under Pressure: Compressed Gas

Label Elements

Danger!



Flammable aerosol.

Contains gas under pressure; may explode if heated.

Causes skin irritation.

Causes serious eye irritation.

May be fatal if swallowed and enters airways.

May cause respiratory irritation.

May cause drowsiness or dizziness.

Keep away from heat, sparks, open flames, and hot surfaces. No smoking.

Do not spray on an open flame or other ignition source.

Pressurized container. Do not pierce or burn, even after use.

Avoid breathing mist, vapors or spray.

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Wear protective gloves, eye protection and face protection.

IF SWALLOWED: Immediately call a POISON CENTER. Do NOT induce vomiting.

IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical attention.

Take off contaminated clothing and wash it before reuse.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing. If eye irritation persists: Get medical attention.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER if you feel unwell.

In case of fire: Use carbon dioxide, dry chemical or foam to extinguish.

Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

Store in a well-ventilated place.

Store locked up.

Dispose of contents and container in accordance with local and national regulations.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS#	%
Severely Hydrotreated Petroleum Distillates	64742-52-5	30-50
Light Petroleum Distillates	64742-95-6 64742-88-7 64742-47-8 64742-96-7	30-50
Proprietary Ingredients	Proprietary	1-10
Dipropylene Glycol Monopropyl Ether	29911-27-1	1-5
Diisobutyl Ketone	108-83-8	0-15
Dipropylene Glycol Methyl Ether	88917-22-0	0-5
Aliphatic Alcohol #1	123-42-2	<3
Aliphatic Alcohol #2	78-83-1	<3
Carbon Dioxide Propellant	124-38-9	1-15

The specific identity and/or exact percentage has been withheld as a trade secret.

SECTION 4: FIRST AID MEASURES

Eye: Rinse thoroughly with water for several holding the eye lids open to be sure the material is washed out. Get medical attention if irritation develops or persists.

Skin: Remove contaminated clothing. Wash contact area thoroughly with soap and water. Get medical attention if irritation or symptoms of exposure develop. Launder clothing before re-use.

Inhalation: Remove victim to fresh air. Give artificial respiration if needed. If breathing is difficult, oxygen should be administered by qualified personnel. Get medical attention if symptoms develop.

Ingestion: DO NOT induce vomiting. Keep the victim calm and warm. Never give anything by mouth to an unconscious or drowsy person. Get immediate medical attention.

Most important symptoms and effects, acute and delayed: May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects such as headache, dizziness, nausea and vomiting. Harmful or fatal if swallowed. Aspiration into the lungs during ingestion or vomiting may cause lung damage.

Indication of immediate medical attention and special treatment, if needed: If swallowed, get immediate medical attention.

SECTION 5: FIRE FIGHTING MEASURES

Suitable (and Unsuitable) Extinguishing Media: Use carbon dioxide, dry chemical or foam. Water may be ineffective but can be used to cool containers and structures.

Specific Hazards Arising from the Chemical: Contents under pressure. Keep away from heat and open flames. Container may rupture or explode in the heat of a fire. Prolonged exposure to temperatures above 120°F may cause cans to burst. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back.

Never use welding or cutting torch on or near containers (even empty) because product can ignite explosively. Combustion products may be hazardous: Oxides of carbon, organic compounds, smoke and fumes.

Special Protective Equipment and Precautions for Fire-fighters: Wear NIOSH approved positive pressure, self-contained breathing apparatus and full protective clothing. Cool fire exposed containers with water. Protect against bursting cans.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, Protective equipment, and Emergency procedures: Wear appropriate protective clothing to prevent eye and skin contact including impervious gloves, safety goggles and respirator if needed.

Environmental precautions: Avoid release to the environment. Report spills and releases as required to appropriate authorities.

Methods and Materials for Containment and Cleaning up: Remove all ignition sources such as open flames, spark producing equipment, pilot lights, etc. Ventilate area. Cover with an inert absorbent material and collect into an appropriate container for disposal.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling: Avoid breathing vapors, aerosols and mists. Use with adequate ventilation. Avoid contact with the eyes, skin and clothing. Wash exposed skin thoroughly with soap and water after use. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Do not cut, braze, solder, grind or weld on or near containers. Contents under pressure. Do not puncture or incinerate container.

Conditions for Safe Storage, Including any Incompatibilities: Store in a cool, well ventilated area at temperatures below 120°F. Do not store in direct sunlight. Store as a Level 3 aerosol.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name	Exposure Limits
Severely Hydrotreated Petroleum Distillates	5 mg/m3 TWA OSHA PEL 5 mg/m3 TWA ACGIH TLV(inhalable fraction)
Light Petroleum Distillates	500 ppm TWA OSHA PEL (As stoddard solvent) 200 ppm TWA ACGIH TLV (as kerosene)
Dipropylene Glycol Monopropyl Ether	None Established
Proprietary Ingredients	None Established
Diisobutyl Ketone	25 ppm TWA OSHA PEL 50 ppm TWA ACGIH TLV
Dipropylene Glycol Methyl Ether	None Established
Aliphatic Alcohol #1	50 ppm OSHA TWA PEL- 50 ppm TWA ACGIH TLV
Aliphatic Alcohol #2	100 ppm TWA OSHA PEL 50 ppm TWA ACGIH TLV
Carbon Dioxide Propellant	5000 ppm OSHA PEL-TWA 5000 ppm ACGIH TLV-TWA 30000 ppm ACGIH TLV-STEL

Appropriate Engineering Controls: Use with adequate general or local exhaust ventilation to maintain concentrations below the occupational exposure limits. Use explosion proof electrical equipment and wiring where required.

Personal Protective Equipment:

Respiratory Protection: If the exposure limits listed above are exceeded, a NIOSH approved respirator with organic vapor cartridges may be used. For higher exposures, a supplied air respirator may be required. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.

Hand protection: Impervious gloves are recommended when needed to avoid skin contact.

Eye Protection: Chemical safety goggles recommended.

Skin Protection: Impervious clothing as required to prevent skin contact and contamination of personal clothing.

Hygiene measures: Suitable eye wash and washing facilities should be available in the work area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Slightly reddish liquid packaged as an aerosol	Odor:	Solvent
Odor Threshold:	Not available	pH:	Not available
Melting/Freezing Point:	Not available	Boiling Point/Range:	Not available
Flash Point:	132°F (55.5°C) TOC	Evaporation Rate:	Not available
Flammability: (Solid, Gas)	Not applicable	Flammability Limits:	10.9% (aliphatic alcohol #2) LEL: 0.7% (light petroleum distillates)
Vapor Pressure:	Not available	Vapor Density:	Not available
Relative Density:	0.8596	Solubilities:	Negligible in Water
Partition Coefficient: (N-Octanol/Water)	Not available	Autoignition Temperature:	Not available
Decomposition Temperature:	Not available	Viscosity:	Not available

SECTION 10: STABILITY AND REACTIVITY

Reactivity: None known.

Chemical Stability: Stable under normal conditions of storage or use.

Possibility of Hazardous Reactions: None known.

Conditions to avoid: Avoid heat, sparks, flames and all other sources of ignition.

Incompatible Materials: Avoid strong oxidizing agents, reducing agents, acids and bases.

Hazardous decomposition products: Combustion will produce oxides of carbon, acetone, acrid fumes and smoke.

SECTION 11: TOXICOLOGICAL INFORMATION

Potential Health Effects:

Eye: May cause eye irritation with redness, tearing and stinging.

Skin: May cause irritation with redness, rash, swelling. Prolonged or repeated contact may result in defatting and dermatitis.

Inhalation: Inhalation of vapors or mists may cause mucous membrane and upper respiratory tract irritation and central nervous system depression. Symptoms may include coughing, wheezing, shortness of breath, headache, dizziness, drowsiness, nausea, fatigue and unconsciousness.

Ingestion: Ingestion is an unlikely route of exposure for aerosol products. Swallowing may cause gastrointestinal irritation with abdominal pain, nausea, vomiting and diarrhea and central nervous system depression with symptoms

including headache, dizziness, intoxication, weakness, nausea, and vomiting. Aspiration into the lungs during ingestion or vomiting may cause lung damage.

Chronic Hazards: Prolonged or repeated exposure may cause effects on the central nervous system, kidney and liver.

Carcinogen Status: None of the components of this product at greater than 0.1% are listed as carcinogens by OSHA, IARC or NTP.

Acute toxicity: Toxicological testing has not been performed on this product as a mixture.

Severely Hydrotreated Petroleum Distillates: Oral rat LD50 > 5000 mg/kg; Dermal rat LD50 > 5000 mg/kg

Inhalation rat LC50 > 2.18 mg/L/4 hr.

Light Petroleum Distillates: Oral rat LD50 >5000 mg/kg, Inhalation rat LC50 >5.28 mg/L/4 hr, Dermal rabbit LD50 >2000 mg/kg

Proprietary Ingredients: Oral rat LD50 2760 mg/kg; Dermal rabbit LD50 >2000 mg/kg

Dipropylene Glycol Monopropyl Ether: Oral rat LD50 >2000 mg/kg Dermal rabbit LD50 >2000 mg/kg.

Diisobutyl Ketone: Oral rat LD50 5233 mg/kg; Dermal rat LD50 > 2000 mg/kg; Inhalation rat LC50 14.5 mg/L/4 hr.

Dipropylene Glycol Methyl Ether: Oral rat LD50 >5000 mg/kg, Dermal rat LD50 >2000 mg/kg, Inhalation rat LD50 >5.7 mg/L/4 hr

Aliphatic Alcohol #1: Oral rat LD50 3002 mg/kg; Dermal rat LD50 > 1875 mg/kg; Inhalation rat LC50 > 7.6 mg/L/4 hr.

Aliphatic Alcohol #2: Oral rat LD50 > 2830 mg/kg; Inhalation rat LC50 24.6 mg/L/4 hr.; Dermal rabbit LD50 > 2000 mg/kg

Carbon Dioxide: Inhalation rat LC50 167857 ppm/4 hr

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity: No toxicity data available for the product.

Severely Hydrotreated Petroleum Distillates: 96 hr. LC50 Pimephales promelas > 100 mg/L; 48 hr. EC50 daphnia magna >1000 mg/L; 72 hr. EC50 Pseudokirchnerella subcapitata > 100 mg/L

Light Petroleum Distillates: 96 hr LL50 Oncorhynchus mykiss 2.5 mg/kg, 48 hr EL50 daphnia magna 1.4 mg/L, 72 hr EL50 Pseudokirchnerella subcapitata 1.3 mg/L

Proprietary Ingredients: 96 hr. LC50 Oncorhynchus mykiss 18350 ug/L

Dipropylene Glycol Monopropyl Ether: 96 hr LC50 Oncorhynchus mykiss >100 mg/L, 48 hr EC50 daphnia magna >100 mg/L, 96 hr EC50 Pseudokirchnerella subcapitata >1000 mg/L

Diisobutyl Ketone: 96 hr. LC50 Oncorhynchus mykiss 30 mg/L; 48 hr. EC50 daphnia magna 37.2 mg/L, 72 hr. EC50 Pseudokirchnerella subcapitata 46.9 mg/L

Dipropylene Glycol Methyl Ether: 96 hr LC50 Oncorhynchus mykiss 110.2 mg/L, 48 hr LC50 daphnia magna 2701 mg/L, 72 hr EC50 Pseudokirchnerella subcapitata >1000 mg/L

Aliphatic Alcohol #1: 96 hr. LC50 Oryzias latipes >100 mg/L; 48 hr. EC50 daphnia magna >1000 mg/L; 72 hr. EC50 Pseudokirchnerella subcapitata >1000 mg/L

96 hr LC50 Pimephales promelas 1430 mg/L; 48 hr EC50 daphnia pulex 1100 mg/L; 72 hr EC50 Pseudokirchnerella subcapitata 1799 mg/L

Carbon Dioxide: 96 hr LC50 Oncorhynchus mykiss 35 mg/L

Persistence and Degradability: Aliphatic alcohol #1 and aliphatic alcohol #2 are readily biodegradable. . Light petroleum distillates is not readily biodegradable. Severely hydrotreated petroleum distillates is inherently biodegradable based on structurally similar chemicals.

Bioaccumulative Potential: Aliphatic alcohol #1 has a calculated BCF of 0.5. Diisobutyl Ketone has a calculated BCF of 7. Aliphatic alcohol #2 has a calculated BCF of 3.

Mobility in Soil: Aliphatic alcohol #1, aliphatic alcohol #2 and diisobutyl ketone have a high to very high mobility in soil.

Other Adverse Effects: None known

SECTION 13: DISPOSAL INFORMATION

Disposal instructions: Dispose of product in accordance with all local, state/provincial and federal regulations.

Contaminated packaging: Offer empty packaging material to local recycling facilities.

SECTION 14: TRANSPORT INFORMATION

	UN Number	Proper shipping name	Hazard Class	Packing Group	Environmental Hazard
DOT Ground		Consumer Commodity ORM-D or Limited Quantity			
DOT / 49 CFR	UN1950	Aerosols, Flammable, Limited Quantity	2.1	None	None
IMDG	UN1950	Aerosols, Limited Quantity	2.1	None	None
IATA	UN1950	Aerosols, Flammable, Limited Quantity	2.1	None	None

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not applicable – product is transported only in packaged form.

Special precautions: None known.

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

CERCLA 103 Reportable Quantity: This product is not subject to CERCLA reporting requirements, however, oil spills are reportable to the National Response Center under the Clean Water Act and many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

SARA TITLE III:

Hazard Category for Section 311/312: Acute Health, Fire Hazard, Sudden Release of Pressure

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements: None

Section 302 Extremely Hazardous Substances (TPQ): None

EPA Toxic Substances Control Act (TSCA) Status: All of the components of this product are listed on the TSCA inventory.

SECTION 16: OTHER INFORMATION

HMIS Ratings: Health - 2 Flammability - 4 Physical Hazard - 0
NFPA Ratings: Health - 1 Flammability - 2 Instability - 0

SDS Revision History: Section 3 Composition, Section 8 Exposure Limits, Section 11 Acute Toxicity, Section 12 Ecotoxicity

Date of preparation: October 5th, 2016

Date of last revision: April 15th, 2016

The information contained herein has been developed based upon current available scientific data. New information may be developed from time to time which may render the conclusions of this report obsolete. Therefore, no warranty is extended as to the applicability of this information to the user's intended purpose or the consequences of its use or misuse.

SAFETY DATA SHEET

Klean Strip Green Denatured Alcohol

Page: 1

Printed: 04/22/2015

Revision: 04/22/2015

Supersedes Revision: 07/11/2014

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name:	Klean Strip Green Denatured Alcohol	
Company Name:	W. M. Barr 2105 Channel Avenue Memphis, TN 38113	Phone Number: (901)775-0100
Web site address:	www.wmbarr.com	
Emergency Contact:	3E 24 Hour Emergency Contact	(800)451-8346
Information:	W.M. Barr Customer Service	(800)398-3892
Intended Use:	Cleans glass and is used as a fuel for marine stoves	
Synonyms:	QKGA75003	
Additional Information	This product is regulated by the United States Consumer Product Safety Commission and is subject to certain labeling requirements under the Federal Hazardous Substances Act. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS). The product label also includes other important information, including directions for use, and should always be read in its entirety prior to using the product.	

2. HAZARDS IDENTIFICATION

Flammable Liquids, Category 2**Acute Toxicity: Inhalation, Category 4****Serious Eye Damage/Eye Irritation, Category 2A****Specific Target Organ Toxicity (single exposure), Category 1****GHS Signal Word:** Danger

GHS Hazard Phrases: H225: Highly flammable liquid and vapor.
H319: Causes serious eye irritation.
H332: Harmful if inhaled.
H370: Causes damage to organs.

GHS Precaution Phrases: P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233: Keep container tightly closed.
P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ventilating/lighting equipment.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P260: Do not breathe gas/mist/vapors/spray.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

GHS Response Phrases: P303+361+353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P307+311: IF exposed: Call a POISON CENTER or doctor/physician.
P312: Call a POISON CENTER or doctor/physician if you feel unwell.
P337+313: If eye irritation persists, get medical advice/attention.

SAFETY DATA SHEET

Klean Strip Green Denatured Alcohol

Page: 2

Printed: 04/22/2015

Revision: 04/22/2015

Supersedes Revision: 07/11/2014

GHS Storage and Disposal Phrases:

P370+378: In case of fire, use dry chemical powder to extinguish.

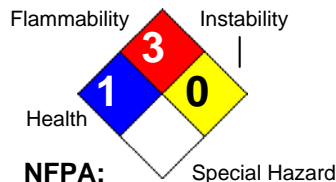
P403+235: Store in cool/well-ventilated place.

P405: Store locked up.

P501: Dispose of contents/container according to local, state and federal regulations.

Hazard Rating System:

HEALTH	*	1
FLAMMABILITY		3
PHYSICAL		0
PPE		



HMIS:

OSHA Regulatory Status:

This material is classified as hazardous under OSHA regulations.

Potential Health Effects (Acute and Chronic):

Inhalation Acute Exposure Effects:

Vapor harmful. May cause dizziness, headache, watering of eyes, irritation of respiratory tract, irritation to the eyes, drowsiness, nausea, other central nervous system effects, spotted vision, dilation of pupils, and convulsions.

Skin Contact Acute Exposure Effects:

May cause irritation, drying of skin, redness, and dermatitis. May cause symptoms listed under inhalation. May be absorbed through damaged skin.

Eye Contact Acute Exposure Effects:

May cause irritation.

Ingestion Acute Exposure Effects:

Poison. Cannot be made non-poisonous. May be fatal or cause blindness. May produce fluid in the lungs and pulmonary edema. May cause dizziness, headache, nausea, drowsiness, loss of coordination, stupor, reddening of face and or neck, liver, kidney and heart damage, coma, and death. May produce symptoms listed under inhalation. Prolonged ingestion may cause liver damage, "fetal-alcohol syndrome" in pregnant females and neuronal degeneration.

Chronic Exposure Effects:

May cause symptoms listed under inhalation, dizziness, fatigue, tremors, permanent central nervous system changes, blindness, pancreatic damage, and death.

Medical Conditions Generally Aggravated By Exposure: Diseases of the liver.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #	Hazardous Components (Chemical Name)	Concentration	RTECS #
64-17-5	Ethyl alcohol {Ethanol}	80.0 -90.0 %	KQ6300000
67-56-1	Methanol {Methyl alcohol; Carbinol; Wood alcohol}	< 5.0 %	PC1400000
141-78-6	Acetic acid, ethyl ester {Ethyl acetate}	1.5 %	AH5425000

Additional Chemical Information

Specific percentage of composition is being withheld as a trade secret.

SAFETY DATA SHEET

Klean Strip Green Denatured Alcohol

Page: 3

Printed: 04/22/2015

Revision: 04/22/2015

Supersedes Revision: 07/11/2014

4. FIRST AID MEASURES

Emergency and First Aid Procedures:

Inhalation:

If user experiences breathing difficulty, move to air free of vapors. Administer oxygen or artificial respiration until medical assistance can be rendered.

Skin Contact:

Wash with soap and water while removing contaminated clothing. If symptoms persist seek medical advice.

Eye Contact:

Flush with large quantities of water for at least 15 minutes. Get medical attention.

Ingestion:

Call your poison control center, hospital emergency room or physician immediately for instructions to induce vomiting.

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

Signs and Symptoms Of Exposure:

Unconsciousness. Narcosis. Cyanosis (blue tissue condition, nails, lips, and/or skin).

Decrease in

motor functions. Behavioral changes. Edema. Liver enlargement. Jaundice. Proteinuria.

Birth

defects. Sterility.

Note to Physician:

Poison. This product contains methanol. Methanol is metabolized to formaldehyde and formic acid. These metabolites may cause metabolic acidosis, visual disturbances and blindness. Since metabolism is required for these toxic symptoms, their onset may be delayed from 6 to 30 hours following ingestion. Ethanol competes for the same metabolic pathway and has been used as an antidote. Methanol is effectively removed by hemodialysis. Call your local poison control center for further instructions.

5. FIRE FIGHTING MEASURES

Flash Pt:

OSHA Class IB

55.00 F Method Used: Unknown

Explosive Limits:

LEL: 3.3 %

UEL: 19%

Autoignition Pt:

685.00 F

Suitable Extinguishing Media: Use carbon dioxide, dry powder, alcohol-resistant foam, or water spray.

Unsuitable Extinguishing Media:

Do not use water jet as an extinguisher

Fire Fighting Instructions:

Self-contained respiratory protection should be provided for fire fighters fighting fires in buildings or confined area. Storage containers exposed to fire should be kept cool with water spray to prevent pressure build-up. Stay away from heads of containers that have been exposed to intense heat or flame.

Flammable Properties and Hazards:

Flashback of vapors possible over considerable distance.

SAFETY DATA SHEET

Klean Strip Green Denatured Alcohol

Page: 4
Printed: 04/22/2015
Revision: 04/22/2015
Supersedes Revision: 07/11/2014

6. ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled:

Clean-up:

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind, out of low areas, and ventilate closed spaces before entering. Shut off ignition sources, keep flares, smoking or flames out of hazard area.

Small spills:

Take up liquid with sand, earth or other noncombustible absorbent material and place in a plastic container where applicable.

Large spills:

Dike far ahead of spill for later disposal.

Do not flush into surface water or sanitary sewer system.

7. HANDLING AND STORAGE

Precautions To Be Taken in Handling: Read carefully all cautions and directions on product label before use. Since empty container retains residue, follow all label warnings even after container is empty. Dispose of empty container according to all regulations. Do not reuse this container.

Precautions To Be Taken in Storing: Keep container tightly closed when not in use. Store in a cool, dry place. Do not store near flames or at elevated temperatures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
64-17-5	Ethyl alcohol {Ethanol}	PEL: 1000 ppm	TLV: 1000 ppm	No data.
67-56-1	Methanol {Methyl alcohol; Carbinol; Wood alcohol}	PEL: 200 ppm	TLV: 200 ppm STEL: 250 ppm	No data.
141-78-6	Acetic acid, ethyl ester {Ethyl acetate}	PEL: 400 ppm	TLV: 400 ppm	No data.
Respiratory Equipment (Specify Type):	For OSHA controlled work place and other regular users. Use only with adequate ventilation under engineered air control systems designed to prevent exceeding appropriate TLV. For occasional use, where engineered air control is not feasible, use properly maintained and properly fitted NIOSH approved respirator for organic solvent vapors. A dust mask does not provide protection against vapors.			
Eye Protection:	Safety glasses, chemical goggles or face shields are recommended to safeguard against potential eye contact, irritation, or injury. Contact lenses should not be worn while working with chemicals.			
Protective Gloves:	Wear impermeable gloves. Gloves contaminated with product should be discarded. Promptly remove clothing that becomes soiled with product.			
Other Protective Clothing:	Various application methods can dictate the use of additional protective safety equipment, such as impermeable aprons, etc., to minimize exposure.			
Engineering Controls (Ventilation etc.):	Use only with adequate ventilation to prevent build-up of vapors. Open all windows and doors. Use only with a cross ventilation of moving fresh air across the work area. If strong odor is noticed or you experience slight dizziness, headache, nausea, or eye-watering -- Stop -- ventilation is inadequate. Leave area immediately.			
Work/Hygienic/Maintenance Practices:	A source of clean water should be available in the work area for flushing eyes and skin. Do not eat, drink, or smoke in the work area. Wash hands thoroughly after use. Before reuse, thoroughly clean any clothing or protective equipment that has been			

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contaminated by prior use. Discard any clothing or other protective equipment that cannot be decontaminated, such as gloves or shoes.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical States: [] Gas [X] Liquid [] Solid
Appearance and Odor: Clear, water white, thin liquid
Melting Point: No data.
Boiling Point: 174.20 F
Autoignition Pt: 685.00 F
Flash Pt: 55.00 F Method Used: Unknown
Explosive Limits: LEL: 3.3 % UEL: 19%
Specific Gravity (Water = 1): 0.789 - 0.83 at 60.0 F
Bulk density: 6.75 LB/GA
Vapor Pressure (vs. Air or mm Hg): ~ 44 MM HG at 20.0 C
Vapor Density (vs. Air = 1): ~ 1.6
Evaporation Rate: ~ 2 (BuAC=1)
Solubility in Water: miscible
Solubility Notes: Completely soluble in water.
Percent Volatile: 100.0 % by weight.
VOC / Volume: 789.0000 G/L

10. STABILITY AND REACTIVITY

Stability: Unstable [] Stable [X]
Conditions To Avoid - Instability: Heat, flames and sparks. Avoid temperatures exceeding the flash point.
Incompatibility - Materials To Avoid: Incompatible with strong oxidizing agents.
Hazardous Decomposition Or Byproducts: Decomposition may produce carbon monoxide, carbon dioxide, and possibly other unidentified organic compounds.
Possibility of Hazardous Reactions: Will occur [] Will not occur [X]
Conditions To Avoid - Hazardous Reactions: No data available.

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11. TOXICOLOGICAL INFORMATION

Toxicological Information: This product has not been tested as a whole. Refer to section 2 for acute and chronic health effects.

CAS# 141-78-6:

Standard Draize Test, Eyes, Human, 400.0 PPM.

Result:

Liver: Hepatitis (hepatocellular necrosis), zonal.

- Journal of Industrial Hygiene and Toxicology, Vol/p/yr: 25,282, 1943

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
64-17-5	Ethyl alcohol {Ethanol}	n.a.	1	A4	n.a.
67-56-1	Methanol {Methyl alcohol; Carbinol; Wood alcohol}	n.a.	n.a.	n.a.	n.a.
141-78-6	Acetic acid, ethyl ester {Ethyl acetate}	n.a.	n.a.	n.a.	n.a.

12. ECOLOGICAL INFORMATION

General Ecological Information: This product has not been tested as a whole.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Dispose in accordance with applicable local, state, and federal regulations.

Waste Disposal Method: D001

14. TRANSPORT INFORMATION

LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Ethyl alcohol

DOT Hazard Class: 3 FLAMMABLE LIQUID

UN/NA Number: UN1170

Packing Group: II



MARINE TRANSPORT (IMDG/IMO):

IMDG/IMO Shipping Name: Same as land.

AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name: Same as land.

Additional Transport Information: The supplier may apply one of the following exceptions: Combustible Liquid, Consumer Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

15. REGULATORY INFORMATION

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
64-17-5	Ethyl alcohol {Ethanol}	No	No	No
67-56-1	Methanol {Methyl alcohol; Carbinol; Wood alcohol}	No	Yes 5000 LB	Yes
141-78-6	Acetic acid, ethyl ester {Ethyl acetate}	No	Yes 5000 LB	No

This material meets the EPA [X] Yes [] No Acute (immediate) Health Hazard

'Hazard Categories' defined [X] Yes [] No Chronic (delayed) Health Hazard

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for SARA Title III Sections [X] Yes [] No Fire Hazard
311/312 as indicated: [] Yes [X] No Sudden Release of Pressure Hazard
[] Yes [X] No Reactive Hazard

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
64-17-5	Ethyl alcohol {Ethanol}	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
67-56-1	Methanol {Methyl alcohol; Carbinol; Wood alcohol}	CAA HAP,ODC: HAP; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: Yes
141-78-6	Acetic acid, ethyl ester {Ethyl acetate}	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory, 4 Test; CA PROP.65: No

Regulatory Information Statement: All components of this material are listed on the TSCA Inventory or are exempt.

16. OTHER INFORMATION

Revision Date: 04/22/2015

Preparer Name: W.M. Barr EHS Department (901)775-0100

Additional Information About This Product: No data available.

Company Policy or Disclaimer: The information contained herein is presented in good faith and believed to be accurate as of the effective date shown above. This information is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. Any use of this data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations.

SAFETY DATA SHEET

KST063621

Section 1. Identification

Product name : KOOL SEAL® Elastomeric Roof Coating
Federal Standard 17925

Product code : KST063621

Other means of identification : Not available.

CAS # : Not applicable.

Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against
Not applicable.

Manufacturer : KST COATINGS
101 Prospect Avenue N.W.
Cleveland, OH 44115

Emergency telephone number of the company : (216) 566-2917

Product Information Telephone Number : (888) 321-5665

Regulatory Information Telephone Number : (216) 566-2902

Transportation Emergency Telephone Number : (800) 424-9300

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 1A
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 4.2%

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : May cause an allergic skin reaction.
May cause cancer.

Precautionary statements

General : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Avoid breathing vapor. Contaminated work clothing must not be allowed out of the workplace.

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Section 2. Hazards identification

- Response** : IF exposed or concerned: Get medical attention. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention.
- Storage** : Store locked up.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Adequate ventilation required when sanding or abrading the dried film. If Adequate ventilation cannot be provided wear an approved particulate respirator (NIOSH approved). Follow respirator manufacturer's directions for respirator use. DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Abrading or sanding of the dry film may release Crystalline Silica which has been shown to cause lung damage and cancer under long term exposure. Please refer to the SDS for additional information. Keep out of reach of children. Do not transfer contents to other containers for storage.
- Hazards not otherwise classified** : None known.

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Not available.
- CAS number/other identifiers**

Ingredient name	% by weight	CAS number
Titanium Dioxide	4.2	13463-67-7
1,3,5-Triazine-triethanol	0.16	4719-04-4
Crystalline Silica, respirable powder	0.13	14808-60-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : May cause an allergic skin reaction.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
Inhalation : No specific data.
Skin contact : Adverse symptoms may include the following:
irritation
redness
Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments : No specific treatment.
Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media : None known.

- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

Section 5. Fire-fighting measures

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits (OSHA United States)

Ingredient name	Exposure limits
Titanium Dioxide	ACGIH TLV (United States, 3/2016). TWA: 10 mg/m ³ 8 hours.
1,3,5-Triazine-triethanol	OSHA PEL (United States, 6/2016). TWA: 15 mg/m ³ 8 hours. Form: Total dust
Crystalline Silica, respirable powder	None. OSHA PEL Z3 (United States, 6/2016). TWA: 250 mppcf / (%SiO ₂ +5) 8 hours. Form: Respirable TWA: 10 mg/m ³ / (%SiO ₂ +2) 8 hours. Form: Respirable OSHA PEL (United States, 6/2016). TWA: 50 µg/m ³ 8 hours. Form: Respirable dust ACGIH TLV (United States, 3/2016). TWA: 0.025 mg/m ³ 8 hours. Form: Respirable fraction NIOSH REL (United States, 10/2013). TWA: 0.05 mg/m ³ 10 hours. Form: respirable dust

Occupational exposure limits (Canada)

Ingredient name	Exposure limits
None.	

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

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Section 8. Exposure controls/personal protection

Skin protection

Hand protection

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state

: Liquid.

Color

: Not available.

Odor

: Not available.

Odor threshold

: Not available.

pH

: 8.5

Melting point

: Not available.

Boiling point

: 100°C (212°F)

Flash point

: Closed cup: >93.3°C (>199.9°F)

Evaporation rate

: 0.09 (butyl acetate = 1)

Flammability (solid, gas)

: Not available.

Lower and upper explosive (flammable) limits

: Not available.

Vapor pressure

: 0.31 kPa (2.333 mm Hg) [at 20°C]

Vapor density

: 1 [Air = 1]

Relative density

: 1.33

Solubility

: Not available.

Partition coefficient: n-octanol/water

: Not available.

Auto-ignition temperature

: Not available.

Decomposition temperature

: Not available.

Viscosity

: Kinematic (40°C (104°F)): >0.205 cm²/s (>20.5 cSt)

Molecular weight

: Not applicable.

Aerosol product

Heat of combustion

: 0.882 kJ/g

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
1,3,5-Triazine-triethanol	LD50 Oral	Rat	763 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Titanium Dioxide	Skin - Mild irritant	Human	-	72 hours 300 Micrograms Intermittent	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Titanium Dioxide	-	2B	-
Crystalline Silica, respirable powder	-	1	Known to be a human carcinogen.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
Crystalline Silica, respirable powder	Category 1	Inhalation	Not determined

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : May cause an allergic skin reaction.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : Adverse symptoms may include the following:
irritation
redness
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Titanium Dioxide	Acute LC50 >1000000 µg/l Marine water	Fish - Fundulus heteroclitus	96 hours
1,3,5-Triazine-triethanol	Acute EC50 26.1 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 39 ppm Fresh water	Fish - Lepomis macrochirus	96 hours

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.
Additional information	-	-	-	-	-

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Section 14. Transport information

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Proper shipping name : Not available.
Ship type : Not available.
Pollution category : Not available.

Section 15. Regulatory information

SARA 313

SARA 313 (40 CFR 372.45) supplier notification can be found on the Environmental Data Sheet.

California Prop. 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	1
Flammability		0
Physical hazards		0

The customer is responsible for determining the PPE code for this material.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

Procedure used to derive the classification

Classification

SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 1A

Justification

Calculation method
Calculation method

History

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Section 16. Other information

Key to abbreviations

: ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973
as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Notice to reader

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Products shall not be repackaged, modified, or tinted except as specifically instructed by Sherwin-Williams, including but not limited to the incorporation of non Sherwin-Williams products or the use or addition of products in proportions not specified by Sherwin-Williams. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.

EZ BREAK® Copper Twist Stik

LA-CO Industries, Inc.

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)
Date of issue: 09/02/2015
Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Trade name : EZ BREAK® Copper Twist Stik

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Lubricant

1.3. Details of the supplier of the safety data sheet

LA-CO Industries, Inc.
1201 Pratt Boulevard
Elk Grove Village, IL. 60007-5746
Phone: (847) 956-7600
Fax: (847) 956-9885
E-mail: customer_service@laco.com



1.4. Emergency telephone number

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification in accordance with the Globally Harmonized Standard

Aquatic Acute 1 H400
Aquatic Chronic 1 H410

Full text of classification categories and H statements : see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS09

Signal word (GHS-US) : Warning
Hazard statements (GHS-US) : H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects
Precautionary statements (GHS-US) : P273 - Avoid release to the environment
P391 - Collect spillage
P501 - Dispose of contents/container to an authorised waste collection point

2.3. Other hazards

2.4. Unknown acute toxicity (GHS US)

1.03 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Oral)
1.03 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)
1.09 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	% (w/w)	GHS-US classification
Copper, dusts and mists (as Cu)	(CAS No) 7440-50-8	10.4 - 11.7	Aquatic Acute 1, H400 Aquatic Chronic 1, H410
aluminium powder (pyrophoric)	(CAS No) 7429-90-5	1.2 - 1.6	Pyr. Sol. 1, H250 Water-react. 2, H261

EZ BREAK® Copper Twist Stik

Safety Data Sheet

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according to Canadian Hazardous Products Regulations (HPR)

Name	Product identifier	% (w/w)	GHS-US classification
Silicon dioxide (cristobalite)	(CAS No) 14808-60-7	0 - 1.03	Carc. 1A, H350

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If medical advice is needed, have product container or label at hand.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention if you feel unwell.
First-aid measures after skin contact	: Wash skin with plenty of water.
First-aid measures after eye contact	: In case of contact, immediately flush eyes with plenty of water.
First-aid measures after ingestion	: Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after skin contact	: May cause slight irritation.
Symptoms/injuries after eye contact	: May cause slight irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Carbon dioxide. Dry chemical. Foam. Water fog.
Unsuitable extinguishing media	: None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: No particular fire or explosion hazard.
Reactivity	: No dangerous reactions known.

5.3. Advice for firefighters

Firefighting instructions	: Keep upwind.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Use self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Avoid contact with skin and eyes. Avoid creating or spreading dust.
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6.1.1. For non-emergency personnel

Protective equipment	: Wear suitable gloves.
Emergency procedures	: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment	: Wear suitable gloves.
Emergency procedures	: Ventilate area. Stop leak if safe to do so.

6.2. Environmental precautions

Avoid release to the environment. Do not discharge into drains or the environment.

6.3. Methods and material for containment and cleaning up

For containment	: Contain and collect as any solid.
Methods for cleaning up	: Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting.

6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

EZ BREAK® Copper Twist Stik

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Hygiene measures : Always wash your hands immediately after handling this product, and once again before leaving the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Incompatible products : Oxidizer.
Heat and ignition sources : Keep away from heat, sparks and flame.
Prohibitions on mixed storage : Incompatible materials.
Storage area : Store in dry, cool, well-ventilated area.

7.3. Specific end use(s)

Lubricant.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

EZ BREAK® Copper Twist Stik		
ACGIH	Not applicable	
OSHA	Not applicable	
aluminium powder (pyrophoric) (7429-90-5)		
ACGIH	ACGIH TWA (mg/m³)	1 mg/m³
ACGIH	Remark (ACGIH)	Pneumoconiosis; LRT irr
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable dust)
Canada (Quebec)	VEMP (mg/m³)	10 mg/m³
Canada (Quebec)	Notations and remarks	(Métal)
Copper, dusts and mists (as Cu) (7440-50-8)		
ACGIH	ACGIH TWA (mg/m³)	1 mg/m³ dusts and mists, as Cu 0.2 mg/m3 fume, as Cu
OSHA	Not applicable	
Silicon dioxide (cristobalite) (14808-60-7)		
ACGIH	ACGIH TWA (mg/m³)	0.025 mg/m³
ACGIH	Remark (ACGIH)	(respirable dust)
OSHA	OSHA PEL (TWA) (ppm)	250 mppcf
OSHA	Remark (OSHA)	(3) See Table Z-3.
Canada (Quebec)	VEMP (mg/m³)	0.1 mg/m³
Canada (Quebec)	Notations and remarks	(la poussière respirable), (C2)

8.2. Exposure controls

Appropriate engineering controls : Avoid dispersal of dust in the air (ie, clearing dust surfaces with compressed air). Ensure good ventilation of the work station. Eyewash stations.

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear suitable gloves.

Eye protection : In case of dust production: protective goggles.

Respiratory protection : In case of inadequate ventilation wear respiratory protection. Use air-purifying respirator equipped with particulate filtering cartridges.

Other information : Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : A solid crayon-like marker.

Colour : copper. Gray.

Odour : mild.

Odour threshold : No data available

EZ BREAK® Copper Twist Stik

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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)

pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: 60 - 70 °C
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 204 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: > 1
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

VOC content	: 0 %
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SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat.

10.5. Incompatible materials

Oxidizer.

10.6. Hazardous decomposition products

None known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
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aluminium powder (pyrophoric) (7429-90-5)	
LD50 oral rat	> 15900 mg/kg bodyweight
Copper, dusts and mists (as Cu) (7440-50-8)	
LD50 oral rat	> 2500 mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 5.11 mg/l/4h

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified.

Silicon dioxide (cristobalite) (14808-60-7)	
IARC group	1 - Carcinogenic to humans, Inhalation of dust

Reproductive toxicity	: Not classified
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EZ BREAK® Copper Twist Stik

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according to Canadian Hazardous Products Regulations (HPR)

Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	
Symptoms/injuries after skin contact	: May cause slight irritation.
Symptoms/injuries after eye contact	: May cause slight irritation.
Likely routes of exposure	: Inhalation;Skin and eye contact

SECTION 12: Ecological information

12.1 Toxicity

Ecology - water : Very toxic to aquatic life with long lasting effects.

Copper, dusts and mists (as Cu) (7440-50-8)	
LC50 fish 1	0.2 mg/l
EC50 Daphnia 1	0.041 mg/l
NOEC chronic fish	0.01 mg/l

12.2 Persistence and degradability

EZ BREAK® Copper Twist Stik	
Persistence and degradability	May cause long-term adverse effects in the environment.
Copper, dusts and mists (as Cu) (7440-50-8)	
Persistence and degradability	Not readily biodegradable.

12.3 Bioaccumulative potential

Copper, dusts and mists (as Cu) (7440-50-8)	
BCF fish 1	0.009
Bioaccumulative potential	Not expected to bioaccumulate.

12.4 Mobility in soil

No additional information available

12.5 Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal recommendations	: Do not dispose of waste into sewer.
Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

In accordance with DOT and TDG

Transport document description	: UN3077 Environmentally hazardous substances, solid, n.o.s. (copper), 9, III
UN-No.(DOT)	: UN3077
Proper Shipping Name (DOT)	: Environmentally hazardous substances, solid, n.o.s. (copper)
Transport hazard class(es) (DOT)	: 9 - Class 9 (Miscellaneous dangerous materials)
Packing group (DOT)	: III - Minor Danger

ADR

Transport document description	: UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (copper), 9, III, (E)
Proper Shipping Name (ADR)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (copper)
Packing group (ADR)	: III
Class (ADR)	: 9 - Miscellaneous dangerous substances and articles

Transport by sea

UN-No. (IMDG)	: UN 3077
Proper Shipping Name (IMDG)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (copper)
Class (IMDG)	: 9 - Miscellaneous dangerous substances and articles
Packing group (IMDG)	: III

EZ BREAK® Copper Twist Stik

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according to Canadian Hazardous Products Regulations (HPR)

Air transport

UN-No. (IATA)	: UN 3077
Proper Shipping Name (IATA)	: Environmentally hazardous substance, solid, n.o.s. (copper)
Class (IATA)	: 9 - Miscellaneous Dangerous Goods
Packing group (IATA)	: III

SECTION 15: Regulatory information

15.1. US Federal regulations

aluminium powder (pyrophoric) (7429-90-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Copper, dusts and mists (as Cu) (7440-50-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
RQ (Reportable quantity, section 304 of EPA's List of Lists)	5000 lb (for metal particles under 100 micrometers in diameter)
Silicon dioxide (cristobalite) (14808-60-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2. International regulations

CANADA

aluminium powder (pyrophoric) (7429-90-5)	
Listed on the Canadian DSL (Domestic Substances List) inventory.	
Copper, dusts and mists (as Cu) (7440-50-8)	
Listed on the Canadian DSL (Domestic Substances List) inventory.	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Silicon dioxide (cristobalite) (14808-60-7)	
Listed on the Canadian DSL (Domestic Substances List) inventory.	

EU-Regulations

aluminium powder (pyrophoric) (7429-90-5)	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
Copper, dusts and mists (as Cu) (7440-50-8)	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
Silicon dioxide (cristobalite) (14808-60-7)	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	

National regulations

EZ BREAK® Copper Twist Stik	
All components are listed on the EEC inventory European Inventory of Existing Commercial Chemical Substances (EINECS).	
All ingredients are listed in the Toxic Substances Control Act (TSCA).	
All ingredients are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL).	

15.3. US State regulations

aluminium powder (pyrophoric) (7429-90-5)	
U.S. - New Jersey - Right to Know Hazardous Substance List	
Copper, dusts and mists (as Cu) (7440-50-8)	
U.S. - New York - Right to Know List of Hazardous Chemicals U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Florida Hazardous Substance List U.S. - Illinois - Right-to-Know Toxic Substances List U.S. - Pennsylvania - List of Hazardous Substances U.S. - Alaska - Designated Toxic and Hazardous Substances. U.S. - Missouri - Employer Information/Toxic Substances List U.S. - Texas - Hazardous Substance List U.S. - West Virginia - Hazardous Substance List U.S. - Wisconsin - Toxic and Hazardous Substances	
Silicon dioxide (cristobalite) (14808-60-7)	
U.S. - New Jersey - Right to Know Hazardous Substance List	

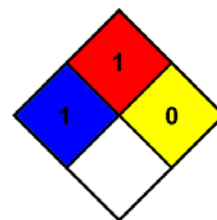
EZ BREAK® Copper Twist Stik

Safety Data Sheet

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according to Canadian Hazardous Products Regulations (HPR)

SECTION 16: Other information

Indication of changes	: Original Document.
Data sources	: ACGIH (American Conference of Government Industrial Hygienists). European Chemicals Agency (ECHA) C&L Inventory database. Accessed at http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database . Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition. National Fire Protection Association. Fire Protection Guide to Hazardous Materials; 10th edition. OSHA 29CFR 1910.1200 Hazard Communication Standard. TSCA Chemical Substance Inventory. Accessed at http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html .
Abbreviations and acronyms	: ATE: Acute Toxicity Estimate. CAS (Chemical Abstracts Service) number. CLP: Classification, Labelling, Packaging. EC50: Environmental Concentration associated with a response by 50% of the test population. GHS: Globally Harmonized System (of Classification and Labeling of Chemicals). LD50: Lethal Dose for 50% of the test population. OSHA: Occupational Safety & Health Administration. PBT: Persistent, Bioaccumulative, Toxic. TWA: Time Weight Average. TSCA: Toxic Substances Control Act.
Other information	: None.
NFPA health hazard	: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard	: 1 - Must be preheated before ignition can occur.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



Full text of H-statements:

Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Carc. 1A	Carcinogenicity, Category 1A
Pyr. Sol. 1	Pyrophoric Solids, Category 1
Water-react. 2	Substances and Mixtures which, in contact with water, emit flammable gases, Category 2
H250	Catches fire spontaneously if exposed to air
H261	In contact with water releases flammable gases
H350	May cause cancer
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

SDS Prepared by: The Redstone Group, LLC
6077 Frantz Rd.
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Dublin, OH USA 43016
T 614-923-7472
www.redstonegrp.com

LACO NA GHS SDS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

NICKEL GRADE EZ BREAK®

LA-CO Industries, Inc.

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)
Date of issue: 07/17/2015
Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Trade name : NICKEL GRADE EZ BREAK®

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Lubricant

1.3. Details of the supplier of the safety data sheet

LA-CO Industries, Inc.
1201 Pratt Boulevard
Elk Grove Village, IL. 60007-5746
Phone: (847) 956-7600
Fax: (847) 956-9885
E-mail: customer_service@laco.com



1.4. Emergency telephone number

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification in accordance with the Globally Harmonized Standard

Skin Sens. 1 H317
Carc. 2 H351
STOT RE 1 H372

Full text of classification categories and H statements : see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H317 - May cause an allergic skin reaction
H351 - Suspected of causing cancer
H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary statements (GHS-US) :

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust, fume
P264 - Wash hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P272 - Contaminated work clothing must not be allowed out of the workplace
P280 - Wear eye protection, protective gloves
P302+P352 - If on skin: Wash with plenty of water
P308+P313 - If exposed or concerned: Get medical advice/attention
P314 - Get medical advice/attention if you feel unwell
P321 - Specific treatment (see First aid measures on this label)
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
P363 - Wash contaminated clothing before reuse
P405 - Store locked up
P501 - Dispose of contents/container to an authorised waste collection point

NICKEL GRADE EZ BREAK®

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)

2.3. Other hazards

2.4. Unknown acute toxicity (GHS US)

0.58 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)

0.58 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	% (w/w)	GHS-US classification
nickel	(CAS No) 7440-02-0	19.43 - 19.47	Skin Sens. 1, H317 Carc. 2, H351 STOT RE 1, H372
aluminium powder (pyrophoric)	(CAS No) 7429-90-5	1.21 - 1.616	Pyr. Sol. 1, H250 Water-react. 2, H261
Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts	(CAS No) 68649-42-3	0 - 0.58	Eye Irrit. 2A, H319 Aquatic Acute 1, H400 Aquatic Chronic 3, H412

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.
First-aid measures after skin contact	: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
First-aid measures after eye contact	: In case of contact, immediately flush eyes with plenty of water.
First-aid measures after ingestion	: Induce vomiting. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries	: Causes damage to organs through prolonged or repeated exposure.
Symptoms/injuries after inhalation	: Inhalation of vapours may cause respiratory irritation.
Symptoms/injuries after skin contact	: May cause an allergic skin reaction. May cause slight irritation.
Symptoms/injuries after ingestion	: Diarrhea. Nausea.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Water fog. Dry chemical. Carbon dioxide. Foam.
Unsuitable extinguishing media	: None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Burning produces irritating, toxic and noxious fumes.
Explosion hazard	: Product is not explosive.
Reactivity	: No dangerous reactions known.

5.3. Advice for firefighters

Firefighting instructions	: Keep upwind.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Use self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Avoid contact with skin and eyes.
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NICKEL GRADE EZ BREAK®

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)

6.1.1. For non-emergency personnel

Protective equipment : Chemical goggles or safety glasses. Wear suitable gloves.
Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Chemical goggles or safety glasses. Wear suitable gloves.
Emergency procedures : Ventilate area. Stop leak if safe to do so.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Do not allow minor leaks or spills to accumulate on walking surfaces. Sweep or shovel into suitable containers.
Methods for cleaning up : Following recovery, flush area with water. Clean surface thoroughly to remove residual contamination.

6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust, fume. Avoid contact with skin and eyes.
Hygiene measures : Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash your hands immediately after handling this product, and once again before leaving the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container closed when not in use.
Incompatible products : Oxidizer. Strong acids.
Incompatible materials : Heat sources.
Prohibitions on mixed storage : Incompatible materials.
Storage area : Store in dry, cool, well-ventilated area.

7.3. Specific end use(s)

Lubricant.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

NICKEL GRADE EZ BREAK®		
ACGIH	Not applicable	
OSHA	Not applicable	
nickel (7440-02-0)		
ACGIH	ACGIH TWA (mg/m³)	0.2 mg/m³ (inhalable) 0.1 mg/m³ (soluble) 1.5 mg/m³ (inhalable fraction)
OSHA	Not applicable	
Canada (Quebec)	VEMP (mg/m³)	1 mg/m³
Canada (Quebec)	Notations and remarks	(Métal)
aluminium powder (pyrophoric) (7429-90-5)		
ACGIH	ACGIH TWA (mg/m³)	1 mg/m³
ACGIH	Remark (ACGIH)	Pneumoconiosis; LRT irr
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable dust)
Canada (Quebec)	VEMP (mg/m³)	10 mg/m³
Canada (Quebec)	Notations and remarks	(Métal)
Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts (68649-42-3)		
ACGIH	Not applicable	

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Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts (68649-42-3)

OSHA	Not applicable
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8.2. Exposure controls

Appropriate engineering controls	: Ensure good ventilation of the work station. Eyewash stations.
Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Use rubber gloves.
Eye protection	: Chemical goggles or safety glasses.
Respiratory protection	: None under normal use.
Other information	: Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Paste.
Colour	: Silver. Gray.
Odour	: Oily.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 193 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: 1.27
Solubility	: insoluble in water.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

VOC content	: 0 %
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SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat.

10.5. Incompatible materials

Oxidizer. Strong acids.

10.6. Hazardous decomposition products

Burning produces irritating, toxic and noxious fumes.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

NICKEL GRADE EZ BREAK®	
LD50 oral rat	> 5 ml/kg
nickel (7440-02-0)	
LD50 oral rat	> 9000 mg/kg OECD Guideline 401
LC50 inhalation rat (mg/l)	> 10.2 mg/l/4h No effects observed
aluminium powder (pyrophoric) (7429-90-5)	
LD50 oral rat	> 15900 mg/kg bodyweight
Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts (68649-42-3)	
LD50 oral rat	26100 mg/kg
ATE CLP (oral)	26100.000 mg/kg bodyweight

Skin corrosion/irritation : Not classified
(Slightly irritant but not relevant for classification)

Serious eye damage/irritation : Not classified
(Not irritating to rabbits on ocular application)

Respiratory or skin sensitisation : May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified

Carcinogenicity : Suspected of causing cancer.

nickel (7440-02-0)	
NOAEL (chronic, oral, animal/male, 2 years)	0.4 mg/kg bodyweight OECD 451 (Carcinogenicity Studies). Adrenal gland pheochromocytomas (benign and malignant) were significantly increased in exposed male.
NOAEL (chronic, oral, animal/female, 2 years)	0.4 mg/kg bodyweight OECD 451 (Carcinogenicity Studies). The incidence of combined (adenoma and carcinoma) cortical tumors among 0.4 mg Ni/m3 females, although statistically higher compared to the concurrent controls, falls within the historical control range; therefore, in the present study, this tumor is of uncertain relationship to nickel metal exposure.
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	3 - Reasonably anticipated to be Human Carcinogen

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Causes damage to organs through prolonged or repeated exposure.

nickel (7440-02-0)	
LOAEL (inhalation, rat,dust/mist/fume, 90 days)	0.1 mg/l/6h/day OECD Guideline 451
NOAEL (oral, rat, 90 days)	< 4 mg/kg bodyweight/day OECD Guideline 412. increased incidence of granulomatous inflammation and mucoid exudate.
NOAEL (inhalation, rat, dust/mist/fume, 90 days)	> 10.2 mg/l/6h/day

Aspiration hazard : Not classified

Potential adverse human health effects and symptoms

Symptoms/injuries after inhalation : Inhalation of vapours may cause respiratory irritation.

Symptoms/injuries after skin contact : May cause an allergic skin reaction. May cause slight irritation.

Symptoms/injuries after ingestion : Diarrhea. Nausea.

Likely routes of exposure : Ingestion;Skin and eye contact

SECTION 12: Ecological information

12.1 Toxicity

nickel (7440-02-0)	
LC50 fish 1	15.3 mg/l Oncorhynchus mykiss (as nickel chloride)
LOEC (chronic)	0.12 mg/l as Nickel(II) chloride hexahydrate
NOEC (chronic)	0.057 mg/l as Nickel(II) chloride hexahydrate
Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts (68649-42-3)	
LC50 fish 1	10 (10 - 35) mg/l Pimephales promelas OECD GDL 203 (water accommodated fraction)

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Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts (68649-42-3)

EC50 Daphnia 1	1 (1 - 1.5) mg/l OECD GDL 202 (water accommodated fraction)
NOEC (acute)	10 mg/l Pimephales promelas OECD GDL 203 (water accommodated fraction)
NOEC chronic crustacea	< 1 mg/l

12.2. Persistence and degradability

nickel (7440-02-0)

Persistence and degradability	Not established.
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12.3. Bioaccumulative potential

nickel (7440-02-0)

Bioconcentration factor (BCF REACH)	> 600
Bioaccumulative potential	Expected to bioaccumulate. Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal recommendations	: Do not dispose of waste into sewer.
Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	: Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT and TDG

Not considered a dangerous good for transport regulations

Proper Shipping Name (ADR) : Not applicable

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

nickel (7440-02-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313

aluminium powder (pyrophoric) (7429-90-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts (68649-42-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

nickel (7440-02-0)

Listed on the Canadian DSL (Domestic Substances List) inventory.

aluminium powder (pyrophoric) (7429-90-5)

Listed on the Canadian DSL (Domestic Substances List) inventory.

Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts (68649-42-3)

Listed on the Canadian DSL (Domestic Substances List) inventory.

EU-Regulations

nickel (7440-02-0)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

aluminium powder (pyrophoric) (7429-90-5)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

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Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts (68649-42-3)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)- Directive 79/831/EEC, sixth Amendment of Directive 67/548/EEC (dangerous substances)

National regulations

NICKEL GRADE EZ BREAK®

All components are listed on the EEC inventory European Inventory of Existing Commercial Chemical Substances (EINECS).
All ingredients are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL).
All ingredients are listed in the Toxic Substances Control Act (TSCA).

15.3. US State regulations

nickel (7440-02-0)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
Yes	No	No	No	

nickel (7440-02-0)

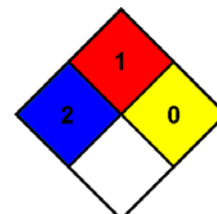
U.S. - Minnesota - Hazardous Substance List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - New York - Right to Know List of Hazardous Chemicals
U.S. - Pennsylvania - List of Hazardous Substances

aluminium powder (pyrophoric) (7429-90-5)

U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Indication of changes	: Original Document.
Data sources	: ACGIH (American Conference of Government Industrial Hygienists). European Chemicals Agency (ECHA) C&L Inventory database. Accessed at http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database . Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition. National Fire Protection Association. Fire Protection Guide to Hazardous Materials; 10th edition. OSHA 29CFR 1910.1200 Hazard Communication Standard. TSCA Chemical Substance Inventory. Accessed at http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html .
Abbreviations and acronyms	: ATE: Acute Toxicity Estimate. CAS (Chemical Abstracts Service) number. CLP: Classification, Labelling, Packaging. EC50: Environmental Concentration associated with a response by 50% of the test population. GHS: Globally Harmonized System (of Classification and Labeling of Chemicals). LD50: Lethal Dose for 50% of the test population. OSHA: Occupational Safety & Health Administration. PBT: Persistent, Bioaccumulative, Toxic. TWA: Time Weight Average. TSCA: Toxic Substances Control Act.
Other information	: None.
NFPA health hazard	: 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
NFPA fire hazard	: 1 - Must be preheated before ignition can occur.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



Full text of H-statements:

Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Carc. 2	Carcinogenicity, Category 2

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Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Pyr. Sol. 1	Pyrophoric Solids, Category 1
Skin Sens. 1	Sensitisation — Skin, category 1
STOT RE 1	Specific target organ toxicity — Repeated exposure, Category 1
Water-react. 2	Substances and Mixtures which, in contact with water, emit flammable gases, Category 2
H250	Catches fire spontaneously if exposed to air
H261	In contact with water releases flammable gases
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H351	Suspected of causing cancer
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H412	Harmful to aquatic life with long lasting effects

SDS Prepared by: The Redstone Group, LLC
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LACO NA GHS SDS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

1. Identification

Product identifier	Liquid Wrench White Lithium Grease		
Other means of identification			
SDS number	L616		
Part No.	L616, L616/4		
Tariff code	2710.19.4000		
Recommended use	Grease		
Recommended restrictions	None known.		
Manufacturer/Importer/Supplier/Distributor information			
Manufacturer			
Company name	RSC Chemical Solutions		
Address	600 Radiator Road Indian Trail, NC 28079 United States		
Telephone	Customer Service:	(704) 821-7643	
	Technical:	(704) 684-1811	
Website	www.rscbrands.com		
E-mail	sds@rscbrands.com		
Emergency phone number	Emergency Telephone:	(303) 623-5716	
	Emergency Contact:	RMPDC (877-740-5015)	

2. Hazard(s) identification

Physical hazards	Flammable aerosols	Category 2
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2
	Germ cell mutagenicity	Category 1B
	Carcinogenicity	Category 1B
	Reproductive toxicity (fertility, the unborn child)	Category 2
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 2
OSHA defined hazards	Not classified.	
Label elements		



Signal word Danger

Hazard statement Flammable aerosol. Contains gas under pressure; may explode if heated. Causes skin irritation. Causes serious eye irritation. May cause drowsiness or dizziness. May cause genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child. Suspected of damaging the unborn child. Suspected of damaging fertility. Causes damage to organs through prolonged or repeated exposure. Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Precautionary statement**Prevention**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Do not breathe gas. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response

If on skin: Wash with plenty of water. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. Collect spillage.

Storage

Store in a well-ventilated place. Keep container tightly closed. Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)

Combustible.

Supplemental information

30.59% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 30.59% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients**Mixtures**

Chemical name	Common name and synonyms	CAS number	%
2-(2-butoxyéthoxy) Éthanol		112-34-5	20 - < 30
Low Odor Base Solvent		64742-47-8	20 - < 30
Distillates (petroleum), Hydrotreated Heavy Naphthenic		64742-52-5	5 - < 10
Naphtha (petroleum), Hydrotreated Heavy		64742-48-9	5 - < 10
Solvent Naphtha (petroleum), Medium Aliph.		64742-88-7	5 - < 10
Stoddard Solvent		8052-41-3	5 - < 10
Carbon Dioxide		124-38-9	1 - < 3
BENZENE, METHYL-		108-88-3	< 1
BENZENE,1-METHYLETHYL-		98-82-8	< 1
ETHYLBENZENE		100-41-4	< 1
HEXANE		110-54-3	< 1
NAPHTHALENE		91-20-3	< 1
Nonane		111-84-2	< 1
Zinc Oxide		1314-13-2	< 0.3
Other components below reportable levels			5 - < 10

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures**Inhalation**

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact

Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact

Rinse with water. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

May cause drowsiness and dizziness. Headache. Nausea, vomiting. Diarrhea. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information	IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.
5. Fire-fighting measures	
Suitable extinguishing media	Powder. Alcohol resistant foam. Dry chemicals. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may explode when exposed to heat or flame. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk. Cool containers exposed to heat with water spray and remove container, if no risk is involved. Containers should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. In the event of fire and/or explosion do not breathe fumes.
General fire hazards	Flammable aerosol. Combustible.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe gas. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Refer to attached safety data sheets and/or instructions for use. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Isolate area until gas has dispersed. The product is immiscible with water and will spread on the water surface. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways. Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Use water spray to reduce vapors or divert vapor cloud drift. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. All equipment used when handling the product must be grounded. Do not re-use empty containers. Do not breathe gas. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Avoid prolonged exposure. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Level 2 Aerosol. Store locked up. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Keep out of the reach of children. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
BENZENE, 1-METHYLETHY L- (CAS 98-82-8)	PEL	245 mg/m3	
Carbon Dioxide (CAS 124-38-9)	PEL	50 ppm 9000 mg/m3	
Distillates (petroleum), Hydrotreated Heavy Naphthenic (CAS 64742-52-5)	PEL	5000 ppm 5 mg/m3	Mist.
ETHYLBENZENE (CAS 100-41-4)	PEL	2000 mg/m3 500 ppm 435 mg/m3	
HEXANE (CAS 110-54-3)	PEL	100 ppm 1800 mg/m3	
Naphtha (petroleum), Hydrotreated Heavy (CAS 64742-48-9)	PEL	500 ppm 400 mg/m3	
NAPHTHALENE (CAS 91-20-3)	PEL	100 ppm 50 mg/m3	
Stoddard Solvent (CAS 8052-41-3)	PEL	10 ppm 2900 mg/m3	
Zinc Oxide (CAS 1314-13-2)	PEL	500 ppm 5 mg/m3	Respirable fraction.
		5 mg/m3 15 mg/m3	Fume. Total dust.

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
BENZENE, METHYL- (CAS 108-88-3)	Ceiling	300 ppm
	TWA	200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
2-(2-butoxyéthoxy) Éthanol (CAS 112-34-5)	TWA	10 ppm	Inhalable fraction and vapor.
BENZENE, METHYL- (CAS 108-88-3)	TWA	20 ppm	
BENZENE, 1-METHYLETHY L- (CAS 98-82-8)	TWA	50 ppm	
Carbon Dioxide (CAS 124-38-9)	STEL	30000 ppm	
Distillates (petroleum), Hydrotreated Heavy Naphthenic (CAS 64742-52-5)	TWA	5000 ppm	
ETHYLBENZENE (CAS 100-41-4)	TWA	5 mg/m3	Inhalable fraction.
HEXANE (CAS 110-54-3)	TWA	20 ppm	
NAPHTHALENE (CAS 91-20-3)	TWA	50 ppm	
Nonane (CAS 111-84-2)	TWA	10 ppm	
	TWA	200 ppm	

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Solvent Naphtha (petroleum), Medium Aliph. (CAS 64742-88-7)	TWA	200 mg/m3	Non-aerosol.
Stoddard Solvent (CAS 8052-41-3)	TWA	100 ppm	
Zinc Oxide (CAS 1314-13-2)	STEL	10 mg/m3	Respirable fraction.
	TWA	2 mg/m3	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
BENZENE, METHYL- (CAS 108-88-3)	STEL	560 mg/m3	
		150 ppm	
	TWA	375 mg/m3	
		100 ppm	
BENZENE,1-METHYLETHYL- (CAS 98-82-8)	TWA	245 mg/m3	
		50 ppm	
Carbon Dioxide (CAS 124-38-9)	STEL	54000 mg/m3	
		30000 ppm	
	TWA	9000 mg/m3	
		5000 ppm	
Distillates (petroleum), Hydrotreated Heavy Naphthenic (CAS 64742-52-5)	Ceiling	1800 mg/m3	
	STEL	10 mg/m3	Mist.
ETHYLBENZENE (CAS 100-41-4)	STEL	545 mg/m3	
		125 ppm	
	TWA	435 mg/m3	
		100 ppm	
HEXANE (CAS 110-54-3)	TWA	180 mg/m3	
		50 ppm	
Low Odor Base Solvent (CAS 64742-47-8)	TWA	100 mg/m3	
Naphtha (petroleum), Hydrotreated Heavy (CAS 64742-48-9)	TWA	400 mg/m3	
		100 ppm	
NAPHTHALENE (CAS 91-20-3)	STEL	75 mg/m3	
		15 ppm	
	TWA	50 mg/m3	
		10 ppm	
Nonane (CAS 111-84-2)	TWA	1050 mg/m3	
		200 ppm	
Solvent Naphtha (petroleum), Medium Aliph. (CAS 64742-88-7)	TWA	100 mg/m3	
Stoddard Solvent (CAS 8052-41-3)	Ceiling	1800 mg/m3	
	TWA	350 mg/m3	
Zinc Oxide (CAS 1314-13-2)	Ceiling	15 mg/m3	Dust.
	STEL	10 mg/m3	Fume.
	TWA	5 mg/m3	Fume.
		5 mg/m3	Dust.

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
BENZENE, METHYL- (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*
ETHYLBENZENE (CAS 100-41-4)	0.15 g/g	Sum of mandelic acid and phenylglyoxylic acid	Creatinine in urine	*
HEXANE (CAS 110-54-3)	0.4 mg/l	2,5-Hexanedione, without hydrolysis	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

BENZENE, METHYL- (CAS 108-88-3)	Can be absorbed through the skin.
BENZENE,1-METHYLETHYL- (CAS 98-82-8)	Can be absorbed through the skin.
HEXANE (CAS 110-54-3)	Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

BENZENE, METHYL- (CAS 108-88-3)	Skin designation applies.
BENZENE,1-METHYLETHYL- (CAS 98-82-8)	Skin designation applies.

US - Tennessee OELs: Skin designation

BENZENE,1-METHYLETHYL- (CAS 98-82-8)	Can be absorbed through the skin.
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US ACGIH Threshold Limit Values: Skin designation

HEXANE (CAS 110-54-3)	Can be absorbed through the skin.
NAPHTHALENE (CAS 91-20-3)	Can be absorbed through the skin.
Solvent Naphtha (petroleum), Medium Aliph. (CAS 64742-88-7)	Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

BENZENE,1-METHYLETHYL- (CAS 98-82-8)	Can be absorbed through the skin.
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US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

BENZENE,1-METHYLETHYL- (CAS 98-82-8)	Can be absorbed through the skin.
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Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection Chemical respirator with organic vapor cartridge and full facepiece if threshold limits are exceeded.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	Hazy
Physical state	Gas.
Form	Aerosol.
Color	Not available.
Odor	Not available.

Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	-94 °F (-70 °C) estimated
Initial boiling point and boiling range	314.6 °F (157 °C) estimated
Flash point	104.0 °F (40.0 °C) estimated
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	0.7 % estimated
Flammability limit - upper (%)	6 % estimated
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	0.34 hPa estimated
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	229 °F (109.44 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	7.33 lbs/gal estimated
Explosive properties	Not explosive.
Flame extension	None
Flammability (flash back)	No
Flammability class	Combustible II estimated
Heat of combustion (NFPA 30B)	29.47 kJ/g estimated
Oxidizing properties	Not oxidizing.
Percent volatile	25.62 % estimated
Specific gravity	0.88 estimated
VOC (Weight %)	< 24 % w/w

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause damage to organs through prolonged or repeated exposure by inhalation. May cause drowsiness and dizziness. Headache. Nausea, vomiting.
Skin contact	Causes skin irritation.

Eye contact	Causes serious eye irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Headache. May cause drowsiness and dizziness. Nausea, vomiting. Diarrhea. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Narcotic effects.

Components	Species	Test Results
2-(2-butoxyéthoxy) Éthanol (CAS 112-34-5)		
Acute		
Dermal		
LD50	Rabbit	2700 mg/kg
Inhalation		
<i>Liquid</i>		
LC50	Rat	> 29 ppm
Oral		
LD50	Guinea pig	2000 mg/kg
	Mouse	2400 mg/kg
	Rabbit	2200 mg/kg
	Rat	4500 mg/kg
BENZENE, METHYL- (CAS 108-88-3)		
Acute		
Dermal		
LD50	Rabbit	12124 mg/kg 14.1 ml/kg
Inhalation		
LC50	Mouse	5320 ppm, 8 Hours 400 ppm, 24 Hours
	Rat	26700 ppm, 1 Hours 12200 ppm, 2 Hours 8000 ppm, 4 Hours
Oral		
LD50	Rat	2.6 g/kg
BENZENE,1-METHYLETHYL- (CAS 98-82-8)		
Acute		
Inhalation		
LC50	Mouse	2000 ppm, 7 Hours 24.7 mg/l, 2 Hours
	Rat	8000 ppm, 4 Hours
Oral		
LD50	Rat	1400 mg/kg
ETHYLBENZENE (CAS 100-41-4)		
Acute		
Dermal		
LD50	Rabbit	17800 mg/kg
Oral		
LD50	Rat	3500 mg/kg

Components	Species	Test Results
HEXANE (CAS 110-54-3)		
<u>Acute</u>		
Inhalation		
LC50	Mouse	48000 ppm, 4 Hours
Oral		
LD50	Rat	24 mg/kg
	Wistar rat	49 mg/kg
Naphtha (petroleum), Hydrotreated Heavy (CAS 64742-48-9)		
<u>Acute</u>		
Inhalation		
LC50	Rat	61 mg/l, 4 Hours
Oral		
LD50	Rat	> 25 ml/kg
NAPHTHALENE (CAS 91-20-3)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	> 2 g/kg
	Rat	> 20 g/kg
Oral		
LD50	Guinea pig	1200 mg/kg
	Rat	490 mg/kg
Nonane (CAS 111-84-2)		
<u>Acute</u>		
Inhalation		
LC50	Rat	3200 ppm, 4 Hours
Zinc Oxide (CAS 1314-13-2)		
<u>Acute</u>		
Inhalation		
LC50	Mouse	> 5.7 mg/l, 4 Hours
Oral		
LD50	Mouse	7950 mg/kg
	Rat	> 5 g/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	May cause genetic defects.
Carcinogenicity	May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

BENZENE, METHYL- (CAS 108-88-3)	3 Not classifiable as to carcinogenicity to humans.
BENZENE,1-METHYLETHYL- (CAS 98-82-8)	2B Possibly carcinogenic to humans.
ETHYLBENZENE (CAS 100-41-4)	2B Possibly carcinogenic to humans.
NAPHTHALENE (CAS 91-20-3)	2B Possibly carcinogenic to humans.
Stoddard Solvent (CAS 8052-41-3)	3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

NAPHTHALENE (CAS 91-20-3)	Reasonably Anticipated to be a Human Carcinogen.
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Reproductive toxicity	Suspected of damaging fertility or the unborn child.
Specific target organ toxicity - single exposure	May cause drowsiness and dizziness.
Specific target organ toxicity - repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	Not likely, due to the form of the product.
Chronic effects	Causes damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Components		Species	Test Results
2-(2-butoxyéthoxy) Éthanol (CAS 112-34-5)			
Aquatic			
Fish	LC50	Bluegill (Lepomis macrochirus)	1300 mg/l, 96 hours
BENZENE, METHYL- (CAS 108-88-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	5.46 - 9.83 mg/l, 48 hours
Fish	LC50	Coho salmon,silver salmon (Oncorhynchus kisutch)	8.11 mg/l, 96 hours
BENZENE,1-METHYLETHYL- (CAS 98-82-8)			
Aquatic			
Crustacea	EC50	Brine shrimp (Artemia sp.)	3.55 - 11.29 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	2.7 mg/l, 96 hours
ETHYLBENZENE (CAS 100-41-4)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1.37 - 4.4 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	7.5 - 11 mg/l, 96 hours
HEXANE (CAS 110-54-3)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	2.101 - 2.981 mg/l, 96 hours
Low Odor Base Solvent (CAS 64742-47-8)			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	2.9 mg/l, 96 hours
Naphtha (petroleum), Hydrotreated Heavy (CAS 64742-48-9)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia pulex)	2.7 - 5.1 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	8.8 mg/l, 96 hours
			8.8 mg/l, 96 hours
NAPHTHALENE (CAS 91-20-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1.09 - 3.4 mg/l, 48 hours
Fish	LC50	Pink salmon (Oncorhynchus gorbuscha)	1.11 - 1.68 mg/l, 96 hours
Zinc Oxide (CAS 1314-13-2)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	2246 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

2-(2-butoxyéthoxy) Éthanol	0.56
BENZENE, METHYL-	2.73
BENZENE,1-METHYLETHYL-	3.66
ETHYLBENZENE	3.15
HEXANE	3.9
NAPHTHALENE	3.3
Nonane	5.46
Stoddard Solvent	3.16 - 7.15

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

14. Transport information

DOT

UN number	Not available.
UN proper shipping name	Consumer Commodity
Transport hazard class(es)	
Class	ORM-D
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Packaging exceptions	306
Packaging non bulk	302, 304
Packaging bulk	302, 314, 315

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Forbidden.
Cargo aircraft only	Forbidden.

IMDG

UN number	UN1950
UN proper shipping name	Aerosols

Transport hazard class(es)**Class** 2.1**Subsidiary risk** -**Packing group** Not applicable.**Environmental hazards****Marine pollutant** Yes**EmS** F-D, S-U**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.**Transport in bulk according to** Not applicable.**Annex II of MARPOL 73/78 and
the IBC Code****IATA; IMDG****Marine pollutant****General information**

IMDG Regulated Marine Pollutant. DOT Regulated Marine Pollutant.

15. Regulatory information**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Nonane (CAS 111-84-2)

1.0 % One-Time Export Notification only.

CERCLA Hazardous Substance List (40 CFR 302.4)

2-(2-butoxyéthoxy) Éthanol (CAS 112-34-5)

Listed.

BENZENE, METHYL- (CAS 108-88-3)

Listed.

BENZENE,1-METHYLETHYL- (CAS 98-82-8)

Listed.

ETHYLBENZENE (CAS 100-41-4)

Listed.

HEXANE (CAS 110-54-3)

Listed.

NAPHTHALENE (CAS 91-20-3)

Listed.

Nonane (CAS 111-84-2)

Listed.

Zinc Oxide (CAS 1314-13-2)

Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**Hazard categories**

Immediate Hazard - Yes

Delayed Hazard - Yes

Fire Hazard - Yes

Pressure Hazard - No

Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No**SARA 313 (TRI reporting)**

Chemical name	CAS number	% by wt.
2-(2-butoxyéthoxy) Éthanol	112-34-5	20 - < 30
BENZENE, METHYL-	108-88-3	< 1
BENZENE,1-METHYLETHYL-	98-82-8	< 1
ETHYLBENZENE	100-41-4	< 1
HEXANE	110-54-3	< 1
NAPHTHALENE	91-20-3	< 1

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

2-(2-butoxyéthoxy) Éthanol (CAS 112-34-5)
 BENZENE, METHYL- (CAS 108-88-3)
 BENZENE,1-METHYLETHYL- (CAS 98-82-8)
 ETHYLBENZENE (CAS 100-41-4)
 HEXANE (CAS 110-54-3)
 NAPHTHALENE (CAS 91-20-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.**Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number**

BENZENE, METHYL- (CAS 108-88-3) 6594

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

BENZENE, METHYL- (CAS 108-88-3) 35 %WV

DEA Exempt Chemical Mixtures Code Number

BENZENE, METHYL- (CAS 108-88-3) 594

US state regulations**US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)**

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

2-(2-butoxyéthoxy) Éthanol (CAS 112-34-5)
 BENZENE, METHYL- (CAS 108-88-3)
 BENZENE,1-METHYLETHYL- (CAS 98-82-8)
 Distillates (petroleum), Hydrotreated Heavy Naphthenic (CAS 64742-52-5)
 ETHYLBENZENE (CAS 100-41-4)
 HEXANE (CAS 110-54-3)
 Low Odor Base Solvent (CAS 64742-47-8)
 Naphtha (petroleum), Hydrotreated Heavy (CAS 64742-48-9)
 NAPHTHALENE (CAS 91-20-3)
 Solvent Naphtha (petroleum), Medium Aliph. (CAS 64742-88-7)
 Stoddard Solvent (CAS 8052-41-3)

US. Massachusetts RTK - Substance List

BENZENE, METHYL- (CAS 108-88-3)
 BENZENE,1-METHYLETHYL- (CAS 98-82-8)
 Carbon Dioxide (CAS 124-38-9)
 Distillates (petroleum), Hydrotreated Heavy Naphthenic (CAS 64742-52-5)
 ETHYLBENZENE (CAS 100-41-4)
 HEXANE (CAS 110-54-3)
 Low Odor Base Solvent (CAS 64742-47-8)
 Naphtha (petroleum), Hydrotreated Heavy (CAS 64742-48-9)
 NAPHTHALENE (CAS 91-20-3)
 Nonane (CAS 111-84-2)
 Solvent Naphtha (petroleum), Medium Aliph. (CAS 64742-88-7)
 Stoddard Solvent (CAS 8052-41-3)

Zinc Oxide (CAS 1314-13-2)

US. New Jersey Worker and Community Right-to-Know Act

2-(2-butoxyéthoxy) Éthanol (CAS 112-34-5)
BENZENE, METHYL- (CAS 108-88-3)
BENZENE,1-METHYLETHYL- (CAS 98-82-8)
Carbon Dioxide (CAS 124-38-9)
ETHYLBENZENE (CAS 100-41-4)
HEXANE (CAS 110-54-3)
Low Odor Base Solvent (CAS 64742-47-8)
Naphtha (petroleum), Hydrotreated Heavy (CAS 64742-48-9)
NAPHTHALENE (CAS 91-20-3)
Nonane (CAS 111-84-2)
Solvent Naphtha (petroleum), Medium Aliph. (CAS 64742-88-7)
Stoddard Solvent (CAS 8052-41-3)
Zinc Oxide (CAS 1314-13-2)

US. Pennsylvania Worker and Community Right-to-Know Law

2-(2-butoxyéthoxy) Éthanol (CAS 112-34-5)
BENZENE, METHYL- (CAS 108-88-3)
BENZENE,1-METHYLETHYL- (CAS 98-82-8)
Carbon Dioxide (CAS 124-38-9)
ETHYLBENZENE (CAS 100-41-4)
HEXANE (CAS 110-54-3)
Low Odor Base Solvent (CAS 64742-47-8)
Naphtha (petroleum), Hydrotreated Heavy (CAS 64742-48-9)
NAPHTHALENE (CAS 91-20-3)
Nonane (CAS 111-84-2)
Solvent Naphtha (petroleum), Medium Aliph. (CAS 64742-88-7)
Stoddard Solvent (CAS 8052-41-3)
Zinc Oxide (CAS 1314-13-2)

US. Rhode Island RTK

2-(2-butoxyéthoxy) Éthanol (CAS 112-34-5)
BENZENE, METHYL- (CAS 108-88-3)
BENZENE,1-METHYLETHYL- (CAS 98-82-8)
ETHYLBENZENE (CAS 100-41-4)
HEXANE (CAS 110-54-3)
NAPHTHALENE (CAS 91-20-3)
Zinc Oxide (CAS 1314-13-2)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

BENZENE (CAS 71-43-2)	Listed: February 27, 1987
BENZENE,1-METHYLETHYL- (CAS 98-82-8)	Listed: April 6, 2010
ETHYLBENZENE (CAS 100-41-4)	Listed: June 11, 2004
NAPHTHALENE (CAS 91-20-3)	Listed: April 19, 2002
Titanium Dioxide (CAS 13463-67-7)	Listed: September 2, 2011

US - California Proposition 65 - CRT: Listed date/Developmental toxin

BENZENE (CAS 71-43-2)	Listed: December 26, 1997
BENZENE, METHYL- (CAS 108-88-3)	Listed: January 1, 1991

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

BENZENE, METHYL- (CAS 108-88-3)	Listed: August 7, 2009
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US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

BENZENE (CAS 71-43-2)	Listed: December 26, 1997
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International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	04-29-2015
Revision date	04-20-2016
Version #	04
HMIS® ratings	Health: 2* Flammability: 3 Physical hazard: 0

NFPA ratings	Health: 2 Flammability: 3 Instability: 0
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NFPA ratings



Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
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Revision Information	Transport Information: Material Transportation Information
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Revision Number: 004.2

Issue date: 11/02/2016

1. PRODUCT AND COMPANY IDENTIFICATION

Product name:	LOCTITE LB 8151 AE known as LOCTITE® SILVER GRADE ANTI-SEI	IDH number:	135541
Product type:	Lubricant	Item number:	76759
Restriction of Use:	None identified	Region:	United States
Company address:	Contact information:		
Henkel Corporation	Telephone: (860) 571-5100		
One Henkel Way	MEDICAL EMERGENCY Phone: Poison Control Center		
Rocky Hill, Connecticut 06067	1-877-671-4608 (toll free) or 1-303-592-1711		
	TRANSPORT EMERGENCY Phone: CHEMTREC		
	1-800-424-9300 (toll free) or 1-703-527-3887		
	Internet: www.henkelna.com		

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER: CONTENTS UNDER PRESSURE.
EXTREMELY FLAMMABLE AEROSOL.
MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS.
CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.
MAY CAUSE DROWSINESS OR DIZZINESS.

HAZARD CLASS	HAZARD CATEGORY
FLAMMABLE AEROSOL	1
SKIN CORROSION	1C
SERIOUS EYE DAMAGE	1
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE	3
ASPIRATION HAZARD	1

PICTOGRAM(S)



Precautionary Statements

Prevention:	Keep away from heat, sparks, open flames, hot surfaces - no smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Do not breathe dust or fumes. Avoid breathing mist or spray. Wash affected area thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves, clothing, eye and face protection.
Response:	IF SWALLOWED: Immediately call a physician or poison control center. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Wash contaminated clothing before reuse.
Storage:	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
Disposal:	Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Acetone	67-64-1	10 - 20
n-Heptane	142-82-5	10 - 20
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	10 - 20
Graphite	7782-42-5	5 - 10
Propane	74-98-6	5 - 10
Butane	106-97-8	5 - 10
Calcium oxide	1305-78-8	5 - 10
Petroleum distillates, hydrotreated, light naphthenic	64742-53-6	5 - 10
Aluminum not powder, dust or fume	7429-90-5	1 - 5
Methylcyclohexane	108-87-2	1 - 5
Distillates (petroleum), straight-run middle	64741-44-2	1 - 5
Quartz (SiO ₂)	14808-60-7	0.1 - 1

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation:	Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Skin contact:	Remove contaminated clothing and footwear. Wash with soap and water. If symptoms develop and persist, get medical attention. Wash clothing before reuse.
Eye contact:	Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Ingestion:	Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.
Symptoms:	See Section 11.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Foam, dry chemical or carbon dioxide.
Special firefighting procedures:	Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear. In case of fire, keep containers cool with water spray.
Unusual fire or explosion hazards:	Contents under pressure. Do not handle or store near an open flame, heat or other sources of ignition. Do not puncture or incinerate pressurized containers. Exposure to temperatures above 49°C (120°F) may cause container to burst.

Hazardous combustion products:

Oxides of carbon. Toxic and irritating vapors.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:

Do not allow product to enter sewer or waterways.

Clean-up methods:

Remove all sources of ignition. Ensure adequate ventilation. Keep unnecessary personnel away. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Scrape up spilled material and place in a closed container for disposal. Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up.

7. HANDLING AND STORAGE

Handling:

Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Vapors will accumulate readily and may ignite explosively. Refer to Section 8.

Storage:

Keep in a cool, well ventilated area away from heat, sparks and open flame. Keep container tightly closed until ready for use. Do not puncture, incinerate, or expose to temperatures above 48.9 °C (120 °F).

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Acetone	250 ppm TWA 500 ppm STEL	1,000 ppm (2,400 mg/m3) PEL	None	None
n-Heptane	400 ppm TWA 500 ppm STEL	500 ppm (2,000 mg/m3) PEL	None	None
Distillates (petroleum), hydrotreated heavy naphthenic	5 mg/m3 TWA Inhalable fraction. 5 mg/m3 TWA mist 10 mg/m3 STEL mist	5 mg/m3 TWA mist 500 ppm (2,000 mg/m3) PEL 5 mg/m3 PEL Mist.	None	None
Graphite	2 mg/m3 TWA Respirable fraction.	5 mg/m3 PEL Respirable fraction. 15 mg/m3 PEL Total dust. 15 MPPCF TWA	None	None
Propane	Included in the regulation but with no data values. See regulation for further details	1,000 ppm (1,800 mg/m3) PEL	None	None
Butane	1,000 ppm STEL	None	None	None
Calcium oxide	2 mg/m3 TWA	5 mg/m3 PEL	None	None
Petroleum distillates, hydrotreated, light naphthenic	5 mg/m3 TWA Inhalable fraction.	5 mg/m3 PEL Mist. 500 ppm (2,000 mg/m3) PEL	None	None
Aluminum not powder, dust or fume	None	5 mg/m3 PEL (as Al) Respirable fraction.	None	None
Methylcyclohexane	400 ppm TWA	500 ppm (2,000 mg/m3) PEL	None	None
Distillates (petroleum), straight-run middle	5 mg/m3 TWA mist 10 mg/m3 STEL mist	5 mg/m3 TWA mist	None	None
Quartz (SiO ₂)	0.025 mg/m3 TWA Respirable fraction.	2.4 MPPCF TWA Respirable. 0.1 mg/m3 TWA Respirable. 0.05 mg/m3 PEL	None	None

Engineering controls:

Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

Respiratory protection:

Use NIOSH approved respirator if there is potential to exceed exposure limit(s).

Eye/face protection:

Safety goggles or safety glasses with side shields. Full face protection should be used if the potential for splashing or spraying of product exists. Safety showers and eye wash stations should be available.

Skin protection:

Use impermeable gloves and protective clothing as necessary to prevent skin contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:

Aerosol, liquid

Color:

Silver

Odor:

Mild, Petroleum

Odor threshold:

Not available.

pH:

Not available.

Vapor pressure:

Not available.

Boiling point/range:

0 - 212 °F (-17.8 - 100°C)

Melting point/ range:

Not available.

Specific gravity:	0.77
Vapor density:	Not available.
Flash point:	< -18 °C (< 0.4 °F) ; (value for propellant).
Flame projection:	122.00 cm (48.03 inch)
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not available.
Flammability:	Extremely flammable aerosol.
Evaporation rate:	Not available.
Solubility in water:	Not available.
Partition coefficient (n-octanol/water):	Not available.
VOC content:	42 %; 323 g/l
Viscosity:	Not available.
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions of storage and use.
Hazardous reactions:	Will not occur.
Hazardous decomposition products:	Irritating organic vapours. Oxides of carbon.
Incompatible materials:	Oxidizing agents.
Reactivity:	Not available.
Conditions to avoid:	Keep away from heat, spark and flame. Do not puncture, incinerate, or expose to temperatures above 48.9 °C (120 °F).

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure:	Skin, Inhalation, Eyes, Ingestion
-------------------------------------	-----------------------------------

Potential Health Effects/Symptoms

Inhalation:

May cause respiratory tract irritation. Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Central nervous system depression, including dizziness, drowsiness, fatigue, nausea, headache, unconsciousness. Extreme overexposure may result in unconsciousness and possibly death. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. May irritate the nose and respiratory system. Abrasion of cured material such as by sanding or grinding could release respirable particles of silica quartz, a cancer hazard by inhalation. Normal use of this product causes no such release.

Skin contact:

This product is severely irritating to the skin and may cause burns.

Eye contact:

Causes serious eye damage. Direct spray or vapors will irritate and may harm eyes.

Ingestion:

This product may be fatal if it is swallowed.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Acetone	Oral LD50 (Mouse) = 5.2 g/kg Oral LD50 (Mouse) = 3,000 mg/kg Oral LD50 (Rabbit) = 5,340 mg/kg Oral LD50 (Rat) = 5,800 mg/kg Oral LD50 (Rat) = 9,800 mg/kg Dermal LD50 (Rabbit) = 20,000 mg/kg Inhalation LC50 (Rat, 4 h) = 76 mg/l	Central nervous system, Irritant
n-Heptane	Inhalation LC50 (Rat, 4 h) = 103 mg/l	Central nervous system, Irritant
Distillates (petroleum), hydrotreated heavy naphthenic	None	Irritant
Graphite	None	Lung
Propane	None	Cardiac, Central nervous system, Irritant
Butane	Inhalation LC50 (Rat, 4 h) = 658 mg/l	Cardiac, Central nervous system, Irritant
Calcium oxide	None	Irritant, Corrosive, Eyes
Petroleum distillates, hydrotreated, light naphthenic	None	Irritant
Aluminum not powder, dust or fume	None	Central nervous system, Irritant, Lung
Methylcyclohexane	None	Central nervous system, Irritant, Kidney, Liver
Distillates (petroleum), straight-run middle	None	Irritant
Quartz (SiO ₂)	None	Immune system, Lung, Some evidence of carcinogenicity

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Acetone	No	No	No
n-Heptane	No	No	No
Distillates (petroleum), hydrotreated heavy naphthenic	No	No	No
Graphite	No	No	No
Propane	No	No	No
Butane	No	No	No
Calcium oxide	No	No	No
Petroleum distillates, hydrotreated, light naphthenic	No	No	No
Aluminum not powder, dust or fume	No	No	No
Methylcyclohexane	No	No	No
Distillates (petroleum), straight-run middle	No	No	No
Quartz (SiO ₂)	Known To Be Human Carcinogen.	Group 1	No

12. ECOLOGICAL INFORMATION

Ecological information:

Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

Hazardous waste number: D001: Ignitable.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Aerosols
Hazard class or division: 2.1
Identification number: UN 1950
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name: Aerosols, flammable
Hazard class or division: 2.1
Identification number: UN 1950
Packing group: None

Water Transportation (IMO/IMDG)

Proper shipping name: AEROSOLS (Cyclohexane, Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics)
Hazard class or division: 2.1
Identification number: UN 1950
Packing group: None
Marine pollutant: Cyclohexane, Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

TSCA 12 (b) Export Notification: None above reporting de minimis

CERCLA/SARA Section 302 EHS: None above reporting de minimis.

CERCLA/SARA Section 311/312: Not available.

CERCLA/SARA Section 313: None above reporting de minimis.

CERCLA Reportable quantity: Acetone (CAS# 67-64-1) 5,000 lbs. (2,270 kg)
n-Heptane (CAS# 142-82-5) 100 lbs. (45.4 kg)
Propane (CAS# 74-98-6) 100 lbs. (45.4 kg)
Butane (CAS# 106-97-8) 100 lbs. (45.4 kg)
Methylcyclohexane (CAS# 108-87-2) 100 lbs. (45.4 kg)
Octane (CAS# 111-65-9) 100 lbs. (45.4 kg)

California Proposition 65: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. This product contains a chemical known in the State of California to cause cancer.

Canada Regulatory Information

CEPA DSL/NDL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format.

Prepared by: Catherine Bimler, Regulatory Affairs Specialist

Issue date: 11/02/2016

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MATHESON

ask...The Gas Professionals™

Safety Data Sheet

Material Name: ARGON, COMPRESSED

SDS ID: MAT01860

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

ARGON, COMPRESSED

Synonyms

ARGON; UN 1006; AR

Chemical Family

non-metallic

Product Use

Industrial and Specialty Gas Applications.

Restrictions on Use

None known.

Details of the supplier of the safety data sheet

MATHESON TRI-GAS, INC.

150 Allen Road, Suite 302

Basking Ridge, NJ 07920

General Information: 1-800-416-2505

Emergency #: 1-800-424-9300 (CHEMTREC)

Outside the US: 703-527-3887 (Call collect)

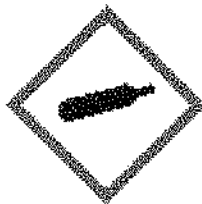
Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

Gases Under Pressure - Compressed gas

GHS Label Elements

Symbol(s)



Signal Word

Warning

Hazard Statement(s)

Contains gas under pressure; may explode if heated.

Precautionary Statement(s)

**MATHESON**

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Safety Data Sheet

Material Name: ARGON, COMPRESSED**SDS ID: MAT01860****Prevention**

None needed according to classification criteria.

Response

None needed according to classification criteria.

Storage

Protect from sunlight. Store in a well-ventilated place.

Disposal

Dispose in accordance with all applicable regulations.

Other Hazards

Rapid release of compressed gas may cause frostbite. May cause asphyxia.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
7440-37-1	ARGON, COMPRESSED	100

Section 4 - FIRST AID MEASURES

Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

Skin

If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.

Eyes

Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion

If swallowed, get medical attention.

Most Important Symptoms/Effects**Acute**

frostbite, suffocation

Delayed

no information on significant adverse effects.



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Safety Data Sheet

Material Name: ARGON, COMPRESSED

SDS ID: MAT01860

Note to Physicians

For inhalation, consider oxygen.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Use extinguishing agents appropriate for surrounding fire. Large fires: Use water spray to keep containers cool.

Unsuitable Extinguishing Media

None known.

Special Hazards Arising from the Chemical

Negligible fire hazard. Pressurized containers may rupture or explode if exposed to sufficient heat.

Hazardous Combustion Products

None known.

Fire Fighting Measures

Move container from fire area if it can be done without risk. Damaged cylinders should be handled only by specialists. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with water spray until well after the fire is out. Do not direct water at source of leak or safety devices; icing may occur. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. Stay away from the ends of tanks. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile).

Special Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up

Do not touch or walk through spilled material. Stop leak if possible without personal risk. Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material. Do not direct water at spill or source of leak. If possible, turn leaking containers so that gas escapes rather than liquid. Prevent entry into waterways, sewers, basements, or confined areas. Allow substance to evaporate. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. Ventilate closed spaces before entering.

Environmental Precautions

Avoid release to the environment.

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Safety Data Sheet

Material Name: ARGON, COMPRESSED**SDS ID: MAT01860**

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Avoid breathing dust/fume/gas/mist/vapors/spray. Use only with adequate ventilation. Wash hands thoroughly after handling.

Conditions for Safe Storage, Including any Incompatibilities

Protect from sunlight. Store in a well-ventilated place.
Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.

Incompatible Materials

No data available.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

ARGON, COMPRESSED	7440-37-1
ACGIH:	(See Appendix F: Minimal Oxygen Content)

EU - Occupational Exposure (98/24/EC) - Binding Biological Limit Values and Health Surveillance Measures

There are no biological limit values for any of this product's components.

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)

There are no biological limit values for any of this product's components.

Engineering Controls

Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment**Eye/face protection**

For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety glasses. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin Protection

For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.

Respiratory Protection

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Glove Recommendations

For the gas: Wear appropriate chemical resistant gloves. For the liquid: Wear insulated gloves.

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Safety Data Sheet

Material Name: ARGON, COMPRESSED**SDS ID: MAT01860**

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	colorless gas	Physical State	gas
Odor	odorless	Color	colorless
Odor Threshold	Not available	pH	Not available
Melting Point	-189 °C (-308 °F)	Boiling Point	-185.9 °C (-303 °F)
Freezing point	Not available	Evaporation Rate	Not available
Boiling Point Range	Not available	Flammability (solid, gas)	Not available
Autoignition	Not available	Flash Point	(Non-flammable)
Lower Explosive Limit	Not available	Decomposition	Not available
Upper Explosive Limit	Not available	Vapor Pressure	500 mmHg at -190 °C
Vapor Density (air=1)	1.38	Specific Gravity (water=1)	Not available
Water Solubility	3.36 % (@ 20 °C)	Partition coefficient: n-octanol/water	Not available
Viscosity	0.0225 cp	Solubility (Other)	Not available
Density	1.784 g/L at 0 °C	Physical Form	gas
Taste	tasteless	Molecular Formula	Ar
Molecular Weight	39.948		

Solvent Solubility**Soluble**

organic solvents

Section 10 - STABILITY AND REACTIVITY

Reactivity

No reactivity hazard is expected.

Chemical Stability



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Safety Data Sheet

Material Name: ARGON, COMPRESSED

SDS ID: MAT01860

Stable at normal temperatures and pressure.

Possibility of Hazardous Reactions

Will not polymerize.

Conditions to Avoid

Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.

Incompatible Materials

No data available.

Hazardous decomposition products

No data available.

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation

nausea, vomiting, difficulty breathing, irregular heartbeat, headache, dizziness, Disorientation, loss of coordination, mood swings, tingling sensation, suffocation, convulsions, Unconsciousness, coma

Skin Contact

frostbite

Eye Contact

frostbite, blurred vision

Ingestion

ingestion of a gas is unlikely

Acute and Chronic Toxicity

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and no selected endpoints have been identified

Immediate Effects

frostbite, suffocation

Delayed Effects

no information on significant adverse effects.

Irritation/Corrosivity Data

No data available.

Respiratory Sensitization

No data available.

Dermal Sensitization

No data available.

Component Carcinogenicity



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Safety Data Sheet

Material Name: ARGON, COMPRESSED

SDS ID: MAT01860

None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA

Germ Cell Mutagenicity

No data available.

Tumorigenic Data

No data available

Reproductive Toxicity

No data available.

Specific Target Organ Toxicity - Single Exposure

No information on significant adverse effects.

Specific Target Organ Toxicity - Repeated Exposure

No information on significant adverse effects.

Aspiration hazard

Not applicable.

Medical Conditions Aggravated by Exposure

None known.

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity

No LOLEcotoxicity data are available for this product's components

Persistence and Degradability

This substance is not expected to biodegrade.

Bioaccumulative Potential

No data available.

Mobility

No data available.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose in accordance with all applicable regulations.

Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components

Section 14 - TRANSPORT INFORMATION

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Safety Data Sheet

Material Name: ARGON, COMPRESSED**SDS ID: MAT01860**

US DOT Information:

Shipping Name: Argon, compressed

Hazard Class: 2.2

UN/NA #: UN1006

Required Label(s): 2.2

IMDG Information:

Shipping Name: Argon, compressed

Hazard Class: 2.2

UN#: UN1006

Required Label(s): 2.2

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations

None of this products components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA Section 311/312 (40 CFR 370 Subparts B and C)

Acute Health: Yes Chronic Health: No Fire: No Pressure: Yes Reactivity: No

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
ARGON, COMPRESSED	7440-37-1	No	Yes	Yes	Yes	Yes

Not listed under California Proposition 65**Canadian WHMIS Ingredient Disclosure List (IDL)**

The components of this product are either not listed on the IDL or are present below the threshold limit listed on the IDL.

WHMIS Classification

A.

Component Analysis - Inventory

ARGON, COMPRESSED (7440-37-1)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes

**MATHESON**

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Safety Data Sheet

Material Name: ARGON, COMPRESSED**SDS ID: MAT01860**

Section 16 - OTHER INFORMATION

NFPA Ratings

Health: 3 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes

Updated: 05/01/2015

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH - Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

Other Information**Disclaimer:**

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Safety Data Sheet

Mercury (Metallic)

SDS Revision Date:

05/01/2015

1. Identification

1.1. Product identifier

Product Identity

Mercury (Metallic)

Alternate Names

Quicksilver; Hydrargyrum; Liquid Silver

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use

See Technical Data Sheet.

Application Method

See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name

WM Mercury Waste Inc.
21211 Durand Avenue
Union Grove, WI 53182

Emergency

CHEMTREC (USA)

(800) 424-9300

Customer Service: WM Mercury Waste Inc.

(800) 741-3343

2. Hazard(s) identification

2.1. Classification of the substance or mixture

Acute Tox. 2;H330

Fatal if inhaled.

Repr. 1B;H360D

May damage the unborn child.

STOT RE 1;H372

Causes damage to organs through prolonged or repeated exposure. Specific Target Organs: (Central Nervous System)

Aquatic Chronic 1;H410

Very toxic to aquatic life with long lasting effects.

2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.



Danger

H330 Fatal if inhaled.

H360D May damage the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

Safety Data Sheet

Mercury (Metallic)

SDS Revision Date:

05/01/2015

[Prevention]:

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe mist / vapors / spray.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

P281 Use personal protective equipment as required.

P284 Wear respiratory protection.

[Response]:

P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P308+313 IF exposed or concerned: Get medical advice / attention.

P310 Immediately call a POISON CENTER or doctor / physician.

P314 Get Medical advice / attention if you feel unwell.

P320 Specific treatment is urgent (see information on this label).

P391 Collect spillage.

[Storage]:

P403+233 Store in a well ventilated place. Keep container tightly closed.

P405 Store locked up.

[Disposal]:

P501 Dispose of contents / container in accordance with local / national regulations.

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Mercury CAS Number: 0007439-97-6	100	Repr. 1B;H360D Acute tox. 2;H330 STOT RE 1;H372 Aquatic Acute 1;H400 Aquatic Chronic 1;H410	[1][2]

In accordance with paragraph (i) of §1910.1200, the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

[1] Substance classified with a health or environmental hazard.

[2] Substance with a workplace exposure limit.

[3] PBT-substance or vPvB-substance.

*The full texts of the phrases are shown in Section 16.

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4. First aid measures

4.1. Description of first aid measures

General	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
Inhalation	Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.
Eyes	Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.
Skin	Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.
Ingestion	If swallowed, wash out mouth with water, obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Overview	<p>Eye: Contact with eyes may cause severe irritation, and possible eye burns. Vapors may cause eye irritation.</p> <p>Skin: May cause skin irritation. May be absorbed through the skin in harmful amounts. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Chronic exposure to mercury may cause permanent central nervous system damage, fatigue, weight loss, tremors, and personality changes.</p> <p>Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause effects similar to those for inhalation exposure.</p> <p>Inhalation: Causes respiratory tract irritation. Inhalation of fumes may cause metal fume fever, which is characterized by flu-like symptoms with metallic taste, fever, chills, cough, weakness, chest pain, muscle pain and increased white blood cell count. May cause central nervous system effects including vertigo, anxiety, depression, muscle incoordination, and emotional instability. May cause severe respiratory tract irritation.</p> <p>Chronic: Chronic exposure to mercury may cause permanent central nervous system damage, fatigue, weight loss, tremors, and personality changes.</p> <p>Notes to Physician: Treat symptomatically and supportively.</p> <p>Antidote: The use of Dimercaprol or BAL (British Anti-Lewisite) as a chelating agent should be determined by qualified medical personnel. The use of d-Penicillamine as a chelating agent should be determined by qualified medical personnel. See section 2 for further details.</p>
Inhalation	Fatal if inhaled.

5. Fire-fighting measures

5.1. Extinguishing media

Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: Mercury/mercury oxides.

Do not breathe mist / vapors / spray.

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5.3. Advice for fire-fighters

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Combustion generates toxic fumes.

ERG Guide No. 172

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Put on appropriate personal protective equipment (see section 8).

6.2. Environmental precautions

Do not allow spills to enter drains or waterways.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

Vacuum or sweep up material and place into a suitable disposal container. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section).

7. Handling and storage

7.1. Precautions for safe handling

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid breathing dust, vapor, mist, or gas. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Handle containers carefully to prevent damage and spillage.

Incompatible materials: Acetylene, ammonia, boron phosphodiiodide, chlorine, chlorine dioxide, methyl azide, sodium carbide, halogens, strong oxidizers.

Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from metals. Poison room locked.

See section 2 for further details. - [Storage]:

7.3. Specific end use(s)

No data available.

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8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0007439-97-6	Mercury	OSHA	TWA 0.1 mg/m3
		ACGIH	Alkyl compounds TWA: 0.01 mg/m3 STEL 0.03 mg/m3 Skin Aryl compounds TWA: 0.05 mg/m3 C 0.1 mg/m3 Skin Elemental/Inorganic 0.025mg/m3 Skin
		NIOSH	No Established Limit
		Supplier	No Established Limit

Carcinogen Data

CAS No.	Ingredient	Source	Value
0007439-97-6	Mercury	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: Yes; Group 4: No;

8.2. Exposure controls

Respiratory

Follow the OSHA respirator regulations found in 29CFR §1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Eyes

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin

Wear appropriate protective clothing to prevent skin exposure. Wear appropriate gloves to prevent skin exposure.

Engineering Controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

Other Work Practices

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

Appearance

Silver Liquid

Odor

Odorless

Odor threshold

Not Measured

pH

Not Applicable

Melting point / freezing point

-38.87 deg C

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Initial boiling point and boiling range	356.5 deg C @ 760.00mmHg
Flash Point	Not Measured
Evaporation rate (Ether = 1)	Not Available
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: Not Measured Upper Explosive Limit: Not Measured
Vapor pressure (Pa)	0.002 mmHg @ 25C
Vapor Density	7 (Air=1)
Specific Gravity	13.5400g/cm3 (Water=1)
Solubility in Water	Insoluble
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Available
Viscosity (cSt)	1.554 cP 20.00
Molecular Formula	Hg
Molecular Weight	200.59

9.2. Other information

No other relevant information.

10. Stability and reactivity

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

High temperatures, incompatible materials, metals.

10.5. Incompatible materials

Acetylene, ammonia, boron phosphodiiodide, chlorine, chlorine dioxide, methyl azide, sodium carbide, halogens, strong oxidizers.

10.6. Hazardous decomposition products

Mercury/mercury oxides.

11. Toxicological information

Acute toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm

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Mercury - (7439-97-6)	37.00, Rat - Category: 2	No data available	No data available	No data available	No data available
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Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	2	Fatal if swallowed.
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	2	Fatal if inhaled.
Skin corrosion/irritation	---	Not Applicable
Serious eye damage/irritation	---	Not Applicable
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	1B	May damage the unborn child.
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	1	Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	---	Not Applicable

12. Ecological information

12.1. Toxicity

Very toxic to aquatic life with long lasting effects.

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Mercury - (7439-97-6)	Not Available	0.0052, Daphnia magna	Not Available

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

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This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available.

13. Disposal considerations

13.1. Waste treatment methods

Observe all federal, state and local regulations when disposing of this substance.

14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	UN2809	UN2809	UN2809
14.2. UN proper shipping name	UN2809, Mercury, 8, III	Mercury	Mercury
14.3. Transport hazard class(es)	DOT Hazard Class: 8 (6.1)	IMDG: 8 Sub Class: 6.1	Air Class: 8
14.4. Packing group	III	III	III
14.5. Environmental hazards			
IMDG	Marine Pollutant: Yes (Mercury)		
14.6. Special precautions for user	No further information		

15. Regulatory information

Regulatory Overview	The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.		
Toxic Substance Control Act (TSCA)	All components of this material are either listed or exempt from listing on the TSCA Inventory.		
WHMIS Classification	D1A		
US EPA Tier II Hazards	Fire: No Sudden Release of Pressure: No Reactive: No Immediate (Acute): Yes Delayed (Chronic): Yes		
EPCRA 311/312 Chemicals and RQs (lbs):	Mercury (1.00)		
EPCRA 302 Extremely Hazardous:	To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.		

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EPCRA 313 Toxic Chemicals:

Mercury

Proposition 65 - Carcinogens (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Developmental Toxins (>0.0%):

Mercury

Proposition 65 - Female Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Male Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

New Jersey RTK Substances (>1%):

Mercury

Pennsylvania RTK Substances (>1%):

Mercury

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H330 Fatal if inhaled.

H360D May damage the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall WM Mercury Waste Inc. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages.

End of Document

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SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: MOBIL ALMO 525
Product Description: Base Oil and Additives
Product Code: 201560B08020, 603183-00, 970924
Intended Use: Lubricant

COMPANY IDENTIFICATION

Supplier: EXXON MOBIL CORPORATION
22777 Springwoods Village Parkway
Spring, TX. 77389 USA
24 Hour Health Emergency 609-737-4411
Transportation Emergency Phone 800-424-9300 or 703-527-3887 CHEMTREC
Product Technical Information 800-662-4525
MSDS Internet Address <http://www.exxon.com>, <http://www.mobil.com>

SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. This product may be used in certain applications where misting can occur. Excessive exposure to liquids and mists may cause skin and eye irritation. In addition, excessive exposure to mists may cause respiratory irritation and damage and aggravate pre-existing emphysema or asthma. Mists may be irritating to the eyes, nose, throat, and lungs. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

NFPA Hazard ID:	Health: 0	Flammability: 1	Reactivity: 0
HMIS Hazard ID:	Health: 0	Flammability: 1	Reactivity: 0

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NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
SULFONIC ACIDS, PETROLEUM, CALCIUM SALTS	61789-86-4	0.1 - < 1%	H317

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

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FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Pressurized mists may form a flammable mixture.

Hazardous Combustion Products: Aldehydes, Oxides of carbon, Smoke, Fume, Sulfur oxides, Incomplete combustion products

FLAMMABILITY PROPERTIES

Flash Point [Method]: >188°C (370°F) [ASTM D-92]

Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0

Autoignition Temperature: N/D

SECTION 6

ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

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ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7

HANDLING AND STORAGE

HANDLING

Avoid breathing mists or vapors. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The container choice, for example storage vessel, may effect static accumulation and dissipation. Do not store in open or unlabelled containers. Keep away from incompatible materials.

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur the following are recommended: 5 mg/m³ - ACGIH TLV (inhalable fraction), 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator

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selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Particulate air-purifying respirator approved for dust / oil mist is recommended.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended. Chemical type goggles should be worn during misting operations.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid

Color: Amber

Odor: Characteristic

Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.883 [ASTM D4052]

Flammability (Solid, Gas): N/A

Flash Point [Method]: >188°C (370°F) [ASTM D-92]

Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0

Autoignition Temperature: N/D

Boiling Point / Range: > 316°C (600°F)

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Decomposition Temperature: N/D
Vapor Density (Air = 1): > 2 at 101 kPa
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: 46 cSt (46 mm²/sec) at 40 °C | 7.3 cSt (7.3 mm²/sec) at 100°C [ASTM D 445]
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -24°C (-11°F) [ASTM D97]
DMSO Extract (mineral oil only), IP-346: < 3 %wt

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.

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Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

OTHER INFORMATION

For the product itself:

Oil Mist (highly refined oils): Animals exposed to high concentrations of mist developed oil retention, inflammation, and oil granulomas in the respiratory tract. Oils exposed to high temperatures, cracking conditions, or mixing with tramp / used oils may introduce polycyclic aromatic compounds or microbial contaminants that could result in cancer or severe respiratory hazards.

Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test animals.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC

3 = IARC 1

5 = IARC 2B

2 = NTP SUS

4 = IARC 2A

6 = OSHA CARC

SECTION 12

ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

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Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13

DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14

TRANSPORT INFORMATION

LAND (DOT): Not Regulated for Land Transport

LAND (TDG): Not Regulated for Land Transport

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SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15	REGULATORY INFORMATION
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OSHA HAZARD COMMUNICATION STANDARD: This material is not considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, IECSC, PICCS, TSCA

EPCRA SECTION 302: This material contains no extremely hazardous substances.

CWA / OPA: This product is classified as an oil under Section 311 of the Clean Water Act (40 CFR 110) and the Oil Pollution Act of 1990. Discharge or spills which produce a visible sheen on either surface water, or in waterways/sewers which lead to surface water, must be reported to the National Response Center at 800-424-8802.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
CHLORO ALKANES	61788-76-9	19
ZINC DITHIOPHOSPHATE	68649-42-3	15, 19

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16	OTHER INFORMATION
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N/D = Not determined, N/A = Not applicable

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KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):

H317: May cause allergic skin reaction; Skin Sensitization, Cat 1

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Updates made in accordance with implementation of GHS requirements.

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MHC: 0B, 0B, 0, 0, 0, 1

PPEC: A

DGN: 2008031XUS (545270)

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HASA MURIATIC ACID

Safety Data Sheet

HASA MURIATIC ACID
Safety Data Sheet (SDS No. 110)



Emergency 24 Hour Telephone: **CHEMTREC 800.424.9300**

Corporate Headquarters: Hasa Inc.
P. O. Box 802736
Santa Clarita, CA 91355
Telephone • 661.259.5848
Fax • 661.259.1538

SECTION 1: IDENTIFICATION

1.1	Product Identification:	
1.1.1	Product Name:	HASA MURIATIC ACID
1.1.2	CAS # (Chemical Abstracts Service):	7647-01-0
1.1.3	RTECS (Registry of Toxic Effects of Chemical Substances):	MW4025000
1.1.4	EINECS (European Inventory of Existing Chemical Substances):	231-595-7
1.1.5	Synonym:	Hydrochloric Acid, Spirits of Salt
1.1.6	Chemical Name:	Hydrochloric Acid
1.1.7	Chemical Formula:	HCl
1.2	Recommended Uses:	Household cleaning, swimming pool water pH control and neutralization.
1.3	Company Identification:	Hasa Inc. P.O. Box 802736 Santa Clarita, CA 91355
1.4	Emergency Telephone Number:	CHEMTREC: 1-800-424-9300 (24 hour)
1.5	Non-Emergency Assistance:	661-259-5848 (8 AM – 5 PM PST / PDT)

SECTION 2: HAZARD(S) IDENTIFICATION

Health Hazard	Acute Toxicity (Oral):	Category 4
	Skin corrosion / irritation:	Category 1
	Serious eye damage / irritation	Category 1
	Specific Target Organ Toxicity (Single exposure)	Category 3 (respiratory tract irritation)
Physical Hazard	Corrosive to metals.	Category 1
Symbols		
Signal Word	DANGER	
Hazard Statement	Causes severe skin burns & eye damage. Harmful if swallowed. May cause respiratory irritation. Maybe corrosive to metals.	
Precautionary Statement	Prevention Wear protective gloves/protective clothing/eye protection/face protection. Do not eat, drink or smoke when using this product. Do not breathe mist or vapor. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling. Keep only in original container.	
	Response If swallowed: Rinse mouth. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.	
	Storage Store locked up. Store in a corrosive resistant container. Store in a well-ventilated place. Keep container tightly closed.	
	Disposal Dispose of container/contents in accordance with local, regional, national, international regulations as specified.	

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

	Ingredient	CAS No.	Weight % (Approx.)
3.1	Hydrochloric Acid	7647-01-0	31.45%
3.2	Water	7732-18-5	68.55%

SECTION 4: FIRST-AID MEASURES

4.1.	IF IN EYES	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
4.2.	IF ON SKIN OR CLOTHING	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
4.3.	IF INHALED	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
4.4.	IF SWALLOWED	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage.

SECTION 5: FIRE-FIGHTING MEASURES

5.1	Products of Combustion:	Hydrogen and chlorine
5.2	Fire Hazards in Presence of Various Substances:	Reacts with many metals to liberate hydrogen gas which can form explosive mixtures with air.
5.3	Explosion Hazards:	Not sensitive.
5.4	Fire Fighting Media and Instructions:	
5.4.1	Extinguishing Media:	Use extinguishing measures appropriate to local circumstances and the surrounding environment.
5.4.2	Small Fires:	Use carbon dioxide, dry chemical, dry sand, alcohol-resistant foam or water spray.
5.4.3	Large Fires:	Water spray, fog or alcohol-resistant foam. Move containers from fire area if you can do it without risk. Use water spray or fog; do not use straight streams. Dike fire-control water for later disposal; do not scatter the material.
5.5	Fire Involving Tank Cars / Trailer Loads:	Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not get water inside containers. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1	Small Spill:	Gather up with a squeegee and place in pool and spa. If this is not possible, absorb with sand, diatomaceous earth or similar products and securely bag, and place in trash for collection.
6.2	Large Spill:	<p>Steps to be taken in case material is released or spilled: Spills or discharges into the environment involving large quantities of Hydrochloric Acid should be controlled and cleaned-up according to a pre-determined, affirmative written Spill Prevention and Control Program. Refer to Section 15 for spill/release reporting information. Spills should be handled immediately by neutralization and dilution of the spilled product by the use of Soda Ash (Sodium Carbonate), Lime (Calcium Hydroxide), or Limestone (Calcium Carbonate) with large amounts of water. For an interior (inside a closed space) spill be aware that the use of Soda Ash, Lime and Limestone will evolve heat and carbon dioxide and that ample ventilation must be provided.</p> <p>If possible without personal risk, stop leak. Try to prevent the materials from entering drains, waterways, or sewers and dispose of in accordance with local regulations. Rinse exposed area with dilute sodium carbonate solution.</p>

SECTION 7: HANDLING AND STORAGE

7.1	Handling:	Keep away from skins and eyes. Do not inhale or swallow. Do not mix with chlorine type bleaches or other household chemicals. Whenever handling muriatic acid, wear protective clothing (goggles, old clothing and rubber gloves). Remove protective clothing and wash before reuse.
7.2	Storage and Disposal:	Store muriatic acid in a clean, dry place in the upright position. Keep out of reach of children, pets and other animals. Rinse empty container thoroughly before discarding.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION		
8.1	Engineering Controls:	Local exhaust to maintain levels below Permissible Exposure Limit (PEL).
8.2	Personal Protection:	When necessary, wear splash goggles or safety glasses and gloves.
8.3	Personal Protection in case of a Large Spill:	Wear splash goggles or safety glasses and gloves. If natural ventilation is insufficient, wear a NIOSH approved respirator.
8.4	Exposure Guidelines:	
8.4.1	ACGIH (American Conference of Governmental and Industrial Hygienists) TLV (Threshold Limit Value)	5 ppm (7 mg/m ³) Ceiling
8.4.2	PEL (OSHA Permissible Exposure Limit)	5 ppm (7 mg/m ³) Ceiling Limit
8.4.3	IDLH (NIOSH Immediate Danger to Life & Health)	50 ppm (75 mg/m ³)
8.4.4	AIHA (American Industrial Hygiene Association)	ERPG – 1 (<i>The maximum airborne concentration below which it is believed nearly all individuals could be exposed for up to one hour without experiencing other than mild transient adverse health effects or perceiving a clearly defined objectionable odor.</i>): 3 ppm ERPG – 2 (<i>The maximum airborne concentration below which it is believed nearly all individuals could be exposed for up to one hour without experiencing or developing irreversible or other serious health effects or symptoms that could impair an individual's ability to take protective action.</i>): 20 ppm ERPG – 3 (<i>The maximum airborne concentration below which it is believed nearly all individuals could be exposed for up to one hour without experiencing or developing life-threatening health effects.</i>): 150 ppm

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1	Appearance:	Colorless liquid.
9.2	Odor:	Irritating and pungent odor.
9.3	Odor Threshold:	4.7 ppm @ at 25 °C
9.4	pH:	<1.0
9.5	Melting Point:	Not applicable.
9.6	Freezing point:	-46.9°C (-52.5°F)
9.7	Boiling Point & Boiling Range:	85°C (185°F)
9.8	Flash Point:	No information available.
9.9	Evaporation Rate:	No information available.
9.10	Flammability (solid, gas):	Nonflammable and noncombustible.
9.11	Upper / Lower Flammability or Explosive Limits:	Not applicable.
9.12	Vapor Pressure:	40 mm Hg @ 30°C (86°F)
9.13	Vapor Density:	No information available.
9.14	Relative Density (Specific Gravity):	1.16 @ 15.5°C (60°F)
9.15	Solubility in Water:	Mixes with water in all concentrations.
9.16	Partition Coefficient: (n-octanol / water):	Not applicable.
9.17	Auto-ignition Temperature:	Not applicable.
9.18	Decomposition Temperature:	85°C. Rate of decomposition increases with heat.
9.19	Molecular Weight:	36.46 g/mole
9.20	Viscosity:	1.55 centipoises @ 30°C (86°F)

SECTION 10: STABILITY AND REACTIVITY

10.1	Stability:	Stable under normal conditions of storage, handling, and use.
10.2	Instability Temperature:	85°C. Rate of decomposition increases with heat.
10.3	Conditions of Instability:	High heat, ultraviolet light.
10.4	Incompatibility with Various Substances:	Oxidizing agents, acids, nitrogen containing organic, metals, iron, copper, nickel, cobalt, organic materials, and ammonia. Corrosive to most metals with evolution of hydrogen gas, which may form explosive mixtures with air.
10.5	Special Remarks on Reactivity:	Rate of decomposition increases with heat.
10.6	Hazardous Polymerization:	Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1	Routes of Entry:	Eyes, skin, ingestion.
11.2	Eye damage & skin corrosion:	Causes eye burns. Contact with this material will cause burns to the skin, eyes and mucous membranes. Permanent eye damage including blindness could result.
11.3	Acute Oral Toxicity (LD₅₀):	NIOSH: 900 mg/kg (rabbit)
11.4	Acute Inhalation Toxicity (LC₅₀):	3124 mg/l, 1 Hour (rat)
11.5	Toxic Effects on Humans:	Harmful if swallowed. Causes digestive tract burns. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.
11.6	Carcinogenic [Cancer Potential] Information:	
	NTP (National Toxicological Program 6 th Annual Report on Carcinogens):	Not Listed.
	IARC (International Agency for Research on Cancer Monographs, V. 1-100):	Not Listed.
	Proposition 65, California only: (Safe Drinking Water and Toxic Enforcement Act of 1986):	Not Listed.
11.7	Mutagenic Effects:	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
11.8	Signs and Symptoms of Exposure:	Exposure to hydrochloric acid may cause severe burns at the contact points.
11.9	Medical Conditions Generally Aggravated by Exposure:	Exposure to fumes may aggravate dermatitis and breathing disorders.
11.10	Health Hazards (Acute and Chronic):	Hydrogen Chloride, both as a gas and in a solution as Hydrochloric Acid, is a corrosive substance and can cause severe and painful burns on contact with any part of the body or if taken internally. The mucous membranes of the eyes and the upper respiratory tract are especially susceptible to the irritating effects of high atmospheric concentrations of Hydrogen Chloride. The gas or vapor is so penetrating and pungent that when high concentrations do occur, those exposed should immediately leave the contaminated area.

SECTION 12: ECOLOGICAL INFORMATION

12.1	Ecotoxicity General:	This product is toxic to fish and aquatic organisms. Do not contaminate water containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.
12.2	Ecotoxicological Information:	LC₅₀ Shrimp 100 to 330 ppm/48 hr (salt water) LC₅₀ Mosquito Fish 282 mg/L (24 to 96 hours) LC₅₀ Green crabs 100 mg/L (96 hr produced no stress effects) LC₅₀ Gold fish 180 mg/L (96 hours) Aquatic Hazard Concern Level : moderate
12.3	Persistence and Degradation:	When hydrochloric acid is spilled onto soil, it will begin to infiltrate. The presence of water in the soil will influence the rate of chemical movement in the soil. During transport through the soil, hydrochloric acid will dissolve some of the soil material, in particular those of a carbonate base. The acid will be expected to remain for transport down toward the ground water table. Hydrogen chloride in water dissociates almost completely, with the hydrogen ion captured by the water molecules to form the hydronium ion.
12.4	Products of Biodegradation:	Not pertinent.

SECTION 13: DISPOSAL CONSIDERATIONS

Do not contaminate food or feed by storage, disposal, or cleaning of equipment. Product or rinsates that cannot be used should be diluted with water before disposal in a sanitary sewer. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination system (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Dispose of in accordance with all applicable local, county, State, and Federal regulations.

SECTION 14: TRANSPORT INFORMATION

14.1	Shipping Name:	Hydrochloric Acid
14.2	Hazard Class / Division:	8
14.3	Identification No.:	UN 1789
14.4	Packing Group:	PG II
14.5	Reportable Quantity (RQ):	5,000 lb (1643 gallons)
14.6	DOT Special Permit 6614:	Hydrochloric acid may be shipped in deposit 1 gallon polyethylene bottles secured 4 per case in a plastic crate in accordance with DOT-SP-6614. In these cases, the special permit number “DOT-SP-6614” is included in the shipping description. The shipping description for return of empty deposit bottles and crates is “RESIDUE: LAST CONTAINED UN1789, HYDROCHLORIC ACID, 8, PGII, DOT-SP 6614”.
14.7	Deposit Pails, Carboys and Drums:	The shipping description for return of empty deposit pails, carboys, and drum is “RESIDUE: LAST CONTAINED UN1789, HYDROCHLORIC ACID, 8, PGII”.
14.8	Materials of Trade (MOT) Exceptions. Certain hazardous materials transported in small quantities as part of a business are subject to less regulation, because of the limited hazard they pose. These materials are known as Materials of Trade. The regulations that apply to MOTs are found in 49 CFR § 173.6.	
<i>This information is not intended to convey all specific regulatory or operational requirements / information relating to this product. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.</i>		

SECTION 15: REGULATORY INFORMATION

15.1	U.S. Regulations:	
15.1.1	OSHA HAZCOM (Hazard Communication)	This material is considered hazardous under the HAZCOM standard (29 CFR 1910.1200).
15.1.2	OSHA PSM (Process Safety Management):	Not regulated under PSM standard (29 CFR 1910.119).
15.1.3	EPA EPCRA (EPA Emergency Planning and Community Right-to-know Act):	Not listed on Extremely Hazardous Substances and Their Threshold Planning Quantities. (Appendix A to 40 CFR Part 355)
15.1.4	EPA TSCA (Toxic Substance Control Act):	All components are listed or exempted. TSCA 12(b): This product is not subject to export notification.
15.1.5	EPA CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):	Reportable Quantity (RQ) under CERCLA: 5000 lbs. (1643 gallons).
15.1.6	EPA FIFRA (Federal Insecticide, Fungicide, Fungicide, and Rodenticide Act):	Not regulated under FIFRA standard.
15.1.7	EPA RMP (Risk Management Plan):	Not regulated under RMP. (40 CFR 68.130)
15.2	State of California Regulations:	
15.2.1	CDPR (California Department of Pesticide Regulation):	Registration No: 10897-50008-AA (spray adjuvant)
15.2.2	CalARP (California Accidental Release Prevention):	Not regulated.
15.3	Canada Regulations:	
15.3.1	WHMIS (Workplace Hazardous Materials Information System):	WHMIS classification: D1A - Poisonous and infectious material - Immediate and serious effects - Very toxic E - Corrosive Materials
15.3.2	DSL (Domestic Substances List):	All components of this product are on the DSL.
15.4	International Inventory:	
15.4.1	AICS (Australian Inventory of Chemical Substances):	On inventory or in compliance with inventory.
15.4.2	KECI (Korean Existing Chemicals Inventory):	On inventory or in compliance with inventory.
15.4.3	PICCS (Philippine Inventory of Chemicals and Chemical Substances):	On inventory or in compliance with inventory.
15.4.4	IECSC (Inventory of Existing Chemical Substances in China):	On inventory or in compliance with inventory.
15.4.5	NZIoC (New Zealand Inventory of Chemicals):	On inventory or in compliance with inventory.

SECTION 16: OTHER INFORMATION

16.1	HMIS III (Hazardous Materials Identification System):		
	16.1.1	HEALTH	3
	16.1.2	FLAMMABILITY	0
	16.1.3	PHYSICAL HAZARD	0
	16.1.4	PERSONAL PROTECTION	See Section 8
16.2	NFPA 704 (National Fire Protection Association):		
	16.2.1	Health	3
	16.2.2	Flammability	0
	16.2.3	Instability	0
	16.2.4	Special	None
16.3	International Fire Code / International Building Code:		Corrosive Liquid.
16.4	ANSI (American National Standards Institute):		
	16.4.1	Hazardous Industrial Chemicals - MSDSs-Preparation:	Complies with ANSI Z400.1 – 2004.
	16.4.2	Hazardous Industrial Chemicals - Precautionary Labeling:	Complies with ANSI Z129.1 – 2006.
Note: To convert concentrations in air (at 25°C) from ppm to mg/m ³ : $\text{mg/m}^3 = (\text{ppm}) \times (\text{molecular weight of the compound}) / (24.45)$ For hydrochloric acid: 1 ppm = 1.49 mg/m ³ .			

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Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : S0980 TRASAR 3 CAL SOL 1 L NEXGUARD®

Other means of identification : Not applicable.

Recommended use : REAGENT STANDARD

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630)305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 01/21/2015

Section: 2. HAZARDS IDENTIFICATION**GHS Classification**

Not a hazardous substance or mixture.

GHS Label element

Precautionary Statements : **Prevention:**
Wash hands thoroughly after handling.
Response:
Specific measures: consult SDS Section 4.
Storage:
Store in accordance with local regulations.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

No hazardous ingredients

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse with plenty of water. Get medical attention if symptoms occur.

In case of skin contact : Wash off with soap and plenty of water. Get medical attention if symptoms occur.

If swallowed : Rinse mouth. Get medical attention if symptoms occur.

If inhaled : Get medical attention if symptoms occur.

Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

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Notes to physician	: Treat symptomatically.
Most important symptoms and effects, both acute and delayed	: See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	: None known.
Specific hazards during firefighting	: Not flammable or combustible.
Hazardous combustion products	: Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Sulphur oxides Oxides of phosphorus
Special protective equipment for firefighters	: Use personal protective equipment.
Specific extinguishing methods	: Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Section: 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Refer to protective measures listed in sections 7 and 8.
Environmental precautions	: No special environmental precautions required.
Methods and materials for containment and cleaning up	: Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Flush away traces with water.

Section: 7. HANDLING AND STORAGE

Advice on safe handling	: For personal protection see section 8. Wash hands after handling.
Conditions for safe storage	: Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers.
Suitable material	: The following compatibility data is suggested based on similar product data and/or industry experience: Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.
Unsuitable material	: not determined

SAFETY DATA SHEET

S0980 TRASAR 3 CAL SOL 1 L NEXGUARD®

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

Eye protection : Safety glasses

Hand protection : Wear protective gloves.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Wear suitable protective clothing.

Respiratory protection : No personal respiratory protective equipment normally required.

Hygiene measures : Wash hands before breaks and immediately after handling the product.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid

Colour : Colorless

Odour : None

Flash point : does not flash

pH : 8.6, 100 %
Method: ASTM E 70

Odour Threshold : no data available

Melting point/freezing point : FREEZING POINT: 0 °C, ASTM D-1177

Initial boiling point and boiling range : no data available

Evaporation rate : similar to water

Flammability (solid, gas) : no data available

Upper explosion limit : no data available

Lower explosion limit : no data available

Vapour pressure : similar to water

Relative vapour density : no data available

Relative density : 1.0 (25 °C) ASTM D-1298

Density : 8.3 lb/gal

Water solubility : completely soluble

Solubility in other solvents : no data available

Partition coefficient: n-octanol/water : no data available

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Auto-ignition temperature	: no data available
Thermal decomposition temperature	: no data available
Viscosity, dynamic	: 3 mPa.s (24 °C) Method: ASTM D 2983
Viscosity, kinematic	: no data available
VOC	: 0 %

Section: 10. STABILITY AND REACTIVITY

Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: None known.
Incompatible materials	: None known
Hazardous decomposition products	: Oxides of carbon Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Sulphur oxides Oxides of phosphorus

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes	: Health injuries are not known or expected under normal use.
Skin	: Health injuries are not known or expected under normal use.
Ingestion	: Health injuries are not known or expected under normal use.
Inhalation	: Health injuries are not known or expected under normal use.
Chronic Exposure	: Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact	: No symptoms known or expected.
Skin contact	: No symptoms known or expected.
Ingestion	: No symptoms known or expected.
Inhalation	: No symptoms known or expected.

Toxicity

Product

SAFETY DATA SHEET

S0980 TRASAR 3 CAL SOL 1 L NEXGUARD®

Acute oral toxicity	: no data available
Acute inhalation toxicity	: no data available
Acute dermal toxicity	: no data available
Skin corrosion/irritation	: no data available
Serious eye damage/eye irritation	: no data available
Respiratory or skin sensitization	: no data available
Carcinogenicity	: no data available
Reproductive effects	: no data available
Germ cell mutagenicity	: no data available
Teratogenicity	: no data available
STOT - single exposure	: no data available
STOT - repeated exposure	: no data available
Aspiration toxicity	: no data available

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : This product has no known ecotoxicological effects.

Persistence and degradability

Greater than 95% of this product consists of inorganic substances for which a biodegradation value is not applicable.

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	: <5%
Water	: 30 - 50%
Soil	: 50 - 70%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

SAFETY DATA SHEET

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This preparation or material is not expected to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

Disposal methods : Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Air transport (IATA)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Sea transport (IMDG/IMO)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Section: 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SAFETY DATA SHEET

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SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

TOXIC SUBSTANCES CONTROL ACT (TSCA)

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

AUSTRALIA

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

CHINA

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

EUROPE

The substance(s) in this preparation are included in or exempted from the EINECS or ELINCS inventories

JAPAN

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

KOREA

This product contains substance(s) which are not in compliance with the Toxic Chemical Control Law (TCCL) and may require additional review.

NEW ZEALAND

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

PHILIPPINES

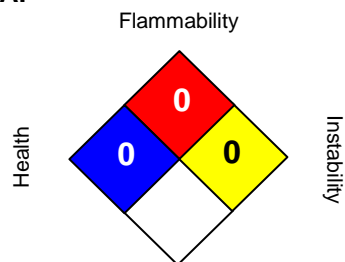
All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

Section: 16. OTHER INFORMATION

SAFETY DATA SHEET

S0980 TRASAR 3 CAL SOL 1 L NEXGUARD®

NFPA:



HMIS III:

HEALTH	0
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 01/21/2015
Version Number : 1.0
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

For additional copies of an MSDS visit www.nalco.com and request access.



Safety Data Sheet

Issue Date: 01-Jun-2010

Revision Date: 11-Mar-2015

Version 1

1. IDENTIFICATION

Product Identifier

Product Name NICKEL SAFE ICE MACHINE CLEANER

Other means of identification

SDS # NS16OZ & NS1G

UN/ID No UN3264

Other Information Package type: 16oz. & 1 gallon.

Recommended use of the chemical and restrictions on use

Recommended Use Food grade all-purpose scale dissolver.

Uses Advised Against For professional use only. Product is a concentrate and should be diluted prior to use.

Details of the supplier of the safety data sheet

Distributor Address

National Refrigeration Products
985 Wheeler Way
Langhorne, PA 19047 USA

Emergency Telephone Number

Company Phone Number 1-800-352-6951

Emergency Telephone (24 hr) Chemtrec 1-800-424-9300 (North America) 1-703-527-3887 (International)

2. HAZARDS IDENTIFICATION

Appearance Clear green liquid

Physical State Liquid

Odor Slight vinegar

Classification

Acute toxicity - Inhalation (Dusts/Mists)	Category 3
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1

Hazards Not Otherwise Classified (HNOC)

May be harmful if swallowed

Signal Word

Danger

Hazard Statements

Toxic if inhaled

Causes severe skin burns and eye damage

**Precautionary Statements - Prevention**

Use only outdoors or in a well-ventilated area
 Do not breathe dust/fume/gas/mist/vapors/spray
 Wash face, hands and any exposed skin thoroughly after handling
 Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

Immediately call a poison center or doctor/physician
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 Immediately call a poison center or doctor/physician
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 Wash contaminated clothing before reuse
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 Immediately call a poison center or doctor/physician
 IF SWALLOWED: rinse mouth. Do NOT induce vomiting

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed
 Store locked up

Precautionary Statements - Disposal

Dispose of in accordance with federal, state and local regulations

Other Hazards

Toxic to aquatic life with long lasting effects

Unknown Acute Toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Phosphoric acid	7664-38-2	<50
Glycolic Acid	79-14-1	<5

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

First Aid Measures**General Advice**

Remove exposed individual(s) to fresh air for 20 minutes. Consult a physician / poison center if individual's condition declines or if symptoms persist.

Eye Contact

In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if necessary.
Ingestion	Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Rinse mouth thoroughly with water. Get medical attention if necessary.

Most important symptoms and effects

Symptoms	May cause gastrointestinal irritation, nausea, diarrhea, and vomiting. Irritation and corrosive burns to mouth, throat, and stomach. May cause irritation to the mucous membranes and upper respiratory tract. Severe burns to exposed skin.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically.
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5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media	Not determined.
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Specific Hazards Arising from the Chemical

Reacts with oxidizers, chlorinating agents, and most metals.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Personal Precautions	Use personal protective equipment as required. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
-----------------------------	--

Methods and material for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Methods for Clean-Up	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Scoop material into suitable container for disposal. For waste disposal, see section 13 of the SDS.

7. HANDLING AND STORAGE**Precautions for safe handling**

Advice on Safe Handling	Handle in accordance with good industrial hygiene and safety practice. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes or clothing. Wash face, hands and any exposed skin thoroughly after handling. Use only outdoors or in a well-ventilated area. Use personal protection recommended in Section 8.
--------------------------------	--

Conditions for safe storage, including any incompatibilities

Storage Conditions	Store locked up. Store away from incompatible materials. Keep container tightly closed and store in a cool, dry and well-ventilated place.
Incompatible Materials	Chlorinating agents. Alkali. Alkaline materials. OXIDIZERS. Metals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Phosphoric acid 7664-38-2	STEL: 3 mg/m ³ TWA: 1 mg/m ³	TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³ (vacated) STEL: 3 mg/m ³	IDLH: 1000 mg/m ³ TWA: 1 mg/m ³ STEL: 3 mg/m ³

Appropriate engineering controls

Engineering Controls	Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the SDS.
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Individual protection measures, such as personal protective equipment

Eye/Face Protection	Use tight fitting, splash proof safety goggles. Contact lenses should not be worn when handling this material. Face Mask.
Skin and Body Protection	Wear suitable protective clothing and footwear appropriate for the risk of exposure. Wear protective Neoprene™ gloves.
Respiratory Protection	Ensure adequate ventilation, especially in confined areas.
General Hygiene Considerations	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

Physical State	Liquid	Odor	Slight vinegar
Appearance	Clear liquid	Odor Threshold	Not determined
Color	Green		

Property	Values	Remarks • Method
pH	1.0	
Melting Point/Freezing Point	Not determined	
Boiling Point/Boiling Range	Not determined	
Flash Point	Not determined	
Evaporation Rate	Not determined	
Flammability (Solid, Gas)	Not determined	
Upper Flammability Limits	Not determined	
Lower Flammability Limit	Not determined	
Vapor Pressure	Not determined	
Vapor Density	Not determined	
Specific Gravity	1.18	(1=Water)
Water Solubility	Not determined	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto-ignition Temperature	Not determined	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	
Dynamic Viscosity	Not determined	

Explosive Properties	Not determined
Oxidizing Properties	Not determined

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to Avoid

Keep out of reach of children.

Incompatible Materials

Chlorinating agents. Alkali. Alkaline materials. OXIDIZERS. Metals.

Hazardous Decomposition Products

Phosphorous oxides. Phosphorus.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact	Causes severe eye damage.
Skin Contact	Causes severe skin burns.
Inhalation	Toxic if inhaled.
Ingestion	May be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Phosphoric acid 7664-38-2	= 1530 mg/kg (Rat)	= 2730 mg/kg (Rabbit)	> 850 mg/m ³ (Rat) 1 h
Glycolic Acid 79-14-1	= 1950 mg/kg (Rat)	-	= 7.7 mg/L (Rat) 4 h

Information on physical, chemical and toxicological effects

Symptoms	Please see section 4 of this SDS for symptoms.
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Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
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Numerical measures of toxicity

Not determined

Unknown Acute Toxicity	0% of the mixture consists of ingredient(s) of unknown toxicity.
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12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic organisms. Toxic to aquatic life with long lasting effects.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Phosphoric acid 7664-38-2		3 - 3.5: 96 h <i>Gambusia affinis</i> mg/L LC50		4.6: 12 h <i>Daphnia magna</i> mg/L EC50
Glycolic Acid 79-14-1		5000: 96 h <i>Brachydanio rerio</i> mg/L LC50 static		

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

Chemical Name	Partition Coefficient
Glycolic Acid 79-14-1	-1.11

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

California Hazardous Waste Status

Chemical Name	California Hazardous Waste Status
Phosphoric acid 7664-38-2	Corrosive

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

UN/ID No UN3264
 Proper Shipping Name Corrosive liquid, acidic, inorganic, n.o.s. (Phosphoric acid, hydroxyacetic acid)
 Hazard Class 8
 Packing Group III
 Reportable Quantity (RQ) 5000 lbs

IATA

UN/ID No UN3264
 Proper Shipping Name Corrosive liquid, acidic, inorganic, n.o.s. (Phosphoric acid, hydroxyacetic acid)
 Hazard Class 8
 Packing Group III

IMDG

UN/ID No UN3264
 Proper Shipping Name Corrosive liquid, acidic, inorganic, n.o.s. (Phosphoric acid, hydroxyacetic acid)
 Hazard Class 8
 Packing Group III

15. REGULATORY INFORMATION

International Inventories

Not determined

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Phosphoric acid 7664-38-2	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ

SARA 311/312 Hazard Categories

Acute health hazard Yes
 Chronic health hazard No
 Fire hazard No
 Sudden release of pressure hazard No
 Reactive hazard No

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Phosphoric acid	5000 lb			X

US State Regulations**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Phosphoric acid 7664-38-2	X	X	X
Glycolic acid 79-14-1	X		X

16. OTHER INFORMATION

NFPA**Health Hazards****Flammability****Instability****Special Hazards****HMIS**

Not determined

Not determined

Not determined

Not determined

Health Hazards**Flammability****Physical Hazards****Personal Protection**

3

0

1

X

Issue Date:

01-Jun-2010

Revision Date:

11-Mar-2015

Revision Note:

Revisions

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet



SAFETY DATA SHEET

150 OIL

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

PRODUCT: NATIONAL 150 REFRIGERATION OIL

PRODUCT CODE: 150 OIL

CHEMICAL NAME/FAMILY: MINERAL OIL

OTHER NAME: REFRIGERANT OIL

MANUFACTURER: NATIONAL REFRIGERANTS, INC.

ADDRESS: 11401 Roosevelt Boulevard Phila., Pa. 19154

INFORMATION: 800-262-0012

EMERGENCY: 800-424-9300

DATE: 3/2015

PREPARER: Matt Callahan

2. HAZARD IDENTIFICATION

CLASSIFICATION: Not classified according to 29 CFR 1910.1200 (2012)

OTHER HAZARDS: SKIN AND EYE CONTACT: Prolonged contact may cause minor skin irritation.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

INGREDIENT

Distillates, (petroleum), hydrotreated heavy naphthenic

CAS#

64742-52-7

WEIGHT

100%

*no hazardous ingredients

COMMON NAMES AND SYNONYMS

Mineral Oil/Refrigerant Oil

There are no stabilizers or impurities that contribute to the classification of the material identified in section 2

4. FIRST AID MEASURES

EYES: Flush with large amounts of water for at least 15 minutes. If redness or irritation persists, contact a physician.

SKIN CONTACT: Wash with soap and water.

INHALATION: None normally required.

INGESTION: Call a physician.



SAFETY DATA SHEET

150 OIL

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Dry chemical, CO₂, foam, waterfog, sand/earth

SPECIAL FIREFIGHTING PROCEDURES: Wear self-contained breathing apparatus.
Water spray is an unsuitable extinguishing agent.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE OF RELEASE OR SPILL: Stop leak. Dike up large spills. Use inert absorbent materials such as earth, sand or vermiculite for clean-up. Use personal protective equipment such as gloves, goggles, and coveralls to prevent contact with skin during clean up.

7. HANDLING AND STORAGE

PRECAUTIONS FOR STORAGE AND HANDLING: Avoid exposure to heat and flames. Protect against eye and skin contact. Store containers in an upright and secure position to prevent spills and protect against damage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS

Provide adequate ventilation when working in confined areas

PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION:

General work clothing and gloves (leather) should provide adequate protection. Any contaminated clothing should be promptly removed and washed before reuse.

EYE PROTECTION:

For normal conditions, wear safety glasses. Where there is reasonable probability of liquid contact, wear chemical safety goggles.

RESPIRATORY PROTECTION:

None generally required for adequately ventilated work situations. For accidental release or non-ventilated situations, or release into confined space, where the concentration may be above the PEL use a NIOSH approved respirator.

ADDITIONAL RECOMMENDATIONS:

Where contact with liquid is likely, such as in a spill or leak, impervious boots and clothing should be worn.



SAFETY DATA SHEET

150 OIL

EXPOSURE LIMITS

OSHA permissible concentration of mineral oil mist in air is 5 mg/m³.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Clear amber liquid
ODOR:	Petroleum odor
ODOR THRESHOLD:	Not determined
PH:	Neutral
MELTING/FREEZING POINT:	0°C (32°F)
BOILING POINT:	>500°F
FLASH POINT: COC METHOD	168°C (334°F)
EVAPORATION RATE:	Negligible
FLAMMABILITY:	Not applicable
LEL/UEL:	Not applicable
VAPOR PRESSURE:	<0.011 kPa (<0.08 mmHg) at 25°C
VAPOR DENSITY:	>10 (air=1)
RELATIVE DENSITY:	0.916
SOLUBILITY:	Insoluble in water
PARTITION COEFFICIENT n-Octanol/water:	2 - 6
AUTO IGNITION TEMPERATURE:	Not determined
DECOMPOSITION TEMPERATURE:	Not determined
VISCOSITY:	30 cSt (40°C (104°F))

10. STABILITY AND REACTIVITY

STABILITY: STABLE

HAZARDOUS POLYMERIZATION: NONE

INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizing agents such as chromic acid, hydrogen peroxide and bromine.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Upon combustion, CO₂ and CO are generated.

11. TOXICOLOGICAL INFORMATION

INHALATION AND SKIN ABSORPTION HEALTH RISKS: OSHA permissible concentration of mineral oil mist in air is 5 mg/m³.

SKIN AND EYE CONTACT: Prolonged contact may cause minor skin irritation.

SYMPTOMS OF EXPOSURE: N/A



SAFETY DATA SHEET

150 OIL

INGESTION: N/A

ACUTE AND CHRONIC HEALTH HAZARDS: N/A

CARCINOGENICITY: NTP
NO

IARC MONOGRAPHS
NO

OSHA REGULATED
NO

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: N/A

12. ECOLOGICAL INFORMATION

No data available

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dispose of in accordance with Federal, State, and Local regulations.

14. TRANSPORTATION INFORMATION

US DOT ID NUMBER:	None
US DOT PROPER SHIPPING NAME:	None
US DOT HAZARD CLASS:	None
US DOT PACKING GROUP:	None

15. REGULATORY INFORMATION

This material is not a hazardous waste under RCRA Regulation 40 CFR 261.

16. OTHER INFORMATION

HMIS:	H	F	R
	1	1	0

DISCLAIMER

INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BELIEVED TO BE ACCURATE AT THE TIME OF PREPARATION. NO WARRANTY IS MADE CONCERNING THE ACCURACY AND NO LIABILITY SHALL BE MADE FOR CLAIMS FOR USE OR RELIANCE OF THE RECOMMENDATIONS CONTAINED HEREIN.

SAFETY DATA SHEET

1. Identification

Identification

Product name: RL 100E (4317-66, 4317-61)

Additional identification

Chemical name: Mixture

Recommended use and restriction on use

Recommended use: Not determined.

Restrictions on use: Not determined.

Details of the supplier of the safety data sheet

Supplier

Company Name: THE LUBRIZOL CORPORATION
Address: 29400 LAKELAND BOULEVARD
WICKLIFFE, OH 44092-2298
US
Telephone: (440)943-1200

Emergency telephone number:

FOR TRANSPORT EMERGENCY CALL CHEMTREC (+1)703 527 3887, OR WITHIN USA 800 424 9300 (LUBRIZOL)

2. Hazard(s) identification

Hazard Classification

Not classified

Label Elements:

Hazard Symbol: No symbol

Signal Word: No signal word.

Hazard Statement: not applicable

Precautionary Statement: not applicable

Other hazards which do not result in GHS classification: None identified.

3. Composition/information on ingredients

General information: The components are not hazardous or are below required disclosure limits.

4. First-aid measures

Ingestion: Rinse mouth. Get medical attention if symptoms occur.

Inhalation: Remove exposed person to fresh air if adverse effects are observed.

Skin Contact: Take off contaminated clothing and wash before re-use. Wash with soap and water. If skin irritation occurs, get medical attention.

Eye contact: Flush thoroughly with water. If irritation occurs, get medical assistance. Remove contact lenses, if present and easy to do. Continue rinsing.

Most important symptoms/effects, acute and delayed

Symptoms: See section 11.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically.

5. Fire-fighting measures

General Fire Hazards: No unusual fire or explosion hazards noted.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: CO₂, dry chemical, foam, water spray, water fog.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical: A solid stream of water will spread the burning material. Material creates a special hazard because it floats on water. See section 10 for additional information.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No data available.

Special protective equipment for fire-fighters: Recommend wearing self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: No data available.

Methods and material for containment and cleaning up: Dike far ahead of larger spill for later recovery and disposal. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material.

Environmental Precautions: Avoid release to the environment. Do not contaminate water sources or sewer. Environmental manager must be informed of all major spillages. Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling: Observe good industrial hygiene practices. Provide adequate ventilation. Wear appropriate personal protective equipment.

Maximum Handling Temperature: Not determined.

Conditions for safe storage, including any incompatibilities: Store away from incompatible materials. See section 10 for incompatible materials.

Maximum Storage Temperature: Not determined.

8. Exposure controls/personal protection

Control Parameters:

Occupational Exposure Limits

None of the components have assigned exposure limits.

Appropriate engineering controls: No special requirements under ordinary conditions of use and with adequate ventilation.

Individual protection measures, such as personal protective equipment

General information: Use personal protective equipment as required.

Eye/face protection: If contact is likely, safety glasses with side shields are recommended.

Skin Protection

Hand Protection: Neoprene. Suitable gloves can be recommended by the glove supplier.

Other: No data available.

Respiratory Protection: Use respirator with an organic vapor cartridge if exposure limit is exceeded. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator. Under normal use conditions, respirator is not usually required. Use appropriate respiratory protection if exposure to dust particles, mist or vapors is likely. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.

Hygiene measures: Observe good industrial hygiene practices.

9. Physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	Colorless to yellow
Odor:	Mild
Odor threshold:	No data available.
pH:	No data available.
Freezing point:	No data available.
Boiling Point:	No data available.
Flash Point:	> 464 °F (240 °C) (Cleveland Open Cup)
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.

Vapor density:	No data available.
Relative density:	0.99 68 °F (20 °C)
Solubility(ies)	
Solubility in water:	Insoluble in water
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	100 mm ² /s (104 °F (40 °C)) 12 mm ² /s (100 °C (212 °F))

10. Stability and reactivity

Reactivity:	No data available.
Chemical Stability:	Material is stable under normal conditions.
Possibility of Hazardous Reactions:	Will not occur.
Conditions to Avoid:	Not determined.
Incompatible Materials:	Strong acids. Strong bases.
Hazardous Decomposition Products:	Thermal decomposition or combustion may generate smoke, carbon monoxide, carbon dioxide, and other products of incomplete combustion.

11. Toxicological information

Information on likely routes of exposure

Inhalation:	No data available.
Ingestion:	No data available.
Skin Contact:	Causes mild skin irritation.
Eye contact:	No data available.

Information on toxicological effects

Acute toxicity

Oral

Product:	Not classified for acute toxicity based on available data. May cause irritation of the gastrointestinal tract.
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Dermal

Product:	Not classified for acute toxicity based on available data. Prolonged or widespread contact with this material could result in the absorption of potentially harmful amounts.
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Inhalation

Product:	Not classified for acute toxicity based on available data.
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Skin Corrosion/Irritation:

Product:	Causes mild skin irritation.
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Serious Eye Damage/Eye Irritation:

Product:	Remarks: Not classified as a primary eye irritant.
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Respiratory sensitization:
No data available

Skin sensitization:
No data available

Specific Target Organ Toxicity - Single Exposure:
No data available

Aspiration Hazard:
No data available

Chronic Effects

Carcinogenicity:
No data available

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
No carcinogenic components identified

Germ Cell Mutagenicity:
No data available

Reproductive toxicity:
No data available

Specific Target Organ Toxicity - Repeated Exposure:
No data available

12. Ecological information

Ecotoxicity

Fish
No data available

Aquatic Invertebrates
No data available

Toxicity to Aquatic Plants
No data available

Toxicity to soil dwelling organisms
No data available

Sediment Toxicity
No data available

Toxicity to Terrestrial Plants
No data available

Toxicity to Above-Ground Organisms
No data available

Toxicity to microorganisms

No data available

**Persistence and Degradability
Biodegradation**

No data available

**Bioaccumulative Potential
Bioconcentration Factor (BCF)**

No data available

Partition Coefficient n-octanol / water (log Kow)

No data available

Mobility:

No data available

Other Adverse Effects:

No data available.

13. Disposal considerations**Disposal instructions:**

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Dispose of packaging or containers in accordance with local, regional, national and international regulations. Empty container contains product residue which may exhibit hazards of product.

Contaminated Packaging:

Container packaging may exhibit hazards.

14. Transport information**DOT**

Not regulated.

IMDG

Not regulated.

IATA

Not regulated.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

None known.

Shipping descriptions may vary based on mode of transport, quantities, temperature of the material, package size, and/or origin and destination. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material. Review classification requirements before shipping materials at elevated temperatures.

15. Regulatory information**US Federal Regulations****TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**Hazard categories**

None known.

SARA 302 Extremely Hazardous Substance
SARA 304 Emergency Release Notification
SARA 311/312 Hazardous Chemical
SARA 313 (TRI Reporting)

This product may contain chemical(s) regulated under the Superfund Amendments and Reauthorization Act (SARA). For additional information please contact Lubrizol Customer Assistance: America(s): AmerLZAMCustomerAssistance@Lubrizol.com ; Europe: EMEAICustomerAssistance@Lubrizol.com ; Asia: APCustomerAssistance@Lubrizol.com

US State Regulations

US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

Inventory Status

Australia (AICS)

All components are in compliance with chemical notification requirements in Australia.

Canada (DSL/NDL)

All components are in compliance with the Canadian Environmental Protection Act and are present on the Domestic Substances List.

China (IECSC)

All components of this product are listed on the Inventory of Existing Chemical Substances in China.

European Union (REACH)

To obtain information on the REACH compliance status of this product, please visit Lubrizol.com/REACH, or e-mail us at REACH_MSDS_INQUIRIES@Lubrizol.com

Japan (ENCS)

May require notification in Japan.

Korea (ECL)

All components are in compliance in Korea.

New Zealand (NZIoC)

This product requires notification before sale in New Zealand.

Philippines (PICCS)

This product requires notification before sale in the Philippines.

Switzerland (SWISS)

This product requires notification before sale in Switzerland.

Taiwan (TCSCA)

This product requires notification before sale in Taiwan.

United States (TSCA)

All components of this material are on the US TSCA Inventory.

The information that was used to confirm the compliance status of this product may deviate from the chemical information shown in Section 3.

16. Other information, including date of preparation or last revision

HMIS Hazard ID

Health	1
Flammability	1
Physical Hazards	0

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date: 03/08/2015
Version #: 1.0
Source of information: Internal company data and other publically available resources.
Further Information: Contact supplier (see Section 1)
Disclaimer: As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.




SAFETY DATA SHEET

1. Product and Company Identification

Product identifier	Evap Foam No Rinse-Aerosol (4171-75)
Other means of identification	Not available
Recommended use	Cleaner
Recommended restrictions	None known.
Manufacturer information	Nu-Calgon 2008 Altom Court St. Louis, MO 63146 US Phone: 314-469-7000 / 800-554-5499 Emergency Phone: 1-800-424-9300 (CHEMTREC)
Supplier	See above.

2. Hazards Identification

Physical hazards	Gases under pressure	Liquefied gas
Health hazards	Serious eye damage/eye irritation	Category 1
Environmental hazards	Not classified.	
WHMIS 2015 defined hazards	Not classified	
Label elements		
Signal word	Danger	
Hazard statement	Contains gas under pressure; may explode if heated. Causes serious eye damage.	
Precautionary statement		
Prevention	Wear eye/face protection.	
Response	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.	
Storage	Protect from sunlight. Store in a well-ventilated place.	
Disposal	Dispose of waste and residues in accordance with local authority requirements.	
WHMIS 2015: Health Hazard(s) not otherwise classified (HHNOC)	None known	
WHMIS 2015: Physical Hazard(s) not otherwise classified (PHNOC)	None known	
Hazard(s) not otherwise classified (HNOC)	None known.	
Supplemental information	Not applicable.	

3. Composition/Information on Ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	%
Butane		106-97-8	1-5
Diethylene glycol monoethyl ether		111-90-0	1-5
Ethanol, 2-butoxy-		111-76-2	1-5
Propane		74-98-6	1-5
Tetrasodium ethylenediamine tetraacetate		64-02-8	1-5
Sodium metasilicate		6834-92-0	<1

4. First Aid Measures

Inhalation	If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.
Skin contact	Flush with cool water. Wash with soap and water. Obtain medical attention if irritation persists.
Eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
Ingestion	In the unlikely event of swallowing contact a physician or poison control center. Rinse mouth.
Most important symptoms/effects, acute and delayed	Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Suitable extinguishing media	Alcohol foam. Carbon dioxide. Dry chemical. Foam.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Contents under pressure.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire-fighting equipment/instructions	In case of fire: Stop leak if safe to do so. Do not move cargo or vehicle if cargo has been exposed to heat. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers. Containers should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.
Specific methods	Cool containers exposed to flames with water until well after the fire is out.
Hazardous combustion products	May include and are not limited to: Oxides of carbon.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep out of low areas. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Refer to attached safety data sheets and/or instructions for use. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water. Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Isolate area until gas has dispersed. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and Storage

Precautions for safe handling	Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment.
Conditions for safe storage, including any incompatibilities	Contents under pressure. Do not expose to heat or store at temperatures above 120°F/49°C as can may burst. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure Controls/Personal Protection

Occupational exposure limits

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Butane (CAS 106-97-8)	TWA	1000 ppm

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Ethanol, 2-butoxy- (CAS 111-76-2)	TWA	97 mg/m3 20 ppm
Propane (CAS 74-98-6)	TWA	1000 ppm

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
Butane (CAS 106-97-8)	STEL	750 ppm
	TWA	600 ppm
Ethanol, 2-butoxy- (CAS 111-76-2)	TWA	20 ppm
Propane (CAS 74-98-6)	TWA	1000 ppm

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value
Butane (CAS 106-97-8)	STEL	1000 ppm
Ethanol, 2-butoxy- (CAS 111-76-2)	TWA	20 ppm

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value
Butane (CAS 106-97-8)	TWA	800 ppm
Diethylene glycol monoethyl ether (CAS 111-90-0)	TWA	165 mg/m3 30 ppm
Ethanol, 2-butoxy- (CAS 111-76-2)	TWA	20 ppm
Propane (CAS 74-98-6)	TWA	1000 ppm

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Butane (CAS 106-97-8)	TWA	1900 mg/m3 800 ppm
Ethanol, 2-butoxy- (CAS 111-76-2)	TWA	97 mg/m3 20 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m3 1000 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Ethanol, 2-butoxy- (CAS 111-76-2)	PEL	240 mg/m3 50 ppm
Propane (CAS 74-98-6)	PEL	1800 mg/m3 1000 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Butane (CAS 106-97-8)	STEL	1000 ppm
Ethanol, 2-butoxy- (CAS 111-76-2)	TWA	20 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Butane (CAS 106-97-8)	TWA	1900 mg/m3 800 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Ethanol, 2-butoxy- (CAS 111-76-2)	TWA	24 mg/m3
		5 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m3
		1000 ppm

US. AIHA Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
Diethylene glycol monoethyl ether (CAS 111-90-0)	TWA	140 mg/m3
		25 ppm

Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
Ethanol, 2-butoxy- (CAS 111-76-2)	200 mg/g	Butoxyacetic acid (BAA), with hydrolysis	Creatinine in urine	*

* - For sampling details, please see the source document.

Exposure guidelines**US. NIOSH: Pocket Guide to Chemical Hazards**

Ethanol, 2-butoxy- (CAS 111-76-2) Can be absorbed through the skin.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Ethanol, 2-butoxy- (CAS 111-76-2) Can be absorbed through the skin.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical splash goggles.

Skin protection

Hand protection Wear protective gloves.

Other Wear suitable protective clothing.

Respiratory protection Wear positive pressure self-contained breathing apparatus (SCBA). Where exposure guideline levels may be exceeded, use an approved NIOSH respirator.

Thermal hazards Not applicable.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product.

9. Physical and Chemical Properties

Appearance	Compressed liquefied gas
Physical state	Gas.
Form	Liquefied gas.
Color	Clear
Odor	Lemon lime
Odor threshold	Not available.
pH	12.3
Melting point/freezing point	Not available.
Initial boiling point and boiling range	32 - 401 °F (0 - 205 °C)
Pour point	Not available.
Specific gravity	Not available.
Partition coefficient (n-octanol/water)	Not available
Flash point	Not available.
Evaporation rate	Not available
Flammability (solid, gas)	Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	65 psi @ 70°F
Vapor density	Not available
Relative density	Not available.
Solubility(ies)	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Flash point class	Not Flammable as per testing under UN Manual of Tests and Criteria Part 3, Section 31.5

10. Stability and Reactivity

Reactivity	Reacts vigorously with acids.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Reacts violently with strong acids. This product may react with oxidizing agents. Do not mix with other chemicals.
Incompatible materials	Acids. Oxidizing agents.
Hazardous decomposition products	Not corrosive to SAE 1020 Steel or non-clad Aluminum based on test data (UN Manual of Tests and Criteria, Part III, Section 37.1 -Corrosion to metals). May include and are not limited to: Oxides of carbon.

11. Toxicological Information

Routes of exposure	Inhalation. Ingestion. Skin contact. Eye contact.
Information on likely routes of exposure	
Ingestion	Expected to be a low ingestion hazard.
Inhalation	Prolonged inhalation may be harmful.
Skin contact	Not corrosive to skin based on in-vitro test data (OECD Guideline 435 - Corrositex®).
Eye contact	Causes serious eye damage.
Symptoms related to the physical, chemical and toxicological characteristics	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects**Acute toxicity**

Components	Species	Test Results
Butane (CAS 106-97-8)		
Acute <i>Inhalation</i> LC50	Mouse	680 mg/L, 2 Hours
	Rat	276000 ppm, 4 Hours
		658 mg/l/4h
<i>Oral</i> LD50	Not available	
Diethylene glycol monoethyl ether (CAS 111-90-0)		
Acute <i>Dermal</i> LD50	Guinea pig	5900 mg/kg

Components	Species	Test Results
	Mouse	6000 mg/kg
	Rabbit	6000 mg/kg
	Rat	6000 mg/kg
<i>Inhalation</i>		
LC50		
	Rat	5240 mg/l/4h
<i>Oral</i>		
LD50	Guinea pig	3000 mg/kg
	Rabbit	3620 mg/kg
	Rat	5500 mg/kg
		1920 mg/kg
Ethanol, 2-butoxy- (CAS 111-76-2)		
Acute		
<i>Dermal</i>		
LD50	Guinea pig	207 mg/kg
	Rabbit	400 mg/kg
		220 mg/kg
		99 mg/kg
	Rat	99 mg/kg
<i>Inhalation</i>		
LC50	Mouse	700 ppm, 7 Hours
	Rat	450 ppm, 4 Hours
		2.2 mg/L, 4 Hours
<i>Oral</i>		
LD50	Guinea pig	1200 mg/kg
	Mouse	1200 mg/kg
	Rabbit	320 mg/kg
	Rat	470 mg/kg
Propane (CAS 74-98-6)		
Acute		
<i>Inhalation</i>		
LC50	Rat	> 1442.8 mg/L, 15 Minutes
<i>Oral</i>		
LD50	Not available	
Sodium metasilicate (CAS 6834-92-0)		
Acute		
<i>Dermal</i>		
LD50	Not available	
<i>Inhalation</i>		
LC50	Not available	
<i>Oral</i>		
LD50	Mouse	2400 mg/kg
	Rat	1153 mg/kg
Tetrasodium ethylenediamine tetraacetate (CAS 64-02-8)		
Acute		
<i>Dermal</i>		
LD50	Not available	
<i>Inhalation</i>		
LC50	Not available	
<i>Oral</i>		
LD50	Rat	1658 mg/kg

Skin corrosion/irritation	Not corrosive to skin based on in-vitro test data (OECD Guideline 435 - Corrositex®).		
Exposure minutes	Not available.		
Erythema value	Not available.		
Oedema value	Not available.		
Serious eye damage/eye irritation	Causes serious eye damage.		
Corneal opacity value	Not available.		
Iris lesion value	Not available.		
Conjunctival reddening value	Not available.		
Conjunctival oedema value	Not available.		
Recover days	Not available.		
Respiratory or skin sensitization			
Canada - Alberta OELs: Irritant			
Ethanol, 2-butoxy- (CAS 111-76-2)		Irritant	
Respiratory sensitization	Not available.		
Skin sensitization	This product is not expected to cause skin sensitization.		
Mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.		
Carcinogenicity	This product is not considered to be a carcinogen by IARC, NTP, or OSHA.		
ACGIH Carcinogens			
Ethanol, 2-butoxy- (CAS 111-76-2)		A3 Confirmed animal carcinogen with unknown relevance to humans.	
Canada - Manitoba OELs: carcinogenicity			
2-BUTOXYETHANOL (EGBE) (CAS 111-76-2)		Confirmed animal carcinogen with unknown relevance to humans.	
IARC Monographs. Overall Evaluation of Carcinogenicity			
Ethanol, 2-butoxy- (CAS 111-76-2)		Volume 88 - 3 Not classifiable as to carcinogenicity to humans.	
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)			
Not listed.			
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.		
Teratogenicity	Not available.		
Specific target organ toxicity - single exposure	Not classified.		
Specific target organ toxicity - repeated exposure	Not classified.		
Aspiration hazard	Not likely, due to the form of the product.		
Chronic effects	Prolonged inhalation may be harmful.		

12. Ecological Information

Ecotoxicity	See below		
Ecotoxicological data			
Components	Species		Test Results
Diethylene glycol monoethyl ether (CAS 111-90-0)			
Crustacea	EC50	Daphnia	4305 mg/L, 48 Hours
Aquatic			
Fish	LC50	Bluegill (Lepomis macrochirus)	> 10000 mg/L, 96 hours
Ethanol, 2-butoxy- (CAS 111-76-2)			
Crustacea	EC50	Daphnia	1819 mg/L, 48 Hours
Aquatic			
Fish	LC50	Inland silverside (Menidia beryllina)	1250 mg/L, 96 hours
Sodium metasilicate (CAS 6834-92-0)			
Aquatic			
Crustacea	EC50	Water flea (Ceriodaphnia dubia)	0.28 - 0.57 mg/L, 48 hours
Fish	LC50	Western mosquitofish (Gambusia affinis)	1800 mg/L, 96 hours
Tetrasodium ethylenediamine tetraacetate (CAS 64-02-8)			
Algae	EC50	Algae	1.01 mg/L, 72 Hours

Components	Species	Test Results
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna) 610 mg/L, 24 hours
Fish	LC50	Bluegill (Lepomis macrochirus) 472 - 500 mg/L, 96 hours
Persistence and degradability	No data is available on the degradability of this product.	
Bioaccumulative potential	No data available.	
Mobility in soil	No data available.	
Mobility in general	Not available.	
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.	

13. Disposal Considerations

Disposal instructions	Consult authorities before disposal. Contents under pressure. Do not puncture, incinerate or crush. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Do not re-use empty containers.

14. Transport Information

Transport of Dangerous Goods (TDG) Proof of Classification	In accordance with Part 2.2.1 (SOR/2014-152) of the Transportation of Dangerous Goods Regulations, we certify that the classification of this product is correct as of the SDS date of issue.
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U.S. Department of Transportation (DOT)

Basic shipping requirements:

UN number	UN1950
Proper shipping name	Aerosols, non-flammable, (each not exceeding 1 L capacity)
Hazard class	Limited Quantity - US
Packaging exceptions	306
Packaging non bulk	None
Packaging bulk	None

Transportation of Dangerous Goods (TDG - Canada)

Basic shipping requirements:

UN number	UN1950
Proper shipping name	AEROSOLS, non-flammable
Hazard class	Limited Quantity - Canada
Special provisions	80

IATA/ICAO (Air)

Basic shipping requirements:

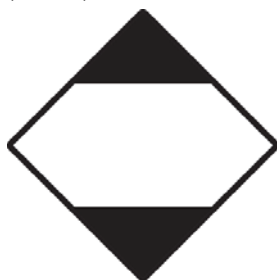
UN number	UN1950
Proper shipping name	Aerosols, non-flammable
Hazard class	Limited Quantity - IATA
ERG code	2L

IMDG (Marine Transport)

Basic shipping requirements:

UN number	UN1950
Proper shipping name	AEROSOLS
Hazard class	Limited Quantity - US

DOT; IMDG; TDG



IATA



15. Regulatory Information

Canadian federal regulations This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (SOR/2015-17) and the SDS contains all the information required by the HPR.

Canada CEPA Schedule I: Listed substance

Ethanol, 2-butoxy- (CAS 111-76-2) Listed.

Canada DSL Challenge Substances: Listed substance

Butane (CAS 106-97-8) Listed.

Canada NPRI VOCs with Additional Reporting Requirements: Mass reporting threshold/Identification Number

Butane (CAS 106-97-8) 1 TONNES

Ethanol, 2-butoxy- (CAS 111-76-2) 1 TONNES

Propane (CAS 74-98-6) 1 TONNES

Canada Priority Substances List (Second List): Listed substance

Ethanol, 2-butoxy- (CAS 111-76-2) Listed.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

WHMIS 2015 Exemptions Not applicable

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Butane (CAS 106-97-8) Listed.

Diethylene glycol monoethyl ether (CAS 111-90-0) Listed.

Ethanol, 2-butoxy- (CAS 111-76-2) Listed.

Propane (CAS 74-98-6) Listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes

Delayed Hazard - No

Fire Hazard - No

Pressure Hazard - Yes

Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Diethylene glycol monoethyl ether	111-90-0	1-5
Ethanol, 2-butoxy-	111-76-2	1-5

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Diethylene glycol monoethyl ether (CAS 111-90-0)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

**Clean Water Act (CWA) Hazardous substance
Section 112(r) (40 CFR
68.130)****US state regulations****US - California Hazardous Substances (Director's): Listed substance**

Butane (CAS 106-97-8) Listed.

Ethanol, 2-butoxy- (CAS 111-76-2) Listed.

US - Illinois Chemical Safety Act: Listed substance

Butane (CAS 106-97-8)

Diethylene glycol monoethyl ether (CAS 111-90-0)

Ethanol, 2-butoxy- (CAS 111-76-2)

Propane (CAS 74-98-6)

US - Louisiana Spill Reporting: Listed substance

Butane (CAS 106-97-8) Listed.

Diethylene glycol monoethyl ether (CAS 111-90-0) Listed.

Ethanol, 2-butoxy- (CAS 111-76-2) Listed.

Propane (CAS 74-98-6) Listed.

US - Minnesota Haz Subs: Listed substance

Butane (CAS 106-97-8) Listed.

Diethylene glycol monoethyl ether (CAS 111-90-0) Listed.

Ethanol, 2-butoxy- (CAS 111-76-2) Listed.

Propane (CAS 74-98-6) Listed.

US - New Jersey RTK - Substances: Listed substance

Butane (CAS 106-97-8)

Diethylene glycol monoethyl ether (CAS 111-90-0)

Ethanol, 2-butoxy- (CAS 111-76-2)

Propane (CAS 74-98-6)

US - Texas Effects Screening Levels Hazard Data: Simple asphyxiant

Propane (CAS 74-98-6)

US - Texas Effects Screening Levels: Listed substance

Butane (CAS 106-97-8) Listed.

Diethylene glycol monoethyl ether (CAS 111-90-0) Listed.

Ethanol, 2-butoxy- (CAS 111-76-2) Listed.

Propane (CAS 74-98-6) Listed.

Sodium metasilicate (CAS 6834-92-0) Listed.

Tetrasodium ethylenediamine tetraacetate (CAS 64-02-8) Listed.

US. Massachusetts RTK - Substance List

Butane (CAS 106-97-8)

Ethanol, 2-butoxy- (CAS 111-76-2)

Propane (CAS 74-98-6)

US. New Jersey Worker and Community Right-to-Know Act

Butane (CAS 106-97-8)

Diethylene glycol monoethyl ether (CAS 111-90-0)

Ethanol, 2-butoxy- (CAS 111-76-2)

Propane (CAS 74-98-6)

US. Pennsylvania Worker and Community Right-to-Know Law

Butane (CAS 106-97-8)

Diethylene glycol monoethyl ether (CAS 111-90-0)

Ethanol, 2-butoxy- (CAS 111-76-2)

Propane (CAS 74-98-6)

US. Rhode Island RTK

Butane (CAS 106-97-8)

Diethylene glycol monoethyl ether (CAS 111-90-0)

Ethanol, 2-butoxy- (CAS 111-76-2)

Propane (CAS 74-98-6)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

Inventory status

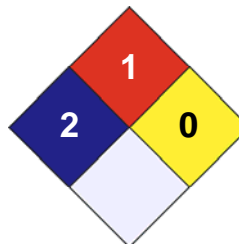
Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

LEGEND	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

HEALTH	/ 2
FLAMMABILITY	1
PHYSICAL HAZARD	0
PERSONAL PROTECTION	X

**Disclaimer**

The information in the sheet was written based on the best knowledge and experience currently available. Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

Issue date

10-June-2016

Version #

01

Effective date

10-June-2016

Prepared by

Nu-Calgon Technical Service Phone: (314) 469-7000

Other information

For an updated SDS, please contact the supplier/manufacturer listed on the first page of the document.



SAFETY DATA SHEET

1. Product and Company Identification

Product identifier	NU-BRITE (4291-01, 4291-05, 4291-08, 4891-08)
Other means of identification	Not available.
Recommended use	Coil Cleaner / Degreaser
Recommended restrictions	None known.
Manufacturer information	Nu-Calgon 2008 Altom Court St. Louis, MO 63146 US Phone: 314-469-7000 / 800-554-5499 Emergency Phone: 1-800-424-9300 (CHEMTREC)

2. Hazards Identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement May be corrosive to metals.
Causes severe skin burns and eye damage.

Precautionary statement

Prevention

Keep only in original container.
Do not breathe the mist or vapor. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

Response

Absorb spillage to prevent material damage.
If swallowed: Rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a poison center/doctor.
Specific treatment (see information on this label).

Storage

Store in corrosive resistant container with a resistant inner liner.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information Not applicable.

3. Composition/Information on Ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	%
Sodium hydroxide		1310-73-2	15-40
Alkyl polyglycoside		110615-47-9	1-5

Composition comments US GHS: The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

4. First Aid Measures

Inhalation	If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor/.
Skin contact	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Specific treatment (see information on this label). Immediately call a poison center/doctor/.
Eye contact	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor.
Ingestion	If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center/doctor/.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance. Use of an impervious apron is recommended. Avoid contact with eyes and skin. Wear rubber gloves and chemical splash goggles. Keep out of reach of children.

5. Fire Fighting Measures

Suitable extinguishing media	Treat for surrounding material.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Firefighters should wear a self-contained breathing apparatus.
Special protective equipment and precautions for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus.
Fire-fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
Hazardous combustion products	May include and are not limited to: Oxides of carbon.
Explosion data	
Sensitivity to mechanical impact	No.
Sensitivity to static discharge	No.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep out of low areas. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	<p>Large Spills: Stop leak if you can do so without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.</p> <p>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use.</p> <p>Never return spills to original containers for re-use.</p>
Environmental precautions	Avoid discharge into drains, water courses or onto the ground. Do not discharge into lakes, streams, ponds or public waters.

7. Handling and Storage

Precautions for safe handling	Avoid prolonged exposure. Wear appropriate personal protective equipment. Wash thoroughly after handling. Ensure adequate ventilation. Do not get in eyes, on skin or on clothing. Use good industrial hygiene practices in handling this material. Keep container tightly closed. Avoid breathing vapors or mists of this product.
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Conditions for safe storage, including any incompatibilities

Store locked up. Store in corrosive resistant container with a resistant inner liner. Store in a closed container away from incompatible materials. Keep only in the original container. Store in a cool, dry place out of direct sunlight. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure Controls/Personal Protection

Occupational exposure limits**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	PEL	2 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Chemicals listed in section 3 that are not listed here do not have established limit values for ACGIH.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Wear chemical goggles.

Skin protection**Hand protection**

Rubber gloves. Confirm with a reputable supplier first.

Other

Wear appropriate chemical resistant clothing. As required by employer code. Rubber apron recommended.

Respiratory protection

Wear positive pressure self-contained breathing apparatus (SCBA). Avoid breathing mists or vapors.
Where exposure guideline levels may be exceeded, use an approved NIOSH respirator.

Thermal hazards

Not applicable.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Wash hands before breaks and immediately after handling the product.

9. Physical and Chemical Properties

Appearance	Liquid
Physical state	Liquid.
Form	Liquid.
Color	Blue
Odor	Characteristic, Mild
Odor threshold	Not available.
pH	12.7 (1%) 14 (Concentrate)
Melting point/freezing point	32 °F (0 °C)
Initial boiling point and boiling range	212 °F (100 °C)
Pour point	Not available.
Specific gravity	1.24
Partition coefficient (n-octanol/water)	Not available
Flash point	None to boiling
Evaporation rate	Equal to water
Flammability (solid, gas)	Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available
Flammability limit - upper (%)	Not available
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available
Vapor density	Not available
Relative density	Not available.
Solubility(ies)	Complete
Auto-ignition temperature	Not available
Decomposition temperature	Not available.
Viscosity	Water thin
Other information	
Bulk density	10.36 lb/gal
VOC (Weight %)	None

10. Stability and Reactivity

Reactivity	Reacts violently with acids. This product may react with oxidizing agents.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Chemical stability	Stable under recommended storage conditions.
Conditions to avoid	Do not mix with other chemicals. Hazardous vapours may be produced when mixed with chlorinated detergents or sanitizers.
Incompatible materials	Oxidizing agents. Acids.
Hazardous decomposition products	May include and are not limited to: Oxides of carbon.

11. Toxicological Information

Routes of exposure	Eye, Skin contact, Inhalation, Ingestion.
Information on likely routes of exposure	
Ingestion	Causes digestive tract burns.
Inhalation	Prolonged inhalation may be harmful. May cause irritation to the respiratory system.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects**Acute toxicity**

Components	Species	Test Results
Alkyl polyglycoside (CAS 110615-47-9)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Inhalation</i>		
LC50	Not available	
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg
Sodium hydroxide (CAS 1310-73-2)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	1350 mg/kg

Components	Species	Test Results
<i>Inhalation</i>		
LC50	Not available	
<i>Oral</i>		
LD50	Not available	
Skin corrosion/irritation	Causes severe skin burns and eye damage.	
Exposure minutes	Not available.	
Erythema value	Not available.	
Oedema value	Not available.	
Serious eye damage/eye irritation	Causes serious eye damage.	
Corneal opacity value	Not available.	
Iris lesion value	Not available.	
Conjunctival reddening value	Not available.	
Conjunctival oedema value	Not available.	
Recover days	Not available.	
Respiratory or skin sensitization		
Respiratory sensitization	Not available.	
Skin sensitization	This product is not expected to cause skin sensitization.	
Germ cell mutagenicity	Non-hazardous by WHMIS/OSHA criteria.	
Mutagenicity	Non-hazardous by WHMIS/OSHA criteria.	
Carcinogenicity	Non-hazardous by WHMIS/OSHA criteria.	
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		
Not listed.		
Reproductive toxicity	Non-hazardous by WHMIS/OSHA criteria.	
Teratogenicity	Non-hazardous by WHMIS/OSHA criteria.	
Specific target organ toxicity - single exposure	Not classified.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	Not available.	
Chronic effects	Prolonged inhalation may be harmful. Non-hazardous by WHMIS/OSHA criteria.	
Further information	Not available.	
Name of Toxicologically Synergistic Products	Not available.	

12. Ecological Information

Ecotoxicity	Components of this product have been identified as having potential environmental concerns. See below		
Ecotoxicological data			
Components	Species		Test Results
Sodium hydroxide (CAS 1310-73-2)			
Aquatic			
Crustacea	EC50	Water flea (Ceriodaphnia dubia)	34.59 - 47.13 mg/L, 48 hours
Fish	LC50	Western mosquitofish (Gambusia affinis)	125 mg/L, 96 hours
Persistence and degradability	No data is available on the degradability of this product.		
Bioaccumulative potential	No data available.		
Mobility in soil	No data available.		
Mobility in general	Not available.		
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.		

13. Disposal Considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

General	Canada: TDG Proof of Classification: In accordance with Part 2.2.1 (SOR/2014-152) of the Transportation of Dangerous Goods Regulations, we certify that the classification of this product is correct as of the SDS date of issue. If applicable, the technical name and the classification of the product will appear below.
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U.S. Department of Transportation (DOT)

Basic shipping requirements:

UN number	UN3266
Proper shipping name	Corrosive liquid, basic, inorganic, n.o.s.
Technical name	Sodium hydroxide
Hazard class	8
Packing group	II
Special provisions	B2, IB2, T11, TP2, TP27
Packaging exceptions	154
Packaging non bulk	202
Packaging bulk	242

Transportation of Dangerous Goods (TDG - Canada)

Basic shipping requirements:

UN number	UN3266
Proper shipping name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.
Technical name	SODIUM HYDROXIDE
Hazard class	8
Packing group	II
Special provisions	16
Packaging exceptions	<1L - Limited Quantity

IATA/ICAO (Air)

Basic shipping requirements:

UN number	UN3266
Proper shipping name	Corrosive liquid, basic, inorganic, n.o.s.
Technical name	Sodium hydroxide
Hazard class	8
Packing group	II

IMDG (Marine Transport)

Basic shipping requirements:

UN number	UN3266
Proper shipping name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.
Technical name	Sodium hydroxide
Hazard class	8
Packing group	II

DOT



IATA; IMDG; TDG



15. Regulatory Information

Canadian federal regulations This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

WHMIS status

Controlled

WHMIS classification

Class E - Corrosive Material

WHMIS labeling



US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Sodium hydroxide (CAS 1310-73-2) Listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

No

SARA 311/312 Hazardous chemical

No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)

Hazardous substance

Safe Drinking Water Act (SDWA)

Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Not listed.

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Not regulated.

DEA Exempt Chemical Mixtures Code Number

Not regulated.

Food and Drug Administration (FDA)

Not regulated.

US state regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - Illinois Chemical Safety Act: Listed substance

Sodium hydroxide (CAS 1310-73-2)

US - Minnesota Haz Subs: Listed substance

Sodium hydroxide (CAS 1310-73-2) SODIUM HYDROXIDE

US - New Jersey RTK - Substances: Listed substance

Sodium hydroxide (CAS 1310-73-2)

US - New York Release Reporting: Hazardous Substances: Listed substance

Sodium hydroxide (CAS 1310-73-2) SODIUM HYDROXIDE

US - New York Release Reporting: Hazardous Substances: Reportable quantity for releases to air

Sodium hydroxide (CAS 1310-73-2) SODIUM HYDROXIDE

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

Sodium hydroxide (CAS 1310-73-2)

US. New Jersey Worker and Community Right-to-Know Act

Not regulated.

US. Pennsylvania RTK - Hazardous Substances

Sodium hydroxide (CAS 1310-73-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Sodium hydroxide (CAS 1310-73-2)

US. Rhode Island RTK

Sodium hydroxide (CAS 1310-73-2)

Inventory status

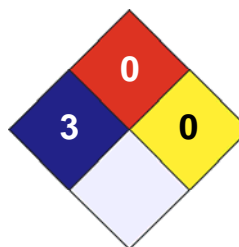
Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

LEGEND	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

HEALTH	/ 3
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	X



Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

Issue date

10-February-2016

Effective date

10-February-2016

Expiry date

10-February-2019

Further information

For an updated SDS, please contact the supplier/manufacturer listed on the first page of the document.

Prepared by

Nu-Calgon Technical Service Phone: (314) 469-7000

Other information

This Safety Data Sheet was prepared to comply with the current OSHA Hazard Communication Standard (HCS) adoption of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).



SAFETY DATA SHEET

1. Identification

Product identifier Oatey No. 95 Tinning Flux

Other means of identification

SDS number 1611E

Synonyms Part Numbers: 30372, 30373, 30374, 30375, 53201, 48356, 48430, 48432, 48433

Recommended use Joining Copper Pipes. Joining Copper Tubing.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name Oatey Co.

Address 4700 West 160th St.
Cleveland, OH 44135

Telephone 216-267-7100

E-mail info@oatey.com

Transport Emergency Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)

Emergency First Aid 1-877-740-5015

Contact person MSDS Coordinator

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Skin corrosion/irritation Category 1B
Serious eye damage/eye irritation Category 1

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Causes severe skin burns and eye damage.

Precautionary statement

Prevention Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dusts or mists.

Response If swallowed: Rinse mouth. Do not induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Petrolatum	8009-03-8	60-70

Zinc chloride	7646-85-7	10-30
Tin	7440-31-5	4-8
Ammonium chloride	12125-02-9	1-5
Bismuth	7440-69-9	0-1
Copper	7440-50-8	0-1

4. First-aid measures

Inhalation	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Continue rinsing. Call a physician or poison control center immediately. Remove contact lenses, if present and easy to do.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water spray. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Use water spray to cool unopened containers.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike far ahead of spill for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid prolonged exposure. Do not get this material on clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Petrolatum (CAS 8009-03-8)	PEL	5 mg/m3	Mist.
Tin (CAS 7440-31-5)	PEL	2 mg/m3	
Zinc chloride (CAS 7646-85-7)	PEL	1 mg/m3	Fume.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Ammonium chloride (CAS 12125-02-9)	STEL	20 mg/m3	Fume.
	TWA	10 mg/m3	Fume.
Petrolatum (CAS 8009-03-8)	TWA	5 mg/m3	Inhalable fraction.
Tin (CAS 7440-31-5)	TWA	2 mg/m3	
Zinc chloride (CAS 7646-85-7)	STEL	2 mg/m3	Fume.
	TWA	1 mg/m3	Fume.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Ammonium chloride (CAS 12125-02-9)	STEL	20 mg/m3	Fume.
	TWA	10 mg/m3	Fume.
Petrolatum (CAS 8009-03-8)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.
Tin (CAS 7440-31-5)	TWA	2 mg/m3	
Zinc chloride (CAS 7646-85-7)	STEL	2 mg/m3	Fume.
	TWA	1 mg/m3	Fume.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Occupational Exposure Limits are not relevant to the current physical form of the product.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state

Solid.

Form

Solid. Paste.

Color

Yellow.

Odor

Slight.

Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	638.6 °F (337 °C)
Flash point	539.6 °F (282.0 °C)
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	> 1
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful. May cause irritation to the respiratory system.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns.

Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
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Information on toxicological effects

Acute toxicity	
Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity None known.

IARC Monographs. Overall Evaluation of Carcinogenicity

Petrolatum (CAS 8009-03-8)

3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not available.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Ammonium chloride (CAS 12125-02-9)

LISTED

Zinc chloride (CAS 7646-85-7)

LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)**Hazard categories**

Immediate Hazard - Yes

Delayed Hazard - No

Fire Hazard - No

Pressure Hazard - No

Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Zinc chloride	7646-85-7	10-30
Ammonium chloride	12125-02-9	1-5

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations**US. Massachusetts RTK - Substance List**

Ammonium chloride (CAS 12125-02-9)

Petrolatum (CAS 8009-03-8)

Tin (CAS 7440-31-5)

Zinc chloride (CAS 7646-85-7)

US. New Jersey Worker and Community Right-to-Know Act

Ammonium chloride (CAS 12125-02-9)

Petrolatum (CAS 8009-03-8)

Tin (CAS 7440-31-5)

Zinc chloride (CAS 7646-85-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Ammonium chloride (CAS 12125-02-9)

Petrolatum (CAS 8009-03-8)

Tin (CAS 7440-31-5)

Zinc chloride (CAS 7646-85-7)

US. Rhode Island RTK

Ammonium chloride (CAS 12125-02-9)

Zinc chloride (CAS 7646-85-7)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 27-October-2014

Revision date 19-February-2015

Version # 03

HMIS® ratings Health: 3
Flammability: 0
Physical hazard: 0

Disclaimer The information in the sheet was written based on the best knowledge and experience currently available. Oatey Co. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for use, handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.

1. Identification

Product identifier	All-Temp
Other means of identification	
Product code	3105E
Synonyms	Part Numbers: 018301, 018311, 018323, 018326, 018328, 018331, 018334, 018335, 018340, 018341, 018342, 018320, 018320, 018322, 018324, 018325, 018330, 018332, 018333, 018336, 018337, 018339, MVC9982, MVC9983, MVC9984, MVC9985, 618320, 618330
Recommended use	Joining PVC Pipes
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Company Name	William H. Harvey Company
Address	4334 South 67th Street Omaha, NE 68117
Telephone	402-331-1175
E-mail	info@oatey.com
Transport Emergency	Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)
Emergency First Aid	1-877-740-5015
Contact person	MSDS Coordinator

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Aspiration hazard	Category 1
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	Highly flammable liquid and vapor. Harmful if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.
Precautionary statement	
Prevention	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

Response	If swallowed: Immediately call a poison center/doctor. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. Rinse mouth. Do NOT induce vomiting. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish.
Storage	Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. May form explosive peroxides. Contains a chemical classified by the US EPA as a suspected possible carcinogen.
Supplemental information	Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Furan, Tetrahydro-	109-99-9	35-55
Acetone	67-64-1	10-25
Polyvinyl chloride	9002-86-2	12-20
Cyclohexanone	108-94-1	10-20
Silica, amorphous, fumed	112945-52-5	1-5

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis.
Most important symptoms/effects, acute and delayed	Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Highly flammable liquid and vapor. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water. Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Vapors may form explosive mixtures with air. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Components	Type	Value
Polyvinyl chloride (CAS 9002-86-2)	STEL	5 ppm
	TWA	1 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Acetone (CAS 67-64-1)	PEL	2400 mg/m3	
		1000 ppm	
Cyclohexanone (CAS 108-94-1)	PEL	200 mg/m3	
		50 ppm	
Furan, Tetrahydro- (CAS 109-99-9)	PEL	590 mg/m3	
		200 ppm	
Polyvinyl chloride (CAS 9002-86-2)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value
Silica, amorphous, fumed (CAS 112945-52-5)	TWA	0.8 mg/m3
		20 mppcf

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Acetone (CAS 67-64-1)	STEL	750 ppm	
	TWA	500 ppm	
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm	
	TWA	20 ppm	
Furan, Tetrahydro- (CAS 109-99-9)	STEL	100 ppm	
	TWA	50 ppm	
Polyvinyl chloride (CAS 9002-86-2)	TWA	1 mg/m3	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Acetone (CAS 67-64-1)	TWA	590 mg/m3
		250 ppm
Cyclohexanone (CAS 108-94-1)	TWA	100 mg/m3
		25 ppm
Furan, Tetrahydro- (CAS 109-99-9)	STEL	735 mg/m3
		250 ppm
	TWA	590 mg/m3
		200 ppm
Silica, amorphous, fumed (CAS 112945-52-5)	TWA	6 mg/m3

Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	50 mg/l	Acetone	Urine	*
Cyclohexanone (CAS 108-94-1)	80 mg/l	1,2-Cyclohexanediol, with hydrolysis	Urine	*
	8 mg/l	Cyclohexanol, with hydrolysis	Urine	*
Furan, Tetrahydro- (CAS 109-99-9)	2 mg/l	Tetrahydrofuran	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines**US - California OELs: Skin designation**

Cyclohexanone (CAS 108-94-1) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Cyclohexanone (CAS 108-94-1) Skin designation applies.

US - Tennessee OELs: Skin designation

Cyclohexanone (CAS 108-94-1) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Cyclohexanone (CAS 108-94-1) Can be absorbed through the skin.

Furan, Tetrahydro- (CAS 109-99-9) Can be absorbed through the skin.

US. NIOSH: Pocket Guide to Chemical Hazards

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

Face shield is recommended. Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state

Liquid.

Form

Translucent liquid.

Color

Gray.

Odor

Solvent.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

Not available.

Initial boiling point and boiling range

151 °F (66.11 °C)

Flash point

-4.0 °F (-20.0 °C)

Evaporation rate

5.5 - 8

Flammability (solid, gas)

Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)

1.8

Flammability limit - upper (%)

11.8

Explosive limit - lower (%)

Not available.

Explosive limit - upper (%)

Not available.

Vapor pressure

145 mm Hg @ 20 °C

Vapor density

2.5

Relative density

0.95 +/- 0.02

Solubility(ies)

Solubility (water)

Negligible

Partition coefficient (n-octanol/water)

Not available.

Auto-ignition temperature

Not available.

Decomposition temperature

Not available.

Viscosity

600 - 1500 cP

Other information

VOC (Weight %)

423 g/l SCAQMD 1168/M316A

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Ammonia. Amines. Isocyanates. Caustics.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May be fatal if swallowed and enters airways. Headache. Nausea, vomiting. May cause irritation to the respiratory system. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	May be fatal if swallowed and enters airways. Harmful if swallowed. Harmful if swallowed. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Symptoms related to the physical, chemical and toxicological characteristics Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways. Narcotic effects. May cause respiratory irritation.

Components	Species	Test Results
Acetone (CAS 67-64-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	20 ml/kg
<i>Inhalation</i>		
LC50	Rat	50 mg/l, 8 Hours
<i>Oral</i>		
LD50	Rat	5800 mg/kg
Cyclohexanone (CAS 108-94-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	948 mg/kg
<i>Inhalation</i>		
LC50	Rat	8000 ppm, 4 hours
<i>Oral</i>		
LD50	Rat	1540 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

In 2012 USEPA Integrated Risk Information System (IRIS) reviewed a two species inhalation lifetime study on THF conducted by NTP (1998). Male rats developed renal tumors and female mice developed liver tumors while neither the female rats nor the male mice showed similar results. Because the carcinogenic mechanisms could not be identified clearly in either species for either tumor, the EPA determined that the male rat and female mouse findings are relevant to the assessment of carcinogenic potential in humans. Therefore, the IRIS review concludes that these data in aggregate indicate that there is "suggestive evidence of carcinogenic potential" following exposure to THF by all routes of exposure.

IARC Monographs. Overall Evaluation of Carcinogenicity

Cyclohexanone (CAS 108-94-1)	3 Not classifiable as to carcinogenicity to humans.
Polyvinyl chloride (CAS 9002-86-2)	3 Not classifiable as to carcinogenicity to humans.
Silica, amorphous, fumed (CAS 112945-52-5)	3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Polyvinyl chloride (CAS 9002-86-2)	Cancer
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Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Narcotic effects. May cause drowsiness and dizziness. Respiratory tract irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	May be fatal if swallowed and enters airways.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
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Components	Species	Test Results
Acetone (CAS 67-64-1)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) > 100 mg/l, 96 hours
Cyclohexanone (CAS 108-94-1)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) 481 - 578 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability	No data is available on the degradability of this product.
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Bioaccumulative potential	No data available.
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Partition coefficient n-octanol / water (log Kow)

Acetone (CAS 67-64-1)	-0.24
Cyclohexanone (CAS 108-94-1)	0.81
Furan, Tetrahydro- (CAS 109-99-9)	0.46

Mobility in soil	No data available.
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Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.
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13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1993
UN proper shipping name	Flammable liquids, n.o.s. (Acetone RQ = 25934 LBS)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB2, T7, TP1, TP8, TP28
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1993
UN proper shipping name	Flammable liquid, n.o.s. (Acetone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	3H
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (Acetone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to
Annex II of MARPOL 73/78 and
the IBC Code

Not available.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Polyvinyl chloride (CAS 9002-86-2)	Cancer
	Central nervous system
	Liver
	Blood
	Flammability

CERCLA Hazardous Substance List (40 CFR 302.4)

Acetone (CAS 67-64-1)	LISTED
Cyclohexanone (CAS 108-94-1)	LISTED
Furan, Tetrahydro- (CAS 109-99-9)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Acetone (CAS 67-64-1) 6532

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Acetone (CAS 67-64-1) 35 %WV

DEA Exempt Chemical Mixtures Code Number

Acetone (CAS 67-64-1) 6532

US state regulations**US. Massachusetts RTK - Substance List**

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)
Silica, amorphous, fumed (CAS 112945-52-5)

US. New Jersey Worker and Community Right-to-Know Act

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)
Polyvinyl chloride (CAS 9002-86-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)
Silica, amorphous, fumed (CAS 112945-52-5)

US. Rhode Island RTK

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 27-May-2015
Revision date -
Version # 01
HMIS® ratings Health: 2
Flammability: 3
Physical hazard: 0

NFPA ratings



Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. William H. Harvey Company cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.

1. Identification

Product identifier	Harvey's Purple Primer
Other means of identification	
Product code	3402E
Synonyms	Part Numbers: 018255, 018256, 018267, 019002, 018003, 019038, 019041, 019044, 019045, 019046, 019048, 019049, 019050, 019051, 019052, 019053, 019054, 019055, 019056, 019057, 019060, 019062, 019063, 019064, 019065, 019066, 019067, 019068, 019069, 019070, 019071, 019072, 019073, 019074, 019075, 019076, 019077, 019078, 019079, 019080, 019081, 019082, 019083, 019084, 019085, 019086, 019087, 019089, 019090, 019091, 019092, 019093, 019094, 019095, 019097, 019098, 019099, 019157, 019171, 019172, 019173, 019190, 019200, 019201, 019202, 019205, 019505, 019511, 019716, 019717, 405163, 458457, 458465, B15944, B15944A, B15944D, B15944F, MVP9912, MVP9913, MVP9914, PV019038, PV019041, PV019205
Recommended use	Joining PVC Pipes
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Company Name	William H. Harvey Company
Address	4334 South 67th Street Omaha, NE 68117
Telephone	402-331-1175
E-mail	info@oatey.com
Transport Emergency	Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)
Emergency First Aid	1-877-740-5015
Contact person	MSDS Coordinator

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Aspiration hazard	Category 1
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	Highly flammable liquid and vapor. Harmful if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.
Precautionary statement	
Prevention	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

Response	If swallowed: Immediately call a poison center/doctor. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. Rinse mouth. Do NOT induce vomiting. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish.
Storage	Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. May form explosive peroxides. Contains a chemical classified by the US EPA as a suspected possible carcinogen.
Supplemental information	Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Acetone	67-64-1	25-40
Cyclohexanone	108-94-1	25-40
Furan, Tetrahydro-	109-99-9	15-30
Methyl ethyl ketone	78-93-3	15-30

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis.
Most important symptoms/effects, acute and delayed	Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

Highly flammable liquid and vapor. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

6. Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water.

Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

Environmental precautions**7. Handling and storage****Precautions for safe handling**

Vapors may form explosive mixtures with air. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection**Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value
Acetone (CAS 67-64-1)	PEL	2400 mg/m3 1000 ppm
Cyclohexanone (CAS 108-94-1)	PEL	200 mg/m3 50 ppm
Furan, Tetrahydro- (CAS 109-99-9)	PEL	590 mg/m3 200 ppm
Methyl ethyl ketone (CAS 78-93-3)	PEL	590 mg/m3 200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Acetone (CAS 67-64-1)	STEL	750 ppm
	TWA	500 ppm
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm
	TWA	20 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Furan, Tetrahydro- (CAS 109-99-9)	STEL	100 ppm
	TWA	50 ppm
Methyl ethyl ketone (CAS 78-93-3)	STEL	300 ppm
	TWA	200 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Acetone (CAS 67-64-1)	TWA	590 mg/m3 250 ppm
Cyclohexanone (CAS 108-94-1)	TWA	100 mg/m3 25 ppm
Furan, Tetrahydro- (CAS 109-99-9)	STEL	735 mg/m3 250 ppm
	TWA	590 mg/m3 200 ppm
Methyl ethyl ketone (CAS 78-93-3)	STEL	885 mg/m3 300 ppm
	TWA	590 mg/m3 200 ppm

Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	50 mg/l	Acetone	Urine	*
Cyclohexanone (CAS 108-94-1)	80 mg/l	1,2-Cyclohexanediol, with hydrolysis	Urine	*
	8 mg/l	Cyclohexanol, with hydrolysis	Urine	*
Furan, Tetrahydro- (CAS 109-99-9)	2 mg/l	Tetrahydrofuran	Urine	*
Methyl ethyl ketone (CAS 78-93-3)	2 mg/l	MEK	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines**US - California OELs: Skin designation**

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Cyclohexanone (CAS 108-94-1)

Skin designation applies.

US - Tennessee OELs: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

Furan, Tetrahydro- (CAS 109-99-9)

Can be absorbed through the skin.

US. NIOSH: Pocket Guide to Chemical Hazards

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection	Face shield is recommended. Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties**Appearance**

Physical state	Liquid.
Form	Translucent liquid.
Color	Purple
Odor	Solvent.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	151 °F (66.11 °C)
Flash point	14.0 - 23.0 °F (-10.0 - -5.0 °C)
Evaporation rate	5.5 - 8
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	1.8
Flammability limit - upper (%)	11.8
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	145 mm Hg @ 20 C
Vapor density	2.5
Relative density	0.84 +/- 0.02 @20°C
Solubility(ies)	
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Bulk density	7 lb/gal
VOC (Weight %)	505 g/l SQACMD Method 24

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.

Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Ammonia. Amines. Isocyanates. Caustics.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May be fatal if swallowed and enters airways. Headache. Nausea, vomiting. May cause irritation to the respiratory system. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	May be fatal if swallowed and enters airways. Harmful if swallowed. Harmful if swallowed. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Symptoms related to the physical, chemical and toxicological characteristics	Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
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Information on toxicological effects

Acute toxicity	May be fatal if swallowed and enters airways. Narcotic effects. May cause respiratory irritation.
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Components	Species	Test Results
Acetone (CAS 67-64-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	20 ml/kg
<i>Inhalation</i>		
LC50	Rat	50 mg/l, 8 Hours
<i>Oral</i>		
LD50	Rat	5800 mg/kg
Cyclohexanone (CAS 108-94-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	948 mg/kg
<i>Inhalation</i>		
LC50	Rat	8000 ppm, 4 hours
<i>Oral</i>		
LD50	Rat	1540 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

In 2012 USEPA Integrated Risk Information System (IRIS) reviewed a two species inhalation lifetime study on THF conducted by NTP (1998). Male rats developed renal tumors and female mice developed liver tumors while neither the female rats nor the male mice showed similar results. Because the carcinogenic mechanisms could not be identified clearly in either species for either tumor, the EPA determined that the male rat and female mouse findings are relevant to the assessment of carcinogenic potential in humans. Therefore, the IRIS review concludes that these data in aggregate indicate that there is "suggestive evidence of carcinogenic potential" following exposure to THF by all routes of exposure.

IARC Monographs. Overall Evaluation of Carcinogenicity

Cyclohexanone (CAS 108-94-1)

3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity

This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure

Narcotic effects. May cause drowsiness and dizziness. Respiratory tract irritation.

Specific target organ toxicity - repeated exposure

Not classified.

Aspiration hazard

May be fatal if swallowed and enters airways.

Chronic effects

Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test Results
Acetone (CAS 67-64-1)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) > 100 mg/l, 96 hours
Cyclohexanone (CAS 108-94-1)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) 481 - 578 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability

No data is available on the degradability of this product.

Bioaccumulative potential

No data available.

Partition coefficient n-octanol / water (log Kow)

Acetone (CAS 67-64-1)	-0.24
Cyclohexanone (CAS 108-94-1)	0.81
Furan, Tetrahydro- (CAS 109-99-9)	0.46
Methyl ethyl ketone (CAS 78-93-3)	0.29

Mobility in soil

No data available.

Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1993
UN proper shipping name	Flammable liquids, n.o.s. (Methyl ethyl ketone RQ = 26274 LBS, Acetone RQ = 13130 LBS)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB2, T7, TP1, TP8, TP28
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1993
UN proper shipping name	Flammable liquid, n.o.s. (Methyl ethyl ketone, Acetone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	3H
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (Methyl ethyl ketone, Acetone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to
Annex II of MARPOL 73/78 and
the IBC Code

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Acetone (CAS 67-64-1)	LISTED
Cyclohexanone (CAS 108-94-1)	LISTED
Furan, Tetrahydro- (CAS 109-99-9)	LISTED
Methyl ethyl ketone (CAS 78-93-3)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No
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SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No**SARA 313 (TRI reporting)**

Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.**Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number**

Acetone (CAS 67-64-1) 6532

Methyl ethyl ketone (CAS 78-93-3) 6714

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Acetone (CAS 67-64-1) 35 %WV

Methyl ethyl ketone (CAS 78-93-3) 35 %WV

DEA Exempt Chemical Mixtures Code Number

Acetone (CAS 67-64-1) 6532

Methyl ethyl ketone (CAS 78-93-3) 6714

US state regulations**US. Massachusetts RTK - Substance List**

Acetone (CAS 67-64-1)

Cyclohexanone (CAS 108-94-1)

Furan, Tetrahydro- (CAS 109-99-9)

Methyl ethyl ketone (CAS 78-93-3)

US. New Jersey Worker and Community Right-to-Know Act

Acetone (CAS 67-64-1)

Cyclohexanone (CAS 108-94-1)

Furan, Tetrahydro- (CAS 109-99-9)

Methyl ethyl ketone (CAS 78-93-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Acetone (CAS 67-64-1)

Cyclohexanone (CAS 108-94-1)

Furan, Tetrahydro- (CAS 109-99-9)

Methyl ethyl ketone (CAS 78-93-3)

US. Rhode Island RTK

Acetone (CAS 67-64-1)

Cyclohexanone (CAS 108-94-1)

Furan, Tetrahydro- (CAS 109-99-9)

Methyl ethyl ketone (CAS 78-93-3)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision**Issue date** 27-May-2015**Revision date** -

Version #
HMIS® ratings

01
Health: 2
Flammability: 3
Physical hazard: 0

NFPA ratings



Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. William H. Harvey Company cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.



SAFETY DATA SHEET

1. Identification

Product identifier	Oatey Purple Primer Cleaner
Other means of identification	
Product code	1401E
Synonyms	Part Numbers: 30780, 30783, 30796, 30768, 30806, 30769
Recommended use	Joining PVC Pipes
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Company Name	Oatey Co.
Address	4700 West 160th St. Cleveland, OH 44135
Telephone	216-267-7100
E-mail	info@oatey.com
Transport Emergency	Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)
Emergency First Aid	1-877-740-5015
Contact person	MSDS Coordinator

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Serious eye damage/eye irritation	Category 2A
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Aspiration hazard	Category 1
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	Highly flammable liquid and vapor. Harmful if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.
Precautionary statement	
Prevention	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear eye protection/face protection. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Immediately call a poison center/doctor. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. Rinse mouth. Do NOT induce vomiting. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish.
Storage	Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.

Disposal
Hazard(s) not otherwise classified (HNOC)

Dispose of contents/container in accordance with local/regional/national/international regulations.
Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

Supplemental information
Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Acetone	67-64-1	70-100
Cyclohexanone	108-94-1	1-5

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting. Aspiration may cause pulmonary edema and pneumonitis. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Highly flammable liquid and vapor. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
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Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water.

Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

Environmental precautions**7. Handling and storage****Precautions for safe handling**

Vapors may form explosive mixtures with air. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist or vapor. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection**Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value
Acetone (CAS 67-64-1)	PEL	2400 mg/m3 1000 ppm
Cyclohexanone (CAS 108-94-1)	PEL	200 mg/m3 50 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Acetone (CAS 67-64-1)	STEL	750 ppm
	TWA	500 ppm
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm
	TWA	20 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Acetone (CAS 67-64-1)	TWA	590 mg/m3 250 ppm
Cyclohexanone (CAS 108-94-1)	TWA	100 mg/m3 25 ppm

Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	50 mg/l	Acetone	Urine	*

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Cyclohexanone (CAS 108-94-1)	80 mg/l	1,2-Cyclohexanediol, with hydrolysis	Urine	*
	8 mg/l	Cyclohexanol, with hydrolysis	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Cyclohexanone (CAS 108-94-1)

Skin designation applies.

US - Tennessee OELs: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

US. NIOSH: Pocket Guide to Chemical Hazards

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state

Liquid.

Form

Translucent liquid.

Color

Purple

Odor

Solvent.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

Not available.

Initial boiling point and boiling range

133 °F (56.11 °C)

Flash point

-4.0 °F (-20.0 °C)

Evaporation rate

Not available.

Flammability (solid, gas)

Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)

Not available.

Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	145 mm Hg @ 20 C
Vapor density	2.5
Relative density	0.79 +/- 0.02
Solubility(ies)	
Solubility (water)	Miscible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	< 10 cP
Other information	
Bulk density	7 lb/gal
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
VOC (Weight %)	180 g/l SQACMD Method 24

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Ammonia. Amines. Isocyanates. Caustics.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May be fatal if swallowed and enters airways. Headache. Nausea, vomiting. May cause irritation to the respiratory system. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Causes serious eye irritation.
Ingestion	May be fatal if swallowed and enters airways. Harmful if swallowed. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Symptoms related to the physical, chemical and toxicological characteristics	Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. May cause redness and pain.
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Information on toxicological effects

Acute toxicity	May be fatal if swallowed and enters airways. Narcotic effects. May cause respiratory irritation.
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Components	Species	Test Results
Acetone (CAS 67-64-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	20 ml/kg
<i>Inhalation</i>		
LC50	Rat	50 mg/l, 8 Hours

Components	Species	Test Results
Oral LD50	Rat	5800 mg/kg
Cyclohexanone (CAS 108-94-1)		
Acute		
Dermal LD50	Rabbit	948 mg/kg
Inhalation LC50	Rat	8000 ppm, 4 hours
Oral LD50	Rat	1540 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Cyclohexanone (CAS 108-94-1) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Narcotic effects. May cause drowsiness and dizziness. Respiratory tract irritation.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test Results
Acetone (CAS 67-64-1)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) > 100 mg/l, 96 hours
Cyclohexanone (CAS 108-94-1)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) 481 - 578 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

Acetone (CAS 67-64-1) -0.24

Cyclohexanone (CAS 108-94-1) 0.81

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1993
UN proper shipping name	Flammable liquids, n.o.s. (Acetone RQ = 5128 LBS)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB2, T7, TP1, TP8, TP28
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1993
UN proper shipping name	Flammable liquid, n.o.s. (Acetone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	3H
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (Acetone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.
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TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Acetone (CAS 67-64-1)	LISTED
Cyclohexanone (CAS 108-94-1)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes
	Delayed Hazard - No
	Fire Hazard - Yes
	Pressure Hazard - No
	Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	No
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SARA 313 (TRI reporting)

Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)	Not regulated.
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Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Acetone (CAS 67-64-1)	6532
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Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Acetone (CAS 67-64-1)	35 %WV
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DEA Exempt Chemical Mixtures Code Number

Acetone (CAS 67-64-1)	6532
-----------------------	------

US state regulations**US. Massachusetts RTK - Substance List**

Acetone (CAS 67-64-1)	
Cyclohexanone (CAS 108-94-1)	

US. New Jersey Worker and Community Right-to-Know Act

Acetone (CAS 67-64-1)	
Cyclohexanone (CAS 108-94-1)	

US. Pennsylvania Worker and Community Right-to-Know Law

Acetone (CAS 67-64-1)	
Cyclohexanone (CAS 108-94-1)	

US. Rhode Island RTK

Acetone (CAS 67-64-1)	
Cyclohexanone (CAS 108-94-1)	

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	27-May-2015
Revision date	-
Version #	01
HMIS® ratings	Health: 2 Flammability: 3 Physical hazard: 0
Disclaimer	The information in the sheet was written based on the best knowledge and experience currently available. Oatey Co. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.



SAFETY DATA SHEET

1. Identification

Product identifier	PVC Regular Clear Cement
Other means of identification	
Product code	1100E
Synonyms	Part Numbers: 31012, 31013, 31014, 31015, 31016, 31958, 31959, 31960, 31961
Recommended use	Joining PVC Pipes
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Company Name	Oatey Co.
Address	4700 West 160th St. Cleveland, OH 44135
Telephone	216-267-7100
E-mail	info@oatey.com
Transport Emergency	Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)
Emergency First Aid	1-877-740-5015
Contact person	MSDS Coordinator

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Aspiration hazard	Category 1

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Highly flammable liquid and vapor. Harmful if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.

Precautionary statement

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

Response If swallowed: Immediately call a poison center/doctor. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. Rinse mouth. Do NOT induce vomiting. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish.

Storage	Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. May form explosive peroxides. Contains a chemical classified by the US EPA as a suspected possible carcinogen.

Supplemental information

Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Methyl ethyl ketone	78-93-3	25-40
Cyclohexanone	108-94-1	10-25
Furan, Tetrahydro-	109-99-9	10-25
Acetone	67-64-1	5-15
Polyvinyl chloride	9002-86-2	5-15

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis.
Most important symptoms/effects, acute and delayed	Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Highly flammable liquid and vapor. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water.

Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

Environmental precautions

7. Handling and storage

Precautions for safe handling

Vapors may form explosive mixtures with air. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Components	Type	Value
Polyvinyl chloride (CAS 9002-86-2)	STEL	5 ppm
	TWA	1 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Acetone (CAS 67-64-1)	PEL	2400 mg/m3	
		1000 ppm	
Cyclohexanone (CAS 108-94-1)	PEL	200 mg/m3	
		50 ppm	
Furan, Tetrahydro- (CAS 109-99-9)	PEL	590 mg/m3	
		200 ppm	
Methyl ethyl ketone (CAS 78-93-3)	PEL	590 mg/m3	
		200 ppm	
Polyvinyl chloride (CAS 9002-86-2)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Acetone (CAS 67-64-1)	STEL	750 ppm	
	TWA	500 ppm	
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm	
	TWA	20 ppm	
Furan, Tetrahydro- (CAS 109-99-9)	STEL	100 ppm	
	TWA	50 ppm	
Methyl ethyl ketone (CAS 78-93-3)	STEL	300 ppm	
	TWA	200 ppm	
Polyvinyl chloride (CAS 9002-86-2)	TWA	1 mg/m3	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Acetone (CAS 67-64-1)	TWA	590 mg/m3
		250 ppm
Cyclohexanone (CAS 108-94-1)	TWA	100 mg/m3
		25 ppm
Furan, Tetrahydro- (CAS 109-99-9)	STEL	735 mg/m3
		250 ppm
	TWA	590 mg/m3
		200 ppm
Methyl ethyl ketone (CAS 78-93-3)	STEL	885 mg/m3
		300 ppm
	TWA	590 mg/m3
		200 ppm

Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	50 mg/l	Acetone	Urine	*
Cyclohexanone (CAS 108-94-1)	80 mg/l	1,2-Cyclohexanediol, with hydrolysis	Urine	*
	8 mg/l	Cyclohexanol, with hydrolysis	Urine	*
Furan, Tetrahydro- (CAS 109-99-9)	2 mg/l	Tetrahydrofuran	Urine	*
Methyl ethyl ketone (CAS 78-93-3)	2 mg/l	MEK	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines**US - California OELs: Skin designation**

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Cyclohexanone (CAS 108-94-1)

Skin designation applies.

US - Tennessee OELs: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

Furan, Tetrahydro- (CAS 109-99-9)

Can be absorbed through the skin.

US. NIOSH: Pocket Guide to Chemical Hazards

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

Appropriate engineering controls	Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Face shield is recommended. Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Translucent liquid.
Color	Clear.
Odor	Solvent.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	151 °F (66.11 °C)
Flash point	-4.0 °F (-20.0 °C)
Evaporation rate	5.5 - 8
Flammability (solid, gas)	Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	1.8
Flammability limit - upper (%)	11.8
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	145 mm Hg @ 20 C
Vapor density	2.5
Relative density	0.9 +/- 0.02
Solubility(ies)	
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	80 - 500 cP
Other information	
VOC (Weight %)	488 g/l SCAQMD 1168/M316A

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
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Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Ammonia. Amines. Isocyanates. Caustics.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May be fatal if swallowed and enters airways. Headache. Nausea, vomiting. May cause irritation to the respiratory system. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	May be fatal if swallowed and enters airways. Harmful if swallowed. Harmful if swallowed. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.
Symptoms related to the physical, chemical and toxicological characteristics	Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways. Narcotic effects. May cause respiratory irritation.

Components	Species	Test Results
Acetone (CAS 67-64-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	20 ml/kg
<i>Inhalation</i>		
LC50	Rat	50 mg/l, 8 Hours
<i>Oral</i>		
LD50	Rat	5800 mg/kg
Cyclohexanone (CAS 108-94-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	948 mg/kg
<i>Inhalation</i>		
LC50	Rat	8000 ppm, 4 hours
<i>Oral</i>		
LD50	Rat	1540 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

In 2012 USEPA Integrated Risk Information System (IRIS) reviewed a two species inhalation lifetime study on THF conducted by NTP (1998). Male rats developed renal tumors and female mice developed liver tumors while neither the female rats nor the male mice showed similar results. Because the carcinogenic mechanisms could not be identified clearly in either species for either tumor, the EPA determined that the male rat and female mouse findings are relevant to the assessment of carcinogenic potential in humans. Therefore, the IRIS review concludes that these data in aggregate indicate that there is "suggestive evidence of carcinogenic potential" following exposure to THF by all routes of exposure.

IARC Monographs. Overall Evaluation of Carcinogenicity

Cyclohexanone (CAS 108-94-1)

3 Not classifiable as to carcinogenicity to humans.

Polyvinyl chloride (CAS 9002-86-2)

3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Polyvinyl chloride (CAS 9002-86-2)

Cancer

Reproductive toxicity

This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure

Narcotic effects. May cause drowsiness and dizziness. Respiratory tract irritation.

Specific target organ toxicity - repeated exposure

Not classified.

Aspiration hazard

May be fatal if swallowed and enters airways.

Chronic effects

Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components

Species

Test Results

Acetone (CAS 67-64-1)

Aquatic

Fish

LC50

Fathead minnow (Pimephales promelas) > 100 mg/l, 96 hours

Cyclohexanone (CAS 108-94-1)

Aquatic

Fish

LC50

Fathead minnow (Pimephales promelas) 481 - 578 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability

No data is available on the degradability of this product.

Bioaccumulative potential

No data available.

Partition coefficient n-octanol / water (log Kow)

Acetone (CAS 67-64-1)

-0.24

Cyclohexanone (CAS 108-94-1)

0.81

Furan, Tetrahydro- (CAS 109-99-9)

0.46

Methyl ethyl ketone (CAS 78-93-3)

0.29

Mobility in soil

No data available.

Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1993
UN proper shipping name	Flammable liquids, n.o.s. (Methyl ethyl ketone RQ = 12788 LBS, Acetone RQ = 50505 LBS)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB2, T7, TP1, TP8, TP28
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1993
UN proper shipping name	Flammable liquid, n.o.s. (Methyl ethyl ketone, Acetone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	3H
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (Methyl ethyl ketone, Acetone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to
Annex II of MARPOL 73/78 and
the IBC Code

Not available.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Polyvinyl chloride (CAS 9002-86-2)	Cancer
	Central nervous system
	Liver
	Blood
	Flammability

CERCLA Hazardous Substance List (40 CFR 302.4)

Acetone (CAS 67-64-1)	LISTED
Cyclohexanone (CAS 108-94-1)	LISTED
Furan, Tetrahydro- (CAS 109-99-9)	LISTED
Methyl ethyl ketone (CAS 78-93-3)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Acetone (CAS 67-64-1) 6532

Methyl ethyl ketone (CAS 78-93-3) 6714

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Acetone (CAS 67-64-1) 35 %WV

Methyl ethyl ketone (CAS 78-93-3) 35 %WV

DEA Exempt Chemical Mixtures Code Number

Acetone (CAS 67-64-1) 6532

Methyl ethyl ketone (CAS 78-93-3) 6714

US state regulations**US. Massachusetts RTK - Substance List**

Acetone (CAS 67-64-1)

Cyclohexanone (CAS 108-94-1)

Furan, Tetrahydro- (CAS 109-99-9)

Methyl ethyl ketone (CAS 78-93-3)

US. New Jersey Worker and Community Right-to-Know Act

Acetone (CAS 67-64-1)

Cyclohexanone (CAS 108-94-1)

Furan, Tetrahydro- (CAS 109-99-9)

Methyl ethyl ketone (CAS 78-93-3)

Polyvinyl chloride (CAS 9002-86-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Acetone (CAS 67-64-1)

Cyclohexanone (CAS 108-94-1)

Furan, Tetrahydro- (CAS 109-99-9)

Methyl ethyl ketone (CAS 78-93-3)

US. Rhode Island RTK

Acetone (CAS 67-64-1)

Cyclohexanone (CAS 108-94-1)

Furan, Tetrahydro- (CAS 109-99-9)

Methyl ethyl ketone (CAS 78-93-3)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	05-27-2015
Revision date	-
Version #	01
HMIS® ratings	Health: 2 Flammability: 3 Physical hazard: 0

NFPA ratings



Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. Oatey Co. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.



SAFETY DATA SHEET

Granular Absorbent - IL - MS

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Granular Absorbent - IL - MS

SDS Number: 1003000

Manufacturer:	Oil-Dri Corporation of America 410 North Michigan Avenue Chicago, IL 60611 +1-312-321-1515
TRANSPORTATION EMERGENCY INFORMATION:	Chemtrec +1-800-424-9300 (US and Canada) +1-703-527-3887 (International - Call Collect)

Product Use: Absorbent

Restrictions On Use: Not to be used with turpentine, hydrofluoric acid, vegetable oil, and other unsaturated organic compounds (such as fish oil), as this may generate heat and/or fire.

2. HAZARDS IDENTIFICATION

GHS Classification:

Health: Carcinogen Category 1A

Specific Target Organ Toxicity - Repeat Exposure Category 1

Environmental: Not Hazardous

Physical: Not Hazardous

GHS Labeling:

Pictogram:



Health Hazard

DANGER!

H350 May cause cancer by inhalation.

H372 Causes damage to lungs through prolonged or repeated exposure by inhalation.

Prevention: P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe dust.

P264 - Wash thoroughly after handling

P280 Wear protective gloves and clothing.

P270 Do not eat, drink or smoke when using this product.

Response: P308 + P313 IF exposed or concerned: Get medical advice/attention.

Storage: Store in a dry area.

Disposal: P501 Dispose of contents/container in accordance with all local and national regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No./ EINECS-No	%
Bentonite	1302-78-9	90-100%
Quartz (crystalline silica) (Respirable <1%)	14808-60-7	0-10%

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If irritation or other symptoms occurs, get medical attention.

Skin contact: No first aid should be needed.

Eye contact: Immediately flush eyes with cool running water, lifting upper and lower lids. If irritation persists or for foreign body in the eye, get medical attention.

Ingestion: If used material is ingested, get medical attention due to possibility of chemical contamination. If large amount of unused material is swallowed, get immediate medical attention.

Most Important symptoms and effects, both acute and delayed: Eye contact may cause mechanical irritation and possible eye injury. May cause mechanical skin and respiratory irritation. This product contains <1% respirable crystalline silica. May cause cancer if respirable dust is inhaled over prolonged periods. This product contains crystalline silica. Inhalation of respirable crystalline silica may cause lung disease, silicosis with symptoms of shortness of breath and cough.

Indication of any immediate medical attention and special treatment needed: No immediate medical attention is required.



SAFETY DATA SHEET

Granular Absorbent - IL - MS

5. FIREFIGHTING MEASURES

Suitable Extinguishing Media: Use media that is appropriate for surrounding fire; unused product is not combustible.

Specific Hazards Arising from the Chemical: None for unused product.

Special Protective Equipment and Precautions for Fire-fighters: Firefighters should always wear self-contained breathing apparatus and full protective clothing for fires involving chemicals or in confined spaces.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: No special equipment is generally required for spill clean-up. For dusty conditions, an approved respirator may be needed. Refer to Section 8 for additional information.

Environmental Hazards: Report releases as required by local and federal regulations.

Methods and Materials for Containment and Cleaning Up: Sweep up and collect unused material for re-use or disposal. For dusty conditions, an approved respirator may be needed. Refer to Section 8 for additional information.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Wash thoroughly with soap and water after use. If clothing becomes dusty, launder before re-use. Use only with adequate ventilation. Minimize the generation and accumulation of dust. Follow good housekeeping practices to keep surfaces, including areas overhead such as piping, drop ceilings, ductwork, etc. free from settled dust. Dry powders can build static electricity charges when subjected to friction of transfer and in mixing operations.

Conditions for Safe Storage, including any Incompatibilities: Store in a dry area. Keep away from turpentine, hydrofluoric acid, vegetable oil, and other unsaturated organic compounds (such as fish oil), as this may generate heat and/or fire.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limit(s)

Chemical Name	Exposure limit(s)
Bentonite	15 mg/m ³ PEL-TWA (total dust), 5 mg/m ³ PEL-TWA (respirable dust)
Quartz (crystalline silica) (Respirable <1%)	30 mg/m ³ / %SiO ₂ +2 (total dust) TWA OSHA PEL 10 mg/m ³ / %SiO ₂ +2 (respirable dust) TWA OHA PEL 0.025 mg/m ³ (respirable dust) TWA ACGIH TLV

Appropriate Engineering Controls: General ventilation is adequate for normal use. If handling produces airborne dust, local exhaust ventilation may be needed.

Individual Protection Measures, such as Personal Protective Equipment:

Eye Protection: Safety glasses or goggles if needed to prevent eye contact.

Skin Protection: None required for normal use.

Respiratory Protection: None required for normal use. For operations where the dust concentration may be excessive, a dust respirator may be used. Follow OSHA regulations in the selection and use of respiratory protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Value
Appearance:	Gray to Tan to Red Granular Solid
Odor Threshold:	Not applicable.
Boiling point/range	Not applicable.
Melting point/range	Not available
Relative density	2.2
Vapor pressure	Not applicable.
Vapor density (air=1)	Not applicable.
Solubility	Insoluble
pH	Not applicable.
Partition coefficient (n-octanol/water):	Not available
Evaporation Rate (Butyl acetate=1)	Not applicable.
Viscosity:	Not applicable.
Volatile Organic Carbon Compounds (VOC) (g/L)	Not available
Flashpoint:	Not applicable.
Flammable Limits in Air % by Volume:	LEL (Lower):Not applicable. UEL (Upper): Not applicable.
Autoignition temperature:	Not available
Decomposition temperature:	Not available
Flammability (solid, gas):	Not flammable

10. STABILITY AND REACTIVITY

Reactivity: Not normally reactive.

Chemical Stability: Stable

Possibility of Hazardous Reactions: Spontaneous combustion can occur when this product is used to absorb high concentrations of chemicals having a high heat of absorption such as olefins, hydrochloric acid, etc.

Conditions to Avoid: None.



SAFETY DATA SHEET

Granular Absorbent - IL - MS

Incompatible Materials: Turpentine, hydrofluoric acid, vegetable oil, fish oil, unsaturated organic compounds.

Hazardous Decomposition Products: None.

11. TOXICOLOGICAL INFORMATION

Potential Health Effects:

Acute Hazards:

Inhalation: Inhalation of dust may cause irritation to the eyes, nose, throat and respiratory tract.

Skin contact: No known hazard.

Eye contact: Contact may cause mechanical, abrasive irritation with possible injury.

Ingestion: No known hazard.

Chronic Effects: Inhalation of excessive concentrations of any dust, including this material, may lead to lung injury. This product contains crystalline silica, in the form of quartz. Excessive inhalation of respirable crystalline silica may cause silicosis, a progressive, disabling and sometimes fatal disease of the lung. Symptoms may include cough, shortness of breath, wheezing and reduced pulmonary function.

Carcinogenicity Listing: The International Agency for Research on Cancer (IARC), in Monograph 100C has concluded that crystalline silica inhaled in the form of quartz is carcinogenic to humans (Group 1). Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs. The National Toxicology Program (NTP) classifies crystalline silica as a known carcinogen. Applications and exposure data indicate that exposure to respirable quartz in this product with normal use is well below the OSHA Permissible Exposure Limit (PEL) and ACGIH Threshold Limit Value (TLV). The manufacturer is not aware of any scientific or medical data available indicating that exposure to respirable crystalline silica from this product under conditions of normal use will cause silicosis or cancer. Adverse effects would not be expected from normal use of this product.

Acute Toxicity Values: Silica: LD50 oral rat 22,500 mg/kg, LC50 carp >10,000mg/L/72 hr.

12. ECOLOGICAL INFORMATION

Ecotoxicity: No data available for the product. No adverse effects on the environment are expected.

Persistence and Degradability: Bentonite and silica are non-degradable.

Bioaccumulative Potential: Not bioaccumulative.

Mobility in Soil: No data available

Other Adverse Effects: None currently known.



SAFETY DATA SHEET

Granular Absorbent - IL - MS

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with local, state and federal environmental Regulations. Unused material is suitable for disposal in sanitary landfill. Used material may be subject to regulation, depending on the nature of the material absorbed. Check with appropriate regulatory authority for used material containing hazardous waste.

14. TRANSPORT INFORMATION

US DOT Shipping Description: Not regulated

IATA Shipping Description (Air): Not regulated

Proper Shipping Name: Not regulated

UN Number: Not applicable.

Packing Group: Not applicable.

Labels Required: None.



SAFETY DATA SHEET

Granular Absorbent - IL - MS

15. REGULATORY INFORMATION

US Regulations

SARA 311/312 Hazard Categories: Chronic Health

SARA 313 This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements Under the SARA Section 313 (40 CFR 372): None.

SARA 302 Listed Chemicals: None.

CERCLA: This product is not subject to CERCLA release reporting. Many states have more stringent reporting requirements. Report releases as required by local and state regulations.

California Proposition 65: This product contains respirable crystalline silica which is known to the State of California to cause cancer.

EPA Toxic Substances Control Act (TSCA): All of the components of this product are listed on the TSCA Inventory or exempted from TSCA.

International Regulations:

EU REACH: Contact Oil Dri for information on REACH status.

Japan MITI: No data available

AICS: No data available



SAFETY DATA SHEET

Granular Absorbent - IL - MS

16. OTHER INFORMATION

Date Prepared: 7/7/2015

Revision Summary: May 29, 2015 - Conversion to Hazcom 2012 classification and labeling and format.

July 7, 2015 - Section 16 Products List

HMIS Rating: Health 0* Fire 0 Reactivity 0

0 = Minimal Hazard, 1 = Slight Hazard, 2 = Moderate Hazard, 3 = Serious Hazard, 4 = Severe Hazard

List of Associated Products:

Absorbs It	Oil-Dri Quick Sorb	Oil-Dri Premium Absorbent
Leak & Spill	Private Label Absorbents	

The information contained herein is true and correct to the best of Oil-Dri Corporation of America's knowledge. However, no warranty, expressed or implied, is made. Nothing herein should be interpreted as a recommendation to infringe existing patents or violate any laws or regulations. Final determination of the suitability of the material is the sole responsibility of the user.

Safety Data Sheet

PERMABOND LH050

Revision Number: 2

Issue date: 05/05/15

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: PERMABOND LH050
Product Type: Anaerobic Sealant

Telephone: 732-868-1372 or 800-640-7599
Website: www.permabond.com

Company: PERMABOND LLC
14 Robinson Street
Pottstown, PA 19464
USA

Emergency Telephone:

Medical: Poison Control Center 866-827-6282 (toll free)
or 303-389-1109
Transport: CHEMTREC 800-424-9300

2. HAZARDS IDENTIFICATION

WARNING: CAUSES EYE IRRITATION
CAUSES SKIN IRRITATION
MAY CAUSE AN ALLERGIC SKIN REACTION
MAY CAUSE RESPIRATORY TRACT IRRITATION

HAZARD CLASS	HAZARD CATEGORY
EYE IRRITATION	2B
SKIN IRRITATION	2
SKIN SENSITIZATION	1
SPECIFIC TARGET ORGAN TOXICITY- SINGLE EXPOSURE- RESPIRATORY SYSTEM	3

PICTOGRAM(S)



Precautionary Statements

Prevention:

Avoid breathing vapors, mist or spray. Wash thoroughly after handling. Use in a well-ventilated area. Wear protective gloves and eye protection. Contaminated clothing should be laundered separately.

Response:

IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with plenty of water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF ON SKIN: Rinse with plenty of soap and water.
If feeling unwell call a poison control center or a physician. If eye irritation occurs: Get medical attention. If skin irritation occurs: Get medical attention.

Storage:

Store in a well-ventilated cool place.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disposal: Dispose of according to Federal, State/Provincial and local governmental regulations.

Existing conditions aggravated by exposure: Skin, eye and respiratory disorders.

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	CONCENTRATION (%)*
Polyglycol dimethacrylate	25852-47-5	30 – 60
Silica, amorphous, fumed crystal free	112945-52-5	1 – 5

*Exact concentration is a trade secret. Concentration ranges are provided to assist user in determining appropriate protection.

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. If symptoms persist, get medical attention.

Skin contact: Immediately wash with soap and water. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if symptoms occur.

Eye contact: Immediately flush with large amounts of water for at least 15 minutes. Get medical attention.

Ingestion: Do not induce vomiting. Keep individual calm and get medical attention. Never give anything by mouth to an unconscious person.

Symptoms: See section 11

5. FIRE-FIGHTING MEASURES

Extinguishing media: Foam, water spray or fog, dry chemical or carbon dioxide.

Special fire fighting procedures: Wear self-contained breathing apparatus and protective clothing. In case of fire keep container cool with water spray.

Unusual fire or explosion hazards: Uncontrolled polymerization may occur at high temperature resulting in explosions or rupturing containers.

Hazardous combustion products: Toxic and/or irritating organic vapors may be generated. Oxides of carbon. Oxides of sulfur and oxides of nitrogen.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection equipment recommended in section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:

Prevent product from entering drains or waterways.

Clean-up methods:

Remove all sources of ignition. Evacuate area. Dyke spill to prevent from entering water ways. Ventilate area. Wear protective equipment to clean up. Soak up spill using absorbent material such as sand, silica gel, acid binder, universal binder, or saw dust. Scrape as much material as possible and store in partially filled container until disposal. Refer to section 8 (Exposure Controls/ Personal Protection) before clean up.

7. HANDLING AND STORAGE

Handling:

Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Keep container tightly closed.

Storage:

Store in a cool well ventilated area away from heat, sparks, flames, or other sources of ignition. For safe storage store between 0°C (32 °F) and 30°C (86°F)

For shelf life information contact Permabond customer service at (800)714-0170

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employees should complete an assessment of all workplaces to determine the need for and selection of proper exposure controls and protective equipment before each task is started.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Polyglycol dimethacrylate	None	None	None	None
Treated fumed silica	10 mg/m3 TWA inhalable dust. 3 mg/m3 TWA Respirable fraction.	15 mg/m3 TWA Total dust. 5 mg/m3 TWA Respirable fraction	None	None

Engineering controls:

Use local ventilation to maintain worker exposure below established exposure limits.

Respiratory protection:

Use NIOSH approved respirator if there is potential to exceed exposure limit(s).

Skin protection:

Use chemical resistant/ impermeable gloves (nitrile) gloves and protective clothing to prevent skin contact.

Eye/face protection:

Safety goggles or safety glasses with side shields or face shield if splashing or spraying is expected. Safety showers and eye wash stations should be available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:

Paste

Color:

white

Odor:

Mild acrylic odor

Odor threshold:

Not Available

pH:

Not applicable

Vapor pressure:

<5 mm Hg at 24°C (75°F)

Boiling point/range:	>149°C (300°F)
Melting point/range:	Not available
Specific gravity:	1.1 at 23.9°C (75°F)
Vapor density:	Not available
Flash point:	>93°C (199.94°F)
Flammable/Explosive limits – Lower:	Not available
Flammable/Explosive limits – upper:	Not available
Autoignition Temperature:	Not available
Evaporation rate:	Not available
Solubility in water:	Slight
Partition coefficient (n-octanol/water):	Not available
Decomposition temperature:	Not available
VOC content:	<2 %, 20 grams/liter (Estimated)

10. STABILITY AND REACTIVITY

Stability:	Stable when stored under the recommended storage conditions
Hazardous reactions:	None under normal processing conditions. In the presence incompatible materials or high temperature polymerization may occur.
Hazardous decomposition products:	Oxides of carbon. Oxides of nitrogen. Oxides of sulfur. Irritating organic vapors.
Incompatible materials:	Strong oxidizing agent, Reducing agents. Acids. Bases. Peroxides. Amines. Free radical polymerizing catalysts. Copper. Iron. Aluminum. Zinc. Rust.
Conditions to avoid:	Contact with incompatible materials which may cause polymerization. Heat, sparks, flames and other sources of ignition.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation:	Inhalation of vapor or mist may cause respiratory tract irritation.
Skin contact:	Causes skin irritation. May cause skin allergic reaction.
Eye contact:	Causes eye irritation.
Ingestion:	May cause gastrointestinal tract irritation if swallowed.
Existing conditions aggravated by exposure:	Skin, eye and respiratory disorders.

Hazardous components	LD50	LC50	Immediate and delayed Health Effects
Polyglycol dimethacrylate	None	None	Allergen, Irritant
Treated fumed silica	None	None	Irritant

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen
Polyglycol dimethacrylate	No	No	No
Treated fumed silica	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Not Available

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Dispose of according to Federal, State/Provincial and local governmental regulations. Refer to section 8 (Exposure Controls/Personal Protection) before handling.

14. TRANSPORT INFORMATION

U.S. Department of Transportation Ground (49 CFR):

Proper shipping name:	Not regulated
Hazard class or division:	None
Identification number:	None
Packing group:	None
Exceptions:	None

International Air Transportation (ICAO/IATA):

Proper shipping name:	Not regulated
Hazard class or division:	None
Identification number:	None
Packing group:	None
Exceptions:	None

Water Transportation (IMO/IMDG):

Proper shipping name:	Not regulated
Hazard class or division:	None
Identification number:	None
Packing group:	None

Marine pollutant:

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status:	All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12 (b) Export Notification:	None above the reporting limits.
CERCLA/SARA Section 302 EHS:	None above the reporting limits.
CERCLA/SARA Section 311/312:	Immediate Health, Delayed Health, Fire, Reactive
CERCLA/SARA 313:	This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372).
CERCLA Reportable quantity:	
California Proposition 65:	No chemical listed on the California Proposition 65 are known to be present.

Canada Regulatory Information

CEPA DSL/NDL Status:	All components are listed on or are exempt from listing on the Domestic Substances List.
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16. OTHER INFORMATION

This safety data sheet contains changes from the previous one: New format

Issue date: 05/05/15

ADDITIONAL INFORMATION: The information given and the recommendations made herein apply to our product(s) alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guaranty of accuracy is made. It is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.



SAFETY DATA SHEET

Revision Date 12-Oct-2016

Version 10

1. IDENTIFICATION

Product identifier

Product Name HIGH TACK SPRAY-A-GASKET SEALANT 4 OZ

Other means of identification

Product Code 80064

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Flammable Aerosol, Sealant

Uses advised against No information available

Details of the supplier of the safety data sheet

Manufactured and Distributed by:

ITW Permatex
6875 Parkland Blvd.
Solon, OH 44139 USA

May Also Be Distributed by:

ITW Permatex Canada
35 Brownridge Road, Unit 1
Halton Hills, ON Canada L7G 0C6
Telephone: (800) 924-6994

Company Phone Number 1-87-Permatex
(877) 376-2839

24 Hour Emergency Phone Number Chem-Tel: 800-255-3924
International Emergency:
00+1+ 813-248-0585
Contract Number: MIS0003453

E-mail address mail@permatex.com

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Reproductive toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2
Aspiration toxicity	Category 1
Extremely flammable aerosol	Category 1
Gases under pressure	Liquefied gas

Label elements

Emergency Overview

Danger

Causes skin irritation

Causes serious eye irritation
Suspected of damaging fertility or the unborn child
May cause drowsiness or dizziness
May cause damage to organs through prolonged or repeated exposure
May be fatal if swallowed and enters airways
Extremely flammable aerosol
Contains gas under pressure; may explode if heated



Appearance Red

Physical state Liquid

Odor Solvent

Precautionary Statements - Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear suitable gloves and eye/face protection
Wash hands thoroughly after handling
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Do not spray on an open flame or other ignition source
Pressurized container: Do not pierce or burn, even after use

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention
Specific treatment (see supplemental first aid instructions on this label)

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
If skin irritation occurs: Get medical advice/attention
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Do NOT induce vomiting

Precautionary Statements - Storage

Store locked up
Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Other Information

- The classification as a carcinogen or mutagen need not apply if it can be shown that the substance contains less than 0.1 % w/w 1,3-butadiene (EINECS No. 203-450-8). If the substance is not classified as a carcinogen or mutagen, at least the S-phrases (2-)9-16 (Table 3.2) should apply. This note applies only to certain complex oil-derived substances in Part 3

3. COMPOSITION/INFORMATION ON INGREDIENTS**Substance(s)**

Chemical Name	CAS No	Weight-%	Trade Secret
PETROLEUM GASES, LIQUEFIED, SWEETENED	68476-86-8	30 - 60	*
N-HEXANE	110-54-3	10 - 30	*
ACETONE	67-64-1	10 - 30	*
SOLVENT NAPHTHA (PETROLEUM), LIGHT ALIPH.	64742-89-8	1-5	*
ETHYL ACETATE	141-78-6	1 - 5	*

4. FIRST AID MEASURES**Description of first aid measures**

General advice	Get medical advice/attention if you feel unwell.
Eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Skin contact	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation persists, call a physician. Wash contaminated clothing before reuse.
Inhalation	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If symptoms persist, call a physician.
Ingestion	IF SWALLOWED: Call a physician or poison control center immediately. Rinse mouth. Do NOT induce vomiting.
Self-protection of the first aider	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms	See section 2 for more information.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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5. FIRE-FIGHTING MEASURES**Suitable extinguishing media**Carbon dioxide (CO₂), Dry chemical, Foam**Unsuitable extinguishing media**

None.

Specific hazards arising from the chemical

Extremely flammable. Heating causes rise in pressure with risk of bursting.

Explosion data**Sensitivity to Mechanical Impact** None.**Sensitivity to Static Discharge** None.**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Personal precautions Remove all sources of ignition. Ensure adequate ventilation, especially in confined areas. Avoid contact with eyes and skin. Use personal protective equipment as required.

Environmental precautions

Environmental precautions Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Eliminate all ignition sources if safe to do so. Ensure adequate ventilation. Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE**Precautions for safe handling**

Advice on safe handling Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Take precautionary measures against static discharges. Handle in accordance with good industrial hygiene and safety practice. Avoid breathing vapors or mists. Avoid contact with skin, eyes or clothing. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity).

Incompatible materials Strong oxidizing agents, Alkalies

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters****Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
N-HEXANE 110-54-3	TWA: 50 ppm S*	TWA: 500 ppm TWA: 1800 mg/m ³ (vacated) TWA: 50 ppm (vacated) TWA: 180 mg/m ³	IDLH: 1100 ppm TWA: 50 ppm TWA: 180 mg/m ³
ACETONE 67-64-1	STEL: 500 ppm TWA: 250 ppm	TWA: 1000 ppm TWA: 2400 mg/m ³ (vacated) TWA: 750 ppm (vacated) TWA: 1800 mg/m ³ (vacated) STEL: 2400 mg/m ³ The acetone STEL does not apply to the cellulose acetate fiber industry. It is in effect for all other sectors (vacated) STEL: 1000 ppm	IDLH: 2500 ppm TWA: 250 ppm TWA: 590 mg/m ³
ETHYL ACETATE 141-78-6	TWA: 400 ppm	TWA: 400 ppm TWA: 1400 mg/m ³ (vacated) TWA: 400 ppm (vacated) TWA: 1400 mg/m ³	IDLH: 2000 ppm TWA: 400 ppm TWA: 1400 mg/m ³

NIOSH IDLH *Immediately Dangerous to Life or Health*

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin and body protection Wear protective natural rubber, nitrile rubber, Neoprene™ or PVC gloves.

Respiratory protection Use NIOSH-approved air-purifying respirator with organic vapor cartridge or canister, as appropriate.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Liquid
Appearance Red
Odor Solvent
Odor threshold No information available

<u>Property</u>	<u>Values</u>
pH	Does not apply
Melting point / freezing point	No information available
Boiling point / boiling range	> 38 °C / >100 °F
Flash point	< -18 °C / < 0 °F
Evaporation rate	>1
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	Not determined
Vapor density	>1
Relative density	0.755-0.765
Water solubility	Negligible
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

Remarks • Method

Gives a flame projection at full valve opening or flashback at any degree of valve opening
Ether = 1

Air = 1

Other Information

Softening point No information available
Molecular weight No information available
VOC Content (%) 52.5%

Density No information available
Bulk density No information available

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Heat, flames and sparks.

Incompatible materials

Strong oxidizing agents, Alkalis

Hazardous Decomposition Products

Carbon oxides

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation May be harmful by inhalation.

Eye contact Contact with eyes may cause irritation. May cause redness and tearing of the eyes.

Skin contact May cause skin irritation and/or dermatitis.

Ingestion Potential for aspiration if swallowed. Aspiration may cause pulmonary edema and pneumonitis.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
N-HEXANE 110-54-3	= 25 g/kg (Rat)	= 3000 mg/kg (Rabbit)	= 48000 ppm (Rat) 4 h
ACETONE 67-64-1	= 5800 mg/kg (Rat)	-	= 50100 mg/m ³ (Rat) 8 h
SOLVENT NAPHTHA (PETROLEUM), LIGHT ALIPH. 64742-89-8	-	= 3000 mg/kg (Rabbit)	-
ETHYL ACETATE 141-78-6	= 5620 mg/kg (Rat)	> 18000 mg/kg (Rabbit) > 20 mL/kg (Rabbit)	-

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.
Germ cell mutagenicity No information available.
Carcinogenicity No information available.
Reproductive toxicity Product is or contains a chemical which is a known or suspected reproductive hazard.
Target Organ Effects Central nervous system, Eyes, Peripheral Nervous System (PNS), Respiratory system, Skin.

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 17376 mg/kg

ATEmix (dermal) 10746 mg/kg
ATEmix (inhalation-dust/mist) 400.8 mg/l
ATEmix (inhalation-vapor) 192000 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

45 % of the mixture consists of components(s) of unknown hazards to the aquatic environment

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Mobility

No information available.

Chemical Name	Partition coefficient
PETROLEUM GASES, LIQUEFIED, SWEETENED 68476-86-8	<=2.8
ACETONE 67-64-1	-0.24
ETHYL ACETATE 141-78-6	0.6

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

Contaminated packaging Do not reuse container.

US EPA Waste Number D001

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
N-HEXANE 110-54-3	Toxic Ignitable
ACETONE 67-64-1	Ignitable
ETHYL ACETATE 141-78-6	Toxic Ignitable

14. TRANSPORT INFORMATION

DOT

UN/ID no UN 1950
Proper shipping name: Aerosols, Limited Quantity (LQ)
Hazard Class 2.1

IATA

UN/ID no ID 8000
Proper shipping name: Consumer commodity
Hazard Class 9

IMDG

UN/ID no UN 1950
Proper shipping name: Aerosols, Limited Quantity (LQ)
Hazard Class 2.1

15. REGULATORY INFORMATION**International Inventories**

TSCA Complies
DSL/NDL Complies
EINECS/ELINCS Complies
ENCS Not Listed.
IECSC Complies
KECL Complies
PICCS Complies
AICS Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	SARA 313 - Threshold Values %
N-HEXANE - 110-54-3	1.0

SARA 311/312 Hazard Categories

Acute health hazard Yes
Chronic Health Hazard Yes
Fire hazard Yes
Sudden release of pressure hazard No
Reactive Hazard No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
N-HEXANE 110-54-3	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
ACETONE 67-64-1	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
ETHYL ACETATE 141-78-6	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
ACETONE 67-64-1	X	X	X
N-HEXANE 110-54-3	X	X	X
ETHYL ACETATE 141-78-6	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

WHMIS Hazard Class

D2B - Toxic materials, B5 - Flammable aerosol, A Compressed gases

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA	Health hazards 2	Flammability 3	Instability 0	-
HMIS	Health hazards 2	Flammability 3	Physical hazards 0	Personal protection B

NFPA (National Fire Protection Association)
HMIS (Hazardous Material Information System)

Revision Date 12-Oct-2016

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : PERMATITE 711 GP2 SUPER ADHESIVE / SEALANT
Product form : Mixture
Other means of identification : Permatite 711 Gp2 Super Universal Sealant
Permatite 711 Super Sealant
Permatite 711 Adhesive / Sealant

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Adhesive / Sealant / Mastic

1.3. Details of the supplier of the safety data sheet

Permatite / Division of DSI
18466 Kenyon Avenue
Lakeville, MN 55044
(952)898-3200

1.4. Emergency telephone number

24 Hour Emergency:

INFOTRAC: 1-800-535-5053

NOTE: INFOTRAC emergency number to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Flam. liq. 2 H225
Skin Irrit. 2 H315
Skin Sens. 1B H317
Carc. 1A H350
Repr. 2 H361
STOT SE 3 H336
STOT RE 2 H373
Asp. Tox. 1 H304

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US)



Signal word (GHS-US)

: **Danger**

Hazard statements (GHS-US)

: H225 - Flammable liquid and vapor
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H336 - May cause drowsiness or dizziness
H350 - May cause cancer (Inhalation)
H361 - Suspected of damaging the unborn child (Inhalation)
H373 - May cause damage to organs (central nervous system) through prolonged or repeated exposure (Inhalation)

Precautionary statements (GHS-US)

: P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from heat, open flames, sparks. - No smoking
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical, lighting, ventilating equipment
P260 - Do not breathe fume, mist, spray, vapours
P261 - Avoid breathing fume, mist, spray, vapours

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P264 - Wash hands, forearms and face thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing must not be allowed out of the workplace
P280 - Wear eye protection, protective clothing, protective gloves
P301+P310 - IF SWALLOWED: Immediately call a doctor, a POISON CENTER
P302+P352 - If on skin: Wash with plenty of water
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P308+P313 - If exposed or concerned: Get medical advice/attention
P312 - Call a doctor, a POISON CENTER if you feel unwell
P314 - Get medical advice/attention if you feel unwell
P321 - Specific treatment (see first aid instructions on this label)
P331 - Do NOT induce vomiting
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
P362+P364 - Take off contaminated clothing and wash it before reuse
P370+P378 - In case of fire: Use carbon dioxide (CO₂), extinguishing powder, foam to extinguish
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty containers which can be disposed of as non-hazardous waste

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%
Toluene	(CAS No) 108-88-3	15 - 40
Polybutene	(CAS No) 9003-29-6	3 - 7
Petroleum distillates, hydrotreated light	(CAS No) 64742-47-8	1 - 5
N,N'-Ethylenebis(12-hydroxyoctadecanamide)	(CAS No) 123-26-2	0.1 - 1
Silica: Crystalline, quartz	(CAS No) 14808-60-7	0.1 - 1

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: If exposed or concerned, get medical attention/advice. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.
First-aid measures after inhalation	: IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention. If breathing is difficult, supply oxygen. If breathing has stopped, give artificial respiration.
First-aid measures after skin contact	: IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin with water for at least 15 minutes. If irritation develops or persists, get medical attention.
First-aid measures after eye contact	: IF IN EYES: Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do so. If pain, blinking, or irritation develops or persists, get medical attention. Continue rinsing.
First-aid measures after ingestion	: IF SWALLOWED: rinse mouth thoroughly. Do not induce vomiting without advice from poison control center or medical professional. Get medical attention immediately.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries	: May be fatal if swallowed and enters airways. Causes skin irritation. May cause an allergic skin reaction. May cause drowsiness or dizziness. May cause cancer (Inhalation). Suspected of damaging the unborn child (Inhalation). May cause damage to organs (central nervous system) through prolonged or repeated exposure (Inhalation).
Symptoms/injuries after inhalation	: May cause drowsiness or dizziness.
Symptoms/injuries after skin contact	: Causes skin irritation. May cause an allergic skin reaction.
Symptoms/injuries after eye contact	: Direct contact with the eyes is likely to be irritating.
Symptoms/injuries after ingestion	: May be fatal if swallowed and enters airways.
Chronic symptoms	: May cause an allergic skin reaction. May cause cancer. Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide. Dry powder. Foam. Water spray. Sand.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Flammable solid.

Explosion hazard : Heating may cause an explosion.

Reactivity : No dangerous reactions known under normal conditions of use.

5.3. Advice for firefighters

Precautionary measures fire : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Transfer to and from commonly bonded and grounded containers.

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not dispose of fire-fighting water in the environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear self-contained breathing apparatus and protective suit (see item 8).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate area. Ventilate area. Keep upwind. Spill should be handled by trained clean-up crews properly equipped with respiratory equipment and full chemical protective gear (see Section 8).

6.1.1. For non-emergency personnel

Protective equipment : Wear Protective equipment as described in Section 8.

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Wear suitable protective clothing, gloves and eye or face protection. Approved supplied-air respirator, in case of emergency.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Minimize generation of dust and vapors. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Soak up small spill with inert solids.

Methods for cleaning up : Wear suitable protective clothing. Exclude sources of ignition and ventilate the area. Collect spillage. Place in a suitable container for disposal in accordance with the waste regulations (see Section 13).

6.4. Reference to other sections

See Sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Handle in accordance with good industrial hygiene and safety procedures. Keep container closed when not in use. Avoid breathing dust, fume, mist, spray, vapours. Do not get in eyes, on skin, or on clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Bulk transfers should be properly grounded to prevent static electric charge from accumulating, creating a fire hazard.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a dry, cool and well-ventilated place. Keep away from ignition sources. Avoid elevated temperatures.

Storage temperature : < 49 °C (120 °F)

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Polybutene (9003-29-6)	
Remark (ACGIH)	OELs not established
Remark (OSHA)	OELs not established
Toluene (108-88-3)	
ACGIH TWA (ppm)	20
Remark (ACGIH)	Visual impair; female repro;
Petroleum distillates, hydrotreated light (64742-47-8)	
Remark (ACGIH)	OELs not established

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Remark (OSHA)	OELs not established
Silica: Crystalline, quartz (14808-60-7)	
ACGIH TWA (mg/m ³)	0.025 (respirable fraction)
OSHA PEL (TWA) (mg/m ³)	(30)/(%SiO ₂ + 2) total dust; (10)/(%SiO ₂ + 2) respirable fraction
OSHA PEL (TWA) (ppm)	(250)/(%SiO ₂ + 5) respirable fraction

8.2. Exposure controls

Appropriate engineering controls

: Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment with flammable materials. Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

: Gloves. Protective goggles. Wear chemically impervious apron over labcoat and full coverage clothing. Insufficient ventilation: wear respiratory protection.



Hand protection

: Gloves should be classified under Standard EN 374 or ASTM F1296. Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Suggested glove materials are: Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, PVC or vinyl. . Change contaminated gloves immediately. Suitable gloves for this specific application can be recommended by the glove supplier.

Eye protection

: Wear eye protection, including chemical splash goggles and a face shield when possibility exists for eye contact due to spraying liquid or airborne particles.

Skin and body protection

: Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.

Respiratory protection

: Wear a NIOSH-approved (or equivalent) full-facepiece airline respirator in the positive pressure mode with emergency escape provisions. In case of inadequate ventilation or risk of inhalation of vapors, use suitable respiratory equipment with gas filter (type A2). Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Semi-solid with smooth appearance.
Color	: Translucent. Various.
Odor	: strong. Sweet.
Odor Threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: Uncured material is semi-solid at room temperature. Cured material is solid.
Boiling point	: > 110 °C (230 °F)
Flash point	: 7 °C (45 °F) by TCC (ASTM D56)
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: > 1 (air = 1)
Relative density	: 0.99 at 15.6 °C (60.0 °F)
Density	: 995 g/l (8.25 lbs/gal) at 15.6 °C (60 °F)
Solubility	: Partially miscible in petroleum solvents. Water: Negligible
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available

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Explosive limits : No data available

9.2. Other information

VOC content : 227 g/l

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

elevated temperatures. Ignition sources. Product contamination.

10.5. Incompatible materials

Strong acids. Oxidizing agent. Reducing agents, alkalis.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO₂). Nitrogen oxides. Hydrocarbons. Irritating vapors. Aldehydes

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Toluene (108-88-3)	
LD50 oral rat	2600 mg/kg
LD50 dermal rabbit	12000 mg/kg
LC50 inhalation rat (mg/l)	12.5 mg/l/4h
Petroleum distillates, hydrotreated light (64742-47-8)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 5.2 mg/l/4h
Silica: Crystalline, quartz (14808-60-7)	
LD50 oral rat	500 mg/kg
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: May cause cancer (Inhalation).

Silica: Crystalline, quartz (14808-60-7)	
IARC group	1 - Carcinogenic to humans
Reproductive toxicity	: Suspected of damaging the unborn child (Inhalation).
Specific target organ toxicity (single exposure)	: May cause drowsiness or dizziness.
Specific target organ toxicity (repeated exposure)	: May cause damage to organs (central nervous system) through prolonged or repeated exposure (Inhalation).
Aspiration hazard	: May be fatal if swallowed and enters airways.
Symptoms/injuries after inhalation	: May cause drowsiness or dizziness.
Symptoms/injuries after skin contact	: Causes skin irritation. May cause an allergic skin reaction.
Symptoms/injuries after eye contact	: Direct contact with the eyes is likely to be irritating.
Symptoms/injuries after ingestion	: May be fatal if swallowed and enters airways.
Chronic symptoms	: May cause an allergic skin reaction. May cause cancer. Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No information available.

12.2. Persistence and degradability

PERMATITE 711 GP2 SUPER ADHESIVE / SEALANT	
Persistence and degradability	No information available.

PERMATITE 711 GP2 SUPER ADHESIVE / SEALANT

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12.3. Bioaccumulative potential

PERMATITE 711 GP2 SUPER ADHESIVE / SEALANT	
Bioaccumulative potential	No information available.

12.4. Mobility in soil

PERMATITE 711 GP2 SUPER ADHESIVE / SEALANT	
Ecology - soil	No information available.

12.5. Other adverse effects

Other adverse effects : No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Obtain the consent of pollution control authorities before discharging to wastewater treatment plants.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment.

SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1133 Adhesive, organic, n.o.s. (Contains: Toluene),
UN-No.(DOT) : 1133
DOT NA no. : UN1133
Proper Shipping Name (DOT) : Flammable Adhesive, organic, n.o.s.
Department of Transportation (DOT) Hazard Classes : 3 - Flammable liquid
Hazard labels (DOT) : 3 – Flammable liquid

Packing group (DOT) : II - Medium Danger
DOT Quantity Limitations Passenger aircraft/rail : 15 kg
(49 CFR 173.27)
DOT Quantity Limitations Cargo aircraft only (49 : 50 kg
CFR 175.75)
DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

Additional information

Other information : No supplementary information available.

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

PERMATITE 711 GP2 SUPER ADHESIVE / SEALANT	
All chemical substances in this product are listed in the EPA (Environment Protection Agency) TSCA (Toxic Substances Control Act) Inventory All the constituents of this preparation are registered in the EINECS inventory or in the ELINCS list	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard Fire hazard

Toluene (108-88-3)	
Listed on United States SARA Section 313	

15.2. International regulations

No additional information available.

15.3. US State regulations

California Proposition 65

This product contains, or may contain, trace quantities of a substance(s) known to the state of California to cause cancer and/or reproductive toxicity

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Toluene (108-88-3)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
No	Yes	No	No	7000b µg/day
Silica: Crystalline, quartz (14808-60-7)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
Yes	No	No	No	Not available
Toluene (108-88-3)				
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S. - Pennsylvania - RTK (Right to Know) List				
Styrene (100-42-5)				
U.S. - Massachusetts - Right To Know List				
Limestone (1317-65-3)				
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List				
Silica: Crystalline, quartz (14808-60-7)				
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List				

SECTION 16: Other information

Indication of changes : Revision 1.0: New SDS Created.
Revision date : 02/02/2015
Other information : Author: BCS.

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
NFPA fire hazard : 3 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.
NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

HMIS III Rating

Health : 2
Flammability : 3
Physical : 0
Personal Protection : N.I.

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

POWER SERVICE PRODUCTS, INC.
SAFETY DATA SHEET



SECTION 1 - IDENTIFICATION

PRODUCT NAME: DIESEL FUEL SUPPLEMENT +CETANE BOOST

Unless otherwise noted, all sections of this SDS apply to each of the following products and part numbers.

PART NUMBERS:

1:400 Treatment Ratio	1016-06, 1016-09, 1025-06, 1025-09, 1025-12, 1080-06, 11016-06, 11016-09, 11025-06, 11025-12, 11080-06
1:1,000 Treatment Ratio	1000, 1128-04, 1060-01
1:1,500 Treatment Ratio	1050-02, 1055-01, 1260-01

COMPANY IDENTIFICATION:

Power Service Products, Inc.
P.O. Box 1089
Weatherford, TX 76086
Email: psp@powerservice.com
Phone: 800-643-9089 or 817-599-9486
Fax: 817-599-4893

Emergency Phone Number: Within USA 1-800-424-9300. Outside USA 001-703-527-3887 (Call Collect).

RECOMMENDED USES: Diesel fuel additive

SECTION 2 – HAZARD(S) IDENTIFICATION

CLASSIFICATION UNDER 29 CFR 1910.1200(d)

(NC=product does not meet classification criteria)

	1:400 Treatment Ratio	1:1000 Treatment Ratio	1:1500 Treatment Ratio
Health Hazard Criteria	Category	Category	Category
Acute Toxicity, Oral:	NC	NC	NC
Acute Toxicity, Dermal:	NC	NC	NC
Acute Toxicity, Inhalation, Vapors:	3	3	3
Skin Corrosion/Irritation:	2	2	2
Serious Eye Damage/Eye Irritation:	2	2	2

Revised: November 3, 2016
Supersedes: September 28, 2015
POWER SERVICE DIESEL FUEL SUPPLEMENT +CETANE BOOST

	1:400 Treatment Ratio	1:1000 Treatment Ratio	1:1500 Treatment Ratio
Health Hazard Criteria	Category	Category	Category
Respiratory Sensitization:	NC	NC	NC
Skin Sensitization:	NC	NC	NC
Germ Cell Mutagenicity:	NC	NC	NC
Carcinogenicity:	2	2	2
Reproductive Toxicity:	NC	NC	NC
Specific Target Organ Toxicity, Single Exposure:	3	3	3
Specific Target Organ Toxicity, Repeated or Prolonged Exposure:	NC	NC	NC
Aspiration Hazard:	1	1	1

	1:400 Treatment Ratio	1:1000 Treatment Ratio	1:1500 Treatment Ratio
Physical Properties Criteria	Category	Category	Category
Explosives:	NC	NC	NC
Flammable Gases:	NC	NC	NC
Flammable Aerosols:	NC	NC	NC
Oxidizing Gases:	NC	NC	NC
Gases Under Pressure:	NC	NC	NC
Flammable Liquids:	3	3	3
Flammable Solids:	NC	NC	NC
Self-Reactive Chemicals:	NC	NC	NC
Pyrophoric Liquids:	NC	NC	NC
Pyrophoric Solids:	NC	NC	NC
Self-Heating Chemicals:	NC	NC	NC
Chemicals Which, in Contact with Water, Emit Flammable Gases:	NC	NC	NC
Oxidizing Liquids:	NC	NC	NC
Oxidizing Solids:	NC	NC	NC
Organic Peroxides:	NC	NC	NC
Corrosive to Metals:	NC	NC	NC

LABEL SIGNAL WORD, HAZARD STATEMENTS, SYMBOLS AND PRECAUTIONARY STATEMENTS UNDER 29 CFR 1910.1200(f):

Please see the Note regarding product labeling in Section 16.

	1:400 Treatment Ratio	1:1000 Treatment Ratio	1:1500 Treatment Ratio
Signal Word	Danger	Danger	Danger

Hazard Statement(s): Flammable liquid and vapor. Toxic if inhaled. May be fatal if swallowed and enters airways. Harmful if swallowed. Causes skin and serious eye irritation. May cause respiratory irritation and drowsiness or dizziness.

Symbols: The following symbols are for all treatment ratios.



Precautionary Statement(s): Keep away from sparks and open flames. No smoking. Keep container tightly closed. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing vapors. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling. Wear protective gloves and eye protection. Store locked up and in cool, well ventilated place. KEEP OUT OF REACH OF CHILDREN.

Hazards Not Otherwise Classified: None

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

The specific chemical identity and exact concentration percentage has been withheld as a Trade Secret. Specific chemical information will be made available to health professionals in accordance with 29 CFR 1910.1200.

INGREDIENTS CLASSIFIED AS HEALTH HAZARDS

TREATMENT RATIO 1:400			
Chemical Name	Common Name/Synonyms	CAS Number	Concentration (%)
Petroleum Distillates	Trade secret	Trade secret	25 - 75
Hydroxy alkoxylate	Trade secret	Trade secret	5 - 15
Alkyl Nitrates	Trade secret	Trade secret	2 – 8
Aromatic hydrocarbons	Trade secret	Trade secret	0.5 - 2
Naphthalene	Not available	91-20-3	0.05 – 0.2

TREATMENT RATIO 1:1000			
Chemical Name	Common Name/Synonyms	CAS Number	Concentration (%)
Petroleum Distillates	Trade secret	Trade secret	35 - 85
Alkyl Nitrates	Trade secret	Trade secret	5 - 15
Aromatic Hydrocarbons	Trade secret	Trade secret	1 - 5
Hexan-1-ol, 2-ethyl	Trade secret	Trade secret	1 - 5
Naphthalene	Not available	91-20-3	0.1 – 0.5

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TREATMENT RATIO 1:1500

Chemical Name	Common Name/Synonyms	CAS Number	Concentration (%)
Petroleum Distillates	Trade secret	Trade secret	25 - 75
Alkyl Nitrates	Trade secret	Trade secret	8 - 22
Aromatic Hydrocarbons	Trade secret	Trade secret	2 - 8
Hexan-1-ol, 2-ethyl	Trade secret	Trade secret	1 – 5
Naphthalene	Not available	91-20-3	0.1 – 0.5

SECTION 4 - FIRST AID MEASURES

As a precaution, exposure to liquids, vapors, mists and fumes should be minimized.

EYE CONTACT: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice.

SKIN CONTACT: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs get medical advice/attention.

INHALATION: Remove person to fresh air and keep comfortable for breathing. Call a doctor.

INGESTION: If swallowed, IMMEDIATELY call a doctor. Do NOT induce vomiting.

SECTION 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, alcohol-resistant foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

SPECIFIC HAZARDS: Vapors are heavier than air and may travel along the ground to a distant ignition source and flash back. See Section 10 for Stability and Reactivity. **NOTE:** EMPTY CONTAINERS CONTAIN COMBUSTIBLE VAPORS THAT CAN CAUSE FLASH FIRES OR EXPLOSIONS. CONTAINERS ARE SINGLE-TRIP CONTAINERS AND SHOULD NOT BE USED FOR ANY REASON AFTER BEING EMPTIED. DO NOT USE CUTTING TORCH EQUIPMENT OR ANY OTHER FLAME OR OTHER SOURCES OF IGNITION ON ANY EMPTY CONTAINER.

PROTECTIVE EQUIPMENT AND PRECAUTIONS: Use standard protective equipment including self-contained breathing apparatus (SCBA).

SECTION 6 - ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES: Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas. Eliminate

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all sources of ignition in the vicinity of the spill or released vapor. See Section 2 for Hazards Identification. See Section 4 for First Aid Measures. See Section 5 for Fire Fighting Information. See Section 8 for Personal Protective Equipment.

SPILL CONTAINMENT AND CLEAN-UP: Eliminate potential sources of ignition. Stop leak if it can be done without risk. Dike and contain spill. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly. A vapor suppressing foam may be used to reduce vapors. Local, state and federal laws and/or regulations may apply to releases and disposal of this material, as well as those materials and items employed in the clean-up releases. The user/responder will need to determine which local, state and federal laws and/or regulations are applicable. The National Response Center can be reached at 1-800-424-8802.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Avoid contact with eyes and skin. Use only with adequate ventilation. Use proper bonding and/or grounding procedures. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Keep away from ignition sources such as heat, sparks, and flames. No smoking.

CONDITIONS FOR SAFE STORAGE: DO NOT USE OR STORE near heat, sparks, or flame. USE AND STORE ONLY IN A WELL-VENTILATED AREA. Handle containers with care. Keep container tightly closed when not in use. Store locked up.

STORAGE TEMPERATURE:

Treatment Ratio	Part Numbers:	Storage Temperature:
1:400 Treatment Ratio	1016-06, 1016-09, 1025-06, 1025-12, 1080-06, 11016-06, 11016-09, 11025-06, 11025-12, 11041-04, 11080-06	-20°F to 104°F (-29°C to 40°C)
1:1,000 Treatment Ratio	1000, 1128-04, 1060-01	0°F to 104°F (-18°C to 40°C)
1:1,500 Treatment Ratio	1050-02, 1055-01, 1260-01	10°F to 104°F (-12°C to 40°C)

EMPTY CONTAINER WARNING: EMPTY CONTAINERS MAY CONTAIN COMBUSTIBLE VAPORS AND CAN BE DANGEROUS. SEE SECTION 5 FOR FIRE AND EXPLOSION HAZARD DATA.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:

	CAS #	OSHA	ACGIH	NIOSH				Note
		PEL	TLV	STEL	REL	STEL	IDLH	
Ethylbenzene	100-41-4	100 ppm	20 ppm	not est.	100 ppm	125 ppm	800 ppm (LEL)	n/a

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	CAS #	OSHA	ACGIH	NIOSH				Note
		PEL	TLV	STEL	REL	STEL	IDLH	
Naphthalene	91-20-3	10 ppm	10 ppm	not est.	10 ppm	15 ppm	250 ppm	skin
Petroleum Distillates	n/a	500 ppm	not est.	not est.	not est.	not est.	not est.	n/a
Cumene	98-82-8	50 ppm	50 ppm	not est.	50 ppm	not est.	900 ppm (LEL)	Skin
Toluene	108-88-3	100 ppm	20 ppm	not est.	100 ppm	150 ppm	500 ppm	Skin
Hydroxy Alkoxyate	Proprietary	50 ppm	20 ppm	not est.	5 ppm	not est.	not est.	skin

ENGINEERING CONTROLS: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Local exhaust ventilation is recommended to control exposure.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Eyes and Face: Eye protection such as safety glasses or chemical goggles is recommended if contact is likely.

Skin: Protective chemical/oil resistant gloves are recommended. Wear additional protective clothing as appropriate.

Respiratory: Wear a NIOSH/MSHA approved respirator as necessary.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Practice good housekeeping.

NOTE: These precautions are for room temperature handling.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

	1:400 Treatment Ratio	1:1000 Treatment Ratio	1:1500 Treatment Ratio
Appearance	Liquid, brown	Liquid, brown	Liquid, brown
Odor	Aromatic solvent	Aromatic solvent	Aromatic solvent
Odor Threshold	Not available	Not available	Not available
pH	Not applicable	Not applicable	Not applicable
Melting point/Freezing point	Not available	Not available	Not available
Initial Boiling Point and Boiling Range	221.5°F (105.3°C)	262.4°F (128.0°C)	261.7°F (127.6°C)
Flash Point	101°F (38.3°C)	111°F (43.3°C)	107°F (41.7°C)
Evaporation Rate	Not available	Not available	Not available
Flammability	Not available	Not available	Not available
Upper / lower Flammability or Explosive Limits	Not available	Not available	Not available
Vapor Pressure	Not available	Not available	Not available

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	1:400 Treatment Ratio	1:1000 Treatment Ratio	1:1500 Treatment Ratio
Vapor Density	Not available	Not available	Not available
Relative Density/Specific Gravity	0.9238	0.9281	0.9317
Solubility	Not available	Not available	Not available
Partition Coefficient; n-octanol / water	Not available	Not available	Not available
Auto-ignition Temperature	Not available	Not available	Not available
Decomposition temperature	Not available	Not available	Not available
Viscosity	Not available	Not available	Not available
Pour Point	-55°F (-48°C)	-30°F (-34°C)	-15°F (-26°C)

SECTION 10 - STABILITY AND REACTIVITY

REACTIVITY: see Incompatible Materials below

CHEMICAL STABILITY: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

POSSIBILITY OF HAZARDOUS REACTION: Hazardous polymerization will not occur.

CONDITIONS TO AVOID: Flames, high energy ignition sources, and elevated temperatures.

INCOMPATIBLE MATERIALS: May react with strong oxidizing agents, such as; chlorates, nitrates, peroxides, nitrogen oxides, sulfur oxides, etc.; alkalis; nitric acid; sulfuric acid; aluminum; brass; copper; reducing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon oxides, products of incomplete combustion.

SECTION 11 - TOXICOLOGICAL INFORMATION

LIKELY ROUTES OF EXPOSURE

	INGESTION	INHALATION	SKIN CONTACT	EYE CONTACT	SKIN ABSORPTION
1:400 Treatment Ratio		X	X	X	X
1:1000 Treatment Ratio		X	X	X	X
1:1500 Treatment Ratio		X	X	X	X

SYMPTOMS RELATED TO PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS: Breathing of high vapor concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness. The vapor or fumes from this material may cause respiratory irritation. Breathing this material at elevated concentrations causes central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion or disorientation. At

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extreme exposures, central nervous system effects may include respiratory depression, tremors, or convulsions, loss of consciousness, coma or death.

DELAYED AND IMMEDIATE EFFECTS AND CHRONIC EFFECTS FROM SHORT- AND LONG-TERM EXPOSURE: Repeated skin exposure to a component of this product may cause irritation, even a burn; may cause a more severe response on covered skin, such as under clothing or gloves. Inhalation exposure to a component of this product has caused fetotoxicity in the presence of maternal toxicity in animals.

NUMERICAL MEASURES OF TOXICITY

Note: the information provided below are estimates; testing of the product is not available.

Treatment Ratio	Acute Oral Toxicity (ATE _{mix} estimate)	Acute Dermal Toxicity (ATE _{mix} estimate)	Acute Inhalation (ATE _{mix} estimate)
1:400 Treatment Ratio	Does not meet criteria	Does not meet criteria	7.12 (vapors)
1:1,000 Treatment Ratio	Does not meet criteria	Does not meet criteria	8.53 (vapors)
1:1,500 Treatment Ratio	Does not meet criteria	Does not meet criteria	7.68 (vapors)

SENSITIZATION: No information available.

MUTAGENICITY: No information available.

CARCINOGENICITY LISTINGS – the following chemicals are listed as indicated:

Chemical	List
Cumene	IARC, NTP
Ethylbenzene	IARC
Naphthalene	IARC, NTP

REPRODUCTIVE TOXICITY: No information available.

TERATOGENICITY/EMBRYOTOXICITY: Hydroxy Alkoxylate has caused fetotoxicity with maternal toxicity. This product contains a component of a complex mixture (Xylenes (1330-20-7)) that has been shown to cause teratogenicity and/or embryotoxicity.

SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE): Respiratory tract irritation, drowsiness/dizziness.

SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): No information available

ASPIRATION HAZARD: Aspiration hazard identified.

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SECTION 12 - ECOLOGICAL INFORMATION

ECOTOXICITY: This material is expected to be toxic to aquatic organisms.

PERSISTENCE AND DEGRADABILITY: No information available.

BIOACCUMULATIVE POTENTIAL: No information available.

MOBILITY IN SOIL: No information available.

OTHER ADVERSE EFFECTS: No information available.

SECTION 13 - DISPOSAL CONSIDERATIONS

RCRA Information: Disposal of unused product may be subject to RCRA hazardous waste regulations (40 CFR Part 261). Disposal of the used product may also be regulated as hazardous waste due to resulting mixture characteristics, mixture components or product use. Such changes to the product may result in different and/or additional hazardous waste codes. Potential RCRA waste code based on the product as shipped: D001 IGNITABILITY

State or local laws may impose additional regulatory requirements regarding disposal. *Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.*

EMPTY CONTAINER WARNING: EMPTY CONTAINERS MAY CONTAIN COMBUSTIBLE VAPORS AND CAN BE DANGEROUS. SEE SECTION 5 FOR FIRE AND EXPLOSION HAZARD DATA. Dispose or recycle empty containers appropriately per local, state and federal regulations.

SECTION 14 - TRANSPORTATION INFORMATION

The following part numbers are not regulated by DOT:

1:400 Treatment Ratio	1016-06, 1016-09, 1025-06, 1025-09, 1025-12, 1080-06, 11016-06, 11016-09, 11025-06, 11025-12, 1080-06
1:1,000 Treatment Ratio	1128-04
1:1,500 Treatment Ratio	1050-02, 1055-01

The following part numbers are regulated by DOT:

1:1,000 Treatment Ratio	1060-01, 1000
1:1,500 Treatment Ratio	1260-01

PROPER SHIPPING NAME: Combustible Liquid, N.O.S., (Petroleum Distillates) Marine Pollutant (2-Ethylhexyl Nitrate & 1,3,5-trimethylbenzene) RQ (Xylene, Naphthalene)

HAZARD CLASS: Combustible Liquid

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I.D. NUMBER: NA 1993
PACKING GROUP: III
PLACARDING: Combustible Liquid
MARINE POLLUTANT: Yes
PRODUCT RQ: 100 lbs. (45.45 kg) – Xylene, Naphthalene

SECTION 15 - REGULATORY INFORMATION

§14(a) Consumer Product Safety Act General Certificate of Conformity

Power Service Products, Inc. certifies that this product meets the statutory and regulatory requirements of the US Consumer Products Safety Act, the Federal Hazardous Substances Act, and the Poison Prevention Packaging Act of 1970, as applicable. The Power Service products are manufactured in the United States in Weatherford, Texas, unless otherwise indicated on the product label. The product manufacture lot code is stamped on the product container. This Certification is based upon a reasonable testing program conducted by Power Service Products, Inc. which includes a quality control program incorporating, as necessary, confirmation of compliance by component suppliers. Third-party testing is not required to certify compliance. Further details may be obtained by contacting the Power Service Products, Inc. EHS Manager at 1-800-643-9089.

Contents of this SDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA STATUS:

All chemical substances found in this product comply with the Toxic Substances Control Act inventory reporting requirements.

EPA SARA TITLE III CHEMICAL LISTINGS:

Section 302 Extremely Hazardous Substances: None

Sections 311/ 312 Hazard Class:

Acute Health Effects: Yes Sudden Release of Pressure Hazard: No
Chronic Health Effects: Yes Reactivity Hazard: No
Fire Hazard: Yes

NFPA (NATIONAL FIRE PROTECTION ASSOCIATION) RATING:

HEALTH: 2
FIRE: 2
REACTIVITY: 0

Section 313:

Specific chemical information is being withheld as a Trade Secret. The following chemicals subject to the reporting requirements of EPCRA Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (40 CFR Part 372) may be present in this product at a concentration that does not exceed the specified upper weight percentage.

Treatment Ratio	CAS Number	Chemical Name	Max %
1:400 Treatment Ratio	100-41-4	Ethylbenzene	1.5
	Not available	Glycol Ether Category	8.0
	91-20-3	Naphthalene	0.2
1:1000 Treatment Ratio	100-41-4	Ethylbenzene	0.2
	Not available	Glycol Ether Category	0.4
	91-20-3	Naphthalene	0.3
1:1,500 Treatment Ratio	100-41-4	Ethylbenzene	0.2
	Not available	Glycol Ether Category	0.6
	91-20-3	Naphthalene	0.5

State or local laws may impose additional regulatory requirements for components of this material. It is the responsibility solely of the Employer to maintain compliance with State and Local reporting.

This product contains a chemical known to the state of California to cause cancer and/or birth defects or other reproductive harm: ethylbenzene, toluene, cumene, naphthalene.

SECTION 16 – OTHER INFORMATION

DATE OF PREPARATION / REVISION: November 3, 2016

NOTE regarding product labeling: The OSHA Hazard Communication Standard applies to hazardous chemicals known to be present in the workplace. However, the labeling and Safety Data Sheet requirements do not apply to consumer products when they are used in the workplace for the purposes intended by the manufacturer and the use results in a duration and frequency of exposure which is not greater than the range of exposures that could reasonably be experienced by consumers when used for the intended purpose. Power Service Products intends for product packaged in 1 gallon or smaller containers to be used by consumers and has labeled those containers as required under the Consumer Product Safety Commission regulations. Power Service Products intends for product packaged in containers larger than 1 gallon to be used in the workplace and has labeled those products as required by the OSHA Hazard Communication Standard. The Consumer Product Safety Commission and OSHA Hazard Communication Standard labeling requirements are different and variations between the consumer and industrial labels may occur. It is the employer's responsibility to purchase the appropriate product for use in the workplace.

The information contained herein is offered in good faith and is believed to be accurate based on the data available to us as of the date of SDS preparation. The information in this document applies to this specific product as supplied. It may not be appropriate for this product if the product is used in combination with other materials. The information in this document is not intended to constitute product performance information. Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product. No statement shall be construed as an endorsement of any product or process. The recommended industrial hygiene and safe handling procedures are believed to be valid in the context of the intended use as described in product labeling. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate. You are urged to obtain material safety data sheets for all products you buy, process, use or distribute, and are encouraged to advise those who may come in contact with such products of the information

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contained therein. Regulatory requirements are subject to change and may differ between locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. No warranty or guarantee is expressed or implied with respect to this product, the accuracy and sufficiency of the data or recommendations herein, or the results to be obtained from the use of this product. IN NO EVENT SHALL POWER SERVICE PRODUCTS, INC. BE LIABLE FOR ANY LOSS, CLAIM, DAMAGE OR LIABILITY OF ANY KIND, WHICH MAY ARISE FROM OR IN CONNECTION WITH THE INFORMATION CONTAINED IN THIS DOCUMENT OR FROM THE USE, HANDLING OR STORAGE OF THE PRODUCT BY THE BUYER/USER, WHETHER DIRECT, INDIRECT, OR CONSEQUENTIAL, OR FOR ANY CLAIM BY ANY THIRD PARTY, BEYOND THE PURCHASE PRICE OR REPLACEMENT OF THE PRODUCT IN CONNECTION WITH WHICH SUCH LOSS, CLAIM, DAMAGE OR LIABILITY AROSE.

THE FOREGOING LIMITATIONS APPLY REGARDLESS OF THE CAUSES OR CIRCUMSTANCES GIVING RISE TO SUCH LOSS, CLAIM, DAMAGE OR LIABILITY, EVEN IF SUCH LOSS, CLAIM, DAMAGE, OR LIABILITY IS BASED ON NEGLIGENCE OR OTHER TORTS OR BREACH OF CONTRACT.

Acetylene, dissolved

Safety Data Sheet P-4559

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1979 Revision date: 10/13/2016 Supersedes: 02/03/2016

SECTION: 1. Product and company identification

1.1. Product identifier

Product form : Substance
Name : Acetylene, dissolved
CAS No : 74-86-2
Formula : C₂H₂
Other means of identification : Acetylen, ethine, ethyne, narycylene

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Industrial use. Use as directed.

1.3. Details of the supplier of the safety data sheet

Praxair, Inc.
10 Riverview Drive
Danbury, CT 06810-6268 - USA
T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146
www.praxair.com

1.4. Emergency telephone number

Emergency number : Onsite Emergency: 1-800-645-4633

CHEMTREC, 24hr/day 7days/week
— Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887
(collect calls accepted, Contract 17729)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

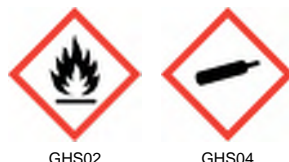
GHS-US classification

Flam. Gas 1 H220
Dissolved gas H280

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS02

GHS04

Signal word (GHS-US) :

DANGER

Hazard statements (GHS-US) :

H220 - **EXTREMELY FLAMMABLE GAS**
H231 - MAY REACT EXPLOSIVELY EVEN IN THE ABSENCE OF AIR AT ELEVATED PRESSURE AND/OR TEMPERATURE
H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED
OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION
CGA-HG04 - MAY FORM EXPLOSIVE MIXTURES WITH AIR

Precautionary statements (GHS-US) :

P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from Heat, Open flames, Sparks, Hot surfaces. - No smoking
P271+P403 - Use and store only outdoors or in a well-ventilated place
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely
P381 - Eliminate all ignition sources if safe to do so
P501 - Dispose of contents/container in accordance with container Supplier/owner instructions
CGA-PG05 - Use a back flow preventive device in the piping
CGA-PG13 - Fusible plugs in the top, bottom, or valve melt at 98 °C to 107 °C (208 °F to 224 °F). Do not discharge at pressures above 15 psig (103 kPa)

Acetylene, dissolved

Safety Data Sheet P-4559

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

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CGA-PG06 - Close valve after each use and when empty
CGA-PG11 - Never put cylinders into unventilated areas of passenger vehicles
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)

2.3. Other hazards

Other hazards not contributing to the classification : For safety reasons, the acetylene is dissolved in acetone (CAS # 67-64-1; Flam. Liq. 2, Eye Irrit. 2, STOT SE 3) in the gas container. Vapor of the solvent is carried away as impurity when the acetylene is extracted from the gas container. The concentration of the solvent vapor in the gas is lower than the concentration limits to change the classification of the acetylene.

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/Information on ingredients

3.1. Substance

Name	Product identifier	%
Acetylene, dissolved (Main constituent)	(CAS No) 74-86-2	100

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

First-aid measures after skin contact : The liquid may cause frostbite. For exposure to liquid, immediately warm frostbite area with warm water not to exceed 105°F (41°C). Water temperature should be tolerable to normal skin. Maintain skin warming for at least 15 minutes or until normal coloring and sensation have returned to the affected area. In case of massive exposure, remove clothing while showering with warm water. Seek medical evaluation and treatment as soon as possible.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Contact an ophthalmologist immediately.. Get immediate medical attention.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects, both acute and delayed

No additional information available

4.3. Indication of any immediate medical attention and special treatment needed

Obtain medical assistance.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : See below. See CGA Pamphlet SB-4, *Handling Acetylene Cylinders in Fire Situations*, for further information.

5.2. Special hazards arising from the substance or mixture

Fire hazard : **EXTREMELY FLAMMABLE GAS.** If venting or leaking gas catches fire, do not extinguish flames. Flammable vapors may spread from leak, creating an explosive reignition hazard. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product handling point. Explosive atmospheres may linger. Before entering an area, especially a confined area, check the atmosphere with an appropriate device.

Explosion hazard : **EXTREMELY FLAMMABLE GAS.** Forms explosive mixtures with air and oxidizing agents.

Reactivity : No reactivity hazard other than the effects described in sub-sections below.

Acetylene, dissolved

Safety Data Sheet P-4559

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1979 Revision date: 10/13/2016 Supersedes: 02/03/2016

5.3. Advice for firefighters

- | | |
|--|---|
| Firefighting instructions | : Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection. |
| Protection during firefighting | : Compressed gas: asphyxiant. Suffocation hazard by lack of oxygen. |
| Special protective equipment for fire fighters | : Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters. |
| Specific methods | : Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas containers to rupture. Cool endangered containers with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems

Stop flow of product if safe to do so

Use water spray or fog to knock down fire fumes if possible

Continue water spray from protected position until container stays cool. |
| Other information | : Acetylene containers are provided with pressure relief devices designed to vent contents when exposed to elevated temperature. |

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- | | |
|------------------|--|
| General measures | : Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. Evacuate area. Ensure adequate ventilation. Stop leak if safe to do so. |
|------------------|--|

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent waste from contaminating the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

6.3. Methods and material for containment and cleaning up

No additional information available

6.4. Reference to other sections

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- | | |
|-------------------------------|--|
| Precautions for safe handling | : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment

Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g. wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16. |
|-------------------------------|--|

Acetylene, dissolved

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7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store only where temperature will not exceed 125°F (52°C). Post "No Smoking/No Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g., NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16

OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE: When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

Storage area : Acetylene trailers are designed and intended for outdoor use. Acetylene storage in excess of 2.500 cu ft (70.79 cubic meters) is prohibited in buildings and other occupancies.

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Acetylene, dissolved (74-86-2)	
ACGIH	Not established
USA OSHA	Not established

8.2. Exposure controls

Appropriate engineering controls : An explosion-proof local exhaust system or a mechanical system is acceptable if it can prevent oxygen deficiency and keep hazardous fumes and gases below all applicable exposure limits in the worker's breathing area. During welding, ensure that there is adequate ventilation to keep worker exposure below applicable limits for fumes, gases, and other by-products of welding. Do not breathe fumes or gases. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes, or may cause other similar discomfort.

Eye protection : Wear safety glasses with side shields.

Skin and body protection : As needed for welding, wear hand, head, and body protection to help prevent injury from radiation and sparks. (See ANSI Z49.1.) At a minimum, this includes welder's gloves and protective goggles, and may include arm protectors, aprons, hats, and shoulder protection as well as substantial clothing.

Respiratory protection : When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

Thermal hazard protection : Wear cold insulating gloves when transfilling or breaking transfer connections.

Environmental exposure controls : Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

Other information : Consider the use of flame resistant anti-static safety clothing. Wear leather safety gloves and safety shoes when handling cylinders.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Gas

Acetylene, dissolved

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Appearance	: Colorless, odorless gas.
Molecular mass	: 26 g/mol
Color	: Colorless.
Odor	: Garlic like. Poor warning properties at low concentrations.
Odor threshold	: No data available
pH	: Not applicable.
Relative evaporation rate (butyl acetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable.
Melting point	: -80.8 °C (-113.4°F)
Freezing point	: No data available
Boiling point	: -84 °C (-119.2°F)
Flash point	: -17 °C (1.4°F)
Critical temperature	: 36 °C (97°F)
Auto-ignition temperature	: 305 °C (581°F)
Decomposition temperature	: 635 °C (1175°F)
Flammability (solid, gas)	: 2.5 - 100 vol %
Vapor pressure	: 44 bar (623 psig)
Critical pressure	: 61.38 bar (875 psig)
Relative vapor density at 20 °C	: No data available
Relative density	: Not applicable.
Density	: 0.0012 g/cm³ (at 0 °C)
Relative gas density	: 0.9
Solubility	: Water: 1185 mg/l
Log Pow	: 0.37
Log Kow	: Not applicable.
Viscosity, kinematic	: Not applicable.
Viscosity, dynamic	: Not applicable.
Explosive properties	: Not applicable.
Oxidizing properties	: None.
Explosion limits	: No data available

9.2. Other information

Sublimation point	: -83.3 °C
Gas group	: Dissolved gas

SECTION 10: Stability and reactivity

10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

Dissolved in a solvent supported in a porous mass. Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

May react explosively even in the absence of air. May decompose violently at high temperature and/or pressure or in the presence of a catalyst. Can form explosive mixture with air. May react violently with oxidants.

10.4. Conditions to avoid

High temperature. High pressure. Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

10.5. Incompatible materials

Forms explosive acetylides with copper, silver and mercury. Do not use alloys containing more than 65% copper. Air, Oxidizer. Do not use alloys containing more than 43% silver.

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10.6. Hazardous decomposition products

Thermal decomposition or burning may produce carbon monoxide, carbon dioxide, and hydrogen. The welding and cutting process may form reaction products such as carbon monoxide and carbon dioxide. Other decomposition products of normal operation originate from the volatilization, reaction, or oxidation of the material being worked.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified pH: Not applicable.
Serious eye damage/irritation	: Not classified pH: Not applicable.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: No known ecological damage caused by this product.
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12.2. Persistence and degradability

Acetylene, dissolved (74-86-2)	
Persistence and degradability	Will rapidly degrade by indirect photolysis in air. Will not undergo hydrolysis.

12.3. Bioaccumulative potential

Acetylene, dissolved (74-86-2)	
Log Pow	0.37
Log Kow	Not applicable.
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.

12.4. Mobility in soil

Acetylene, dissolved (74-86-2)	
Mobility in soil	No data available.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

12.5. Other adverse effects

Effect on ozone layer	: No known effects from this product
Effect on the global warming	: No known effects from this product

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations	: Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.
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Acetylene, dissolved

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SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1001 Acetylene, dissolved, 2.1
UN-No.(DOT) : UN1001
Proper Shipping Name (DOT) : Acetylene, dissolved
Hazard labels (DOT) : 2.1 - Flammable gas



DOT Special Provisions (49 CFR 172.102) : N86 - UN pressure receptacles made of aluminum alloy are not authorized
N88 - Any metal part of a UN pressure receptacle in contact with the contents may not contain more than 65% copper, with a tolerance of 1%

Additional information

Emergency Response Guide (ERG) Number : 116 (UN1001)
Other information : No supplementary information available.
Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers:
- Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

Transport by sea

UN-No. (IMDG) : 1001
Proper Shipping Name (IMDG) : Acetylene, dissolved
Class (IMDG) : 2 - Gases
MFAG-No : 116

Air transport

UN-No. (IATA) : 1001
Proper Shipping Name (IATA) : Acetylene, dissolved
Class (IATA) : 2
Civil Aeronautics Law : Gases under pressure/Gases flammable under pressure

SECTION 15: Regulatory information

15.1. US Federal regulations

Acetylene, dissolved (74-86-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

SARA Section 311/312 Hazard Classes	Sudden release of pressure hazard Reactive hazard Fire hazard
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All components of this product are listed on the Toxic Substances Control Act (TSCA) inventory.

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Acetylene, dissolved

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15.2. International regulations

CANADA

Acetylene, dissolved (74-86-2)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Acetylene, dissolved (74-86-2)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

15.2.2. National regulations

Acetylene, dissolved (74-86-2)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on CICR (Turkish Inventory and Control of Chemicals)

15.3. US State regulations

Acetylene, dissolved(74-86-2)

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

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SECTION 16: Other information

Other information

: When using this product in welding and cutting, read and understand the manufacturer's instructions and the precautionary label on the product. Ask your welding products supplier for a copy of Praxair's free safety booklet, P-2035, Precautions and Safe Practices for Gas Welding, Cutting, and Heating, and for other manufacturers' safety publications. For a detailed treatment, get ANSI Z49.1, Safety in Welding, Cutting, and Allied Processes, published by the American Welding Society (AWS), www.aws.org. Order AWS documents from Global Engineering Documents, global.ihs.com. Arcs and sparks can ignite combustible materials. Prevent fires. Refer to NFPA 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hotwork. Do not strike an arc on the container. The defect produced by an arc burn may lead to container rupture

Fumes and gases produced during welding and cutting processes can be dangerous to your health and may cause serious lung disease. **KEEP YOUR HEAD OUT OF FUMES. DO NOT BREATHE FUMES AND GASES.** Use enough ventilation, local exhaust, or both to keep fumes and gases from your breathing zone and the general area. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes; or may cause other similar discomfort. Contaminants in the air may add to the hazard of fumes and gases

When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product

Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information

The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Praxair, Inc, it is the user's obligation to determine the conditions of safe use of the product

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NFPA health hazard

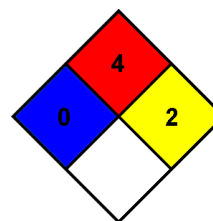
: 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard

: 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

NFPA reactivity

: 2 - Normally unstable and readily undergo violent decomposition but do not detonate. Also: may react violently with water or may form potentially explosive mixtures with water.



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HMIS III Rating

Health	: 2 Moderate Hazard - Temporary or minor injury may occur
Flammability	: 4 Severe Hazard
Physical	: 2 Moderate Hazard

SDS US (GHS HazCom 2012) - Praxair

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

The logo for RectorSeal, featuring the brand name in a bold, sans-serif font inside a red-outlined hexagonal shape.

SAFETY DATA SHEET

CON-COIL™

Foaming acid coil cleaner

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name
Con-Coil™

Product Codes
82622, 82624, 82628

Chemical Family
Inorganic acids

Use
Condenser coil cleaner

Manufacturer's Name
The RectorSeal Corporation
2601 Spenwick Drive
Houston, Texas 77055 USA

Date of Validation
January 23, 2015

Date of Preparation
July 30, 2014

HMIS Codes

Health	4
Flammability	0
Reactivity	0
PPI	X

Emergency Telephone No.
Chemtrec 24 Hours
(800)-424-9300 USA
(703)-527-3887 International

Technical Service Telephone No.
(800)-231-3345 or (713)-263-8001

SECTION 2 – HAZARDS IDENTIFICATION

Emergency Overview**OSHA Hazards**

Target Organ Effect, Toxic by inhalation, Highly toxic by ingestion, Highly toxic by skin absorption, Corrosive

Target Organs

Liver, Kidney

GHS Classification

Acute toxicity, Oral (Category 2)
Acute toxicity, Inhalation (Category 2)
Acute toxicity, Dermal (Category 1)
Skin corrosion (Category 1A)
Serious eye damage (Category 1)

GHS Label elements, including precautionary statements



GHS05: Corrosive

GHS06: Toxic

Signal word: **Danger**

Hazard statement(s)

H300 + H310 **Fatal if swallowed or in contact with skin.**

H314 Causes severe skin burns and eye damage.

H330 **Fatal if inhaled.**

Precautionary statement(s)

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

P264 Wash hands thoroughly after handling.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P284 Wear respiratory protection.

P302 + P350 IF ON SKIN: Gently wash with plenty of soap and water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a **POISON CENTER** or doctor/ physician.

Summary Of Acute Hazards

Hydrofluoric acid is extremely irritating and corrosive to skin and mucous membranes. Speed in moving exposed personnel from contaminated area and in removing HF from skin or eyes is of primary importance. First aid must be started immediately, within seconds, in all cases of contact with hydrofluoric acid in any form. Inhalation of the vapor may cause ulcers of the upper respiratory tract. Concentrations at 50 to 200 ppm are dangerous. Hydrofluoric acid produces burns, which are slow in healing. The subcutaneous tissue may be affected, becoming blanched and bloodless. Gangrene of the affected areas may follow.

SYMPTOMS OF OVEREXPOSURE BY EYE OR SKIN CONTACT, INHALATION, OR INGESTION:

Conjunctivitis, corneal burns; severe skin burns with ulceration; pain behind the breastbone, cough, spitting blood, dyspnea, difficult breathing, bronchopneumonia, cyanosis, shock, muscle spasms, convulsions, jaundice, oliguria, albuminuria, hematuria, nausea, vomiting, abdominal pain, diarrhea; burns and corrosion of mouth, esophagus, stomach and small bowel. Inhalation over exposure may cause lung damage and pulmonary edema. Toxicity from pulmonary absorption of fluoride ion may develop in the liver and kidneys.

SUMMARY OF CHRONIC HAZARDS

Possible mutagen. Respiratory ulcers may occur. Skin injuries may result in gangrene.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Individuals with pre-existing or chronic diseases of the eyes, skin, respiratory system, cardiovascular system, gastrointestinal system, liver, or kidneys may have increased susceptibility to excessive exposure.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient:	Phosphoric Acid
Percentage By Weight:	12.29
CAS Number:	7664-38-2
EC#:	2316332
Ingredient:	Hydrofluoric Acid
Percentage By Weight:	9.69
CAS Number:	7664-39-3
EC#:	231-634-8
Ingredient:	Glycol Butyl Ether
Percentage By Weight:	1.40
CAS Number:	111-76-2
EC#:	203-905-0

SECTION 4 – FIRST AID MEASURES

- If inhaled:** Exposed individuals should be carried at once into an uncontaminated atmosphere. Even in the absence of symptoms, a physician should be called immediately. If breathing has stopped, begin artificial respiration. If inhalation equipment and trained attendant are available, oxygen administration should be started at once. Patient should remain quiet—preferably lying down and kept warm and comfortable. As soon as possible, patient should be given 2.5% to 3% calcium gluconate solution by inhalation, preferably by intermittent positive pressure breathing (IPPB) using a nebulizer, or by nebulizer alone. The patient should be watched carefully for edema of the upper airway with respiratory obstruction. Delayed pulmonary edema is likely in patients with burns of the skin on the face or neck. If pulmonary edema develops, the patient should be placed in IPPB with positive end - expiratory pressure (PEEP). The administration of respiratory care should be closely supervised and performed by qualified personnel. Stimulants should not be given unless ordered by a physician. Under no circumstances should a patient be permitted (to return to work or go home.)
- If on skin:** Workers who have had contact with hydrofluoric acid should be subjected immediately to a drenching shower of water. The clothing should be removed as rapidly as possible, even while the victim is in the shower, and medical assistance obtained immediately. It is essential that the exposed area be washed with copious amounts of water for a sufficient period of time to remove all hydrofluoric acid from the skin (5 minutes). Calcium gluconate gel (2.5%) should be rubbed in continuously until pain has completely subsided. Personnel who apply the gel should be sure to wear rubber gloves to prevent skin contamination with the HF. Calcium gluconate gel is the preferred treatment but an alternative treatment is using an iced aqueous or alcoholic solution, 0.13% (1:750) of benzalkonium chloride (zephiran chloride); and iced 70% alcohol solution; or and ice-cold saturated solution of magnesium sulfate (epsom salt) should be applied for at least 30 minutes. If the burn is in

such an area that it is impractical to immerse the part, then the iced solution should be applied with saturated compresses, which should be changed at least every two minutes. The physician should be available by then to administer further treatment before completion of the iced solution treatment. However, if a physician is not available by that time, the treatment with one of the iced solutions should be continued for two to four hours. In cases of overexposure due to HF, as in skin burns of greater than approximately 25 sq. inches in area, hypocalcemia may be present. Therefore, systemic administration of calcium gluconate may be necessary. Frequent monitoring of serum calcium, renal and hepatic functions are necessary.

- If in eyes: If even minute quantities of hydrofluoric acid enter the eyes, they should be immediately irrigated with running water for 5 minutes. The eyelids should be held apart during the irrigation to insure contact of water with all accessible tissue of the eyes and lids. Immediately following irrigation with water, a 1% calcium gluconate solution should be used to wash the eyes thoroughly for 5-10 minutes, and then instilled every 2-3 hours as drops. A physician, preferably an eye specialist, should be called in at once. No oils or oily ointment should be used unless ordered by the physician.
- If swallowed: Swallowing of hydrofluoric acid causes burns of the mucous membrane of the mouth, throat, esophagus and the stomach. The patient should be encouraged to immediately drink a large amount of water or milk with added milk of magnesia. Do not induce vomiting. Call a physician immediately.

SECTION 5 – FIRE FIGHTING MEASURES

Extinguishing Media

Use agents appropriate for surrounding fires.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus (SCBA) and other protective clothing. Hazardous decomposition products possible (see Section 10). Evacuate immediate area.

Unusual Fire And Explosion Hazards: Material can generate explosive hydrogen gas on contact with certain metals and reacts violently with water. Runoff from fire control may cause pollution. Neutralize runoff with sodium bicarbonate.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled: Evacuate area and keep upwind until gas has dispersed. Dike spill. Dilute with water fog (direct application of alkali may cause violent splattering). Neutralize with sodium bicarbonate. Persons not wearing protective equipment and clothing should be restricted from areas of spills or leaks until clean up has been completed.

SECTION 7 – HANDLING AND STORAGE

Precautions To Be Taken In Handling And Storing: Keep container closed and upright when not in use.

Do not store near heat, sparks, or open flames. This product will attack glass, concrete and certain metals.

Store only in plastic containers. DO NOT USE METAL CANS.

Other Precautions: Refrain from splashing product when pouring. Avoid all contact with skin or clothing. Empty containers may contain residues and vapors.

KEEP OUT OF REACH OF CHILDREN.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredient	Units
Phosphoric Acid	
ACGIH TLV:	1 mg/m ³
OSHA PEL:	1 mg/m ³
Hydrofluoric Acid	
ACGIH TLV:	3 ppm
OSHA PEL:	3 ppm
OSHA STEL:	6 ppm
Glycol Butyl Ether	
ACGIH TLV:	25 ppm
OSHA PEL:	25 ppm

Respiratory Protection (Specify Type): In confined poorly ventilated areas, use NIOSH/MSHA approved air purifying or supplied air purifying or supplied air respirators.

Ventilation – Local Exhaust: Acceptable

Special: N/A

Mechanical (General): Preferable

Other: N/A

Protective Gloves: Wear acid resistant gloves (neoprene, PVC, butyl rubber).

Eye Protection: Full-face shield and chemical splash goggles (ANSI Z-87.1 or equivalent).

Other Protective Clothing Or Equipment: Acid resistant vinyl or polyethylene coated coveralls.

Work/Hygienic Practices: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling point:	> 212°F (100°C) @ 760mm Hg
Specific gravity (H2O = 1):	1.09
Vapor pressure (mmHg):	17 @ 68°F (20°C)
Melting point:	N/A
Vapor Density (Air = 1):	N/A
Evaporation rate (Ethyl Acetate = 1):	< 1
Appearance/Odor:	Clear pink liquid/Irritating odor
Solubility in water:	Soluble
Volatile Organic Compounds (VOC) Level:	< 10 g/L per SCAQMD Test Method 316A
Flash point:	None
Lower explosion limit:	N/D
Upper explosion limit:	N/D

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable

Conditions To Avoid: Uncontrolled contact with water and active metals. Excessive heat will cause pressure build-up in container.

Incompatibility (Materials To Avoid): Alkalies, most metals, cyanides, sulfides, glass and ceramics.

Hazardous Decomposition Products: Fluorides and hydrogen gas on contact with certain metals; these fumes can be highly corrosive.

Hazardous Polymerization: Will not occur, however, non-hazardous endothermic polymerization may occur in both the liquid and gaseous phases.

SECTION 11 – TOXICOLOGY INFORMATION

Chronic Health Hazards

No ingredient in this product is an IARC, NTP or OSHA Listed carcinogen.

Toxicology Data

Ingredient Name

Phosphoric Acid

Oral-Rat LD50:	1530 mg/kg
Inhalation-Rat LCLo:	N/D

Hydrofluoric Acid

Oral-Rat LD50:	5045 mg/kg
Inhalation-Rat LC50:	966 PPM/1H

Toxicology Data (cont.)

Glycol Butyl Ether

Oral-Rat LD50: 470 mg/kg

Inhalation-Rat LC50: 2900 mg/m³

SECTION 12 – ECOLOGICAL INFORMATION

Ecological Data

Ingredient Name:	Phosphoric Acid
Food Chain Concentration Potential	None
Waterfowl Toxicity	N/A
BOD	None
Aquatic Toxicity	138 ppm/24 hr/mosquito fish/TLm

Ingredient Name:	Hydrofluoric Acid
Food Chain Concentration Potential	None
Waterfowl Toxicity	N/A
BOD	None
Aquatic Toxicity	60 ppm/fish/lethal

Ingredient Name:	Glycol Butyl Ether
Food Chain Concentration Potential	None
Waterfowl Toxicity	N/A
BOD	26%
Aquatic Toxicity	1000 ppm/24 hr/brine shrimp/TLm

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Classification: Corrosive(D002)**Disposal Method:** Neutralization

RCRA classified hazardous waste. Dispose of absorbed materials and liquid waste in accordance with all local, state and federal regulations.

SECTION 14 – TRANSPORTATION INFORMATION

DOT:	UN3264, Corrosive Liquid, Acidic, Inorganic, N.O.S. (Hydrofluoric and Phosphoric Acid), Class 8, PG II, ERG#154
Ocean (IMDG):	UN3264, Corrosive. Liquid, Acidic, Inorganic, N.O.S. (Hydrofluoric and Phosphoric Acid), Class 8, PG II, EMS-No: F-A, S-B
Air (IATA):	UN3264, Corrosive Liquid, Acidic, Inorganic, N.O.S. (Hydrofluoric and Phosphoric Acid), Class 8, PG II, ERG#154
WHMIS (Canada):	Class E

SECTION 15 – REGULATORY INFORMATION

Regulatory Data

Ingredient Name:	Phosphoric Acid
SARA 313	Yes
TSCA Inventory	Yes
CERCLA RQ	5,000 lb.
RCRA Code	N/A

Ingredient Name:	Hydrofluoric Acid
SARA 313	Yes
TSCA Inventory	Yes
CERCLA RQ	100 lb.
RCRA Code	N/A

Ingredient Name:	Glycol Butyl Ether
SARA 313	Yes
TSCA Inventory	Yes
CERCLA RQ	N/A
RCRA Code	N/A

SECTION 16 – OTHER INFORMATION

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200).

The information herein is given in good faith, but no warranty, expressed or implied is made.

Consult RectorSeal for further information: (713) 263-8001

The logo for RectorSeal, featuring the brand name in a bold, sans-serif font inside a stylized red and white hexagonal border.

SAFETY DATA SHEET

GOLD™ 844L

Heavy body, low VOC PVC solvent cement

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name

Gold™ 844L Low VOC

Product Codes

55950, 55951, 55952, 55954, 55955

Chemical Family

Organic

Use

PVC solvent cement

Manufacturer's Name

The RectorSeal Corporation
2601 Spenwick Drive
Houston, Texas 77055 USA

Date of Validation

January 23, 2015

Date of Preparation

October 27, 2014

HMIS Codes

Health	2
Flammability	3
Reactivity	1
PPI	B

Emergency Telephone No.

Chemtrec 24 Hours
(800)-424-9300 USA
(703)-527-3887 International

Technical Service Telephone No.

(800)-231-3345 or (713)-263-8001

SECTION 2 – HAZARDS IDENTIFICATION

GHS CLASSIFICATION**Physical Hazards**

Flammable Liquid, Category 2

Health Hazards

Acute Toxicity:

Oral: Category 4

Dermal: Category 5

Inhalation: Category 4

Skin Corrosion/Irritation: Category 3

Serious Eye Damage/Eye Irritation: Category 2A

Skin Sensitization: Not Classified

Respiratory Sensitization: Not Classified

Germ Cell Mutagenicity: Not Classified

Carcinogenicity: Category 2

Reproductive Toxicology: Not Classified

Target Organ Systemic Toxicity - Single Exposure: Category 3

Target Organ Systemic Toxicity - Repeated Exposure: Not Classified

Aspiration Toxicity: Not Classified

GHS Label elements, including precautionary statements



GHS02: Flammable

GHS08: Severe Health Hazard

Signal Word: **Danger**

Hazard Statements:

H225 - Highly flammable liquid and vapor

H302 - Harmful if swallowed.

H313 - May be harmful in contact with skin.

H316 - Causes mild skin irritation.

H318 - Causes serious eye damage.

H319 - Causes serious eye irritation

H335 + H336 - May cause respiratory irritation, and drowsiness or dizziness.

H351 – Suspected of causing cancer. Contains a chemical classified by the US EPA as a suspected possible carcinogen.

Precautionary Statements:

P102 - Keep out of reach of children.

P210 - Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P240 - Ground/Bond container and receiving equipment.

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.

P262 - Do not get in eyes, on skin, or on clothing.

P264 - Wash hands thoroughly after handling.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P362 - Take off contaminated clothing and wash before reuse.

EUH066 - Repeated exposure may cause skin dryness or cracking.

Hazards not otherwise classified (HNOC) or not covered by GHS.

May form explosive peroxides.

Summary Of Acute Hazards

Overexposure may cause coughing, shortness of breath, dizziness, central nervous system depression, intoxication and collapse. It may cause irritation to the respiratory tract and to other mucous membranes.

ROUTE OF EXPOSURE, SIGNS AND SYMPTOMS**INHALATION**

Overexposure may cause coughing, shortness of breath, dizziness, central nervous system depression, intoxication and collapse. It may cause irritation to the respiratory tract and to other mucous membranes.

EYE CONTACT

Severely irritating. If not removed promptly, will injure eye tissue, which can result in permanent damage.

SKIN CONTACT

Frequent or prolonged contact may irritate and cause dermatitis. Low order of toxicity.

INGESTION

Low order of toxicity. Small amounts of the liquid aspirated into the respiratory system during ingestion, or from vomiting, may cause bronchiopneumonia or pulmonary edema.

SUMMARY OF CHRONIC HAZARDS

Repeated or prolonged exposure may cause signs of central nervous system depression and respiratory irritation. This material has been shown to induce tumors in laboratory animals.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Individuals with pre-existing or chronic diseases of the eyes, skin, respiratory system, cardiovascular system, gastrointestinal system, liver, or kidneys may have increased susceptibility to excessive exposure.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient: Methyl Ethyl Ketone

Percentage By Weight: 15-30

CAS Number: 78-93-3

EC#: 606-002-00-3

Ingredient: Tetrahydrofuran

Percentage By Weight: 20-50

CAS Number: 109-99-9

EC#: 603-025-00-0

Ingredient: Cyclohexanone

Percentage By Weight: 5-15

CAS Number: 108-94-1

EC#: 606-010-00-7

Ingredient: Acetone

Percentage By Weight: 10-30

CAS Number: 67-64-1

EC#: 200-662-2

SECTION 4 – FIRST AID MEASURES

If inhaled:	If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.
If on skin:	Immediately flush with large amounts of water; use soap if available. Remove contaminated clothing.
If in eyes:	Immediately flush with large amounts of water for at least 15 minutes. Get prompt medical attention.
If swallowed:	If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

SECTION 5 – FIRE FIGHTING MEASURES

Conditions Of Flammability

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

Suitable Extinguishing Media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special Protective Equipment For Fire-Fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous Combustion Products

Hazardous decomposition products formed under fire conditions (carbon oxides.)

Further Information

Use water spray to cool unopened containers.

Unusual Fire And Explosion Hazards: Extremely flammable – very low flash point. Vapors are heavier than air and may travel along ground or to low spots at considerable distance to a source of ignition resulting in potential flashback. Burning liquid may float on water. Heat may build up pressure and rupture closed containers.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Ventilate area with natural or explosion-proof, forced air ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental Precautions

Prevent further leakage or spillage if safe to do so. Avoid flushing into sewers, drains, waterways, and soil.

Methods And Materials For Containment And Cleaning Up

Use absorbent materials to prevent footing hazard and to contain, then collect and place in container for disposal according to local regulations (see section 13).

SECTION 7 – HANDLING AND STORAGE

Precautions For Safe Handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Avoid prolonged or repeated contact with skin or clothing. If transferring this material to other containers, ground all containers to avoid static electricity buildup and discharge which may ignite flammable vapors.

Conditions For Safe Storage

Do not store near heat, sparks, or open flames. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Empty containers may contain residues and vapors; treat as if full and observe all products precautions. Do not reuse empty containers.

KEEP OUT OF REACH OF CHILDREN.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredient	Units
------------	-------

Methyl Isobutyl Ketone

ACGIH TLV:	200 ppm
OSHA PEL:	200 ppm
STEL:	300 ppm

Tetrahydrofuran

ACGIH TLV:	50 ppm
OSHA PEL:	200 ppm
STEL:	250 ppm

Cyclohexanone

ACGIH TLV:	20 ppm (skin)
OSHA PEL:	50 ppm

Acetone

ACGIH TLV:	500 ppm
OSHA PEL:	1000 ppm
STEL:	750 ppm

Respiratory Protection (Specify Type): In confined poorly ventilated areas, use NIOSH/MSHA approved air purifying or supplied air purifying or supplied air respirators.

Ventilation – Local Exhaust: Acceptable

Special: Explosion-proof equipment.

Mechanical (General): Preferable

Other: N/A

Protective Gloves: Wear rubber gloves.

Eye Protection: Chemical splash goggles (ANSI Z-87.1 or equivalent)

Other Protective Clothing Or Equipment: Coveralls recommended.

Work/Hygienic Practices: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling point:	151°F (66°C) @ 760 mmHg
Specific gravity (H ₂ O = 1):	0.91
Vapor pressure (mmHg):	129 @ 68°F (20°C)
Melting point:	N/A
Vapor Density (Air = 1):	2.5
Evaporation rate (Ethyl Acetate = 1):	8 – 14.5
Appearance/Odor:	Liquid/Pungent odor
Solubility in water:	Soluble
Volatile Organic Compounds (VOC) Content (theoretical percentage by weight):	510 g/L per SCAQMD Test Method 316A
Flash point:	4.1°F (-17°C) SETA CC
Lower explosion limit:	1.8%
Upper explosion limit:	11.8%

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Can form potentially explosive peroxides upon long standing in air.
Vapors may form explosive mixture with air.

Conditions To Avoid: Heat, sparks, open flames, and strong oxidizing, acidic and basic conditions.

Incompatibility (Materials To Avoid): Oxidizers, acids and bases.

Hazardous Decomposition Products: CO, CO₂ HCl and fragmented hydrocarbons.

Hazardous Polymerization: Will not occur.

SECTION 11 – TOXICOLOGY INFORMATION

Chronic Health Hazards

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

Tetrahydrofuran – The National Toxicology Program has reported that exposures of mice and rats to THF vapor levels up to 1800 ppm 6hr/day, 5 days/week for their lifetime caused an incidence of kidney tumors in male rats and liver tumors in female mice. The significance of these findings for human health are unclear at this time, and may be related to "species specific" effects. Elevated incidences of tumors in humans have not been reported for THF.

Toxicology Data

Ingredient Name

Methyl Isobutyl Ketone

Oral-Rat LD50: 2737 mg/kg

Inhalation-Rat LC50: 23,500 mg/m³/8H**Tetrahydrofuran**

Oral-Rat LD50: 1650 mg/kg

Inhalation-Rat LC50: 21,000 ppm/3H

Cyclohexanone

Oral-Rat LD50: 1535 mg/kg

Inhalation-Rat LC50: 8000 ppm/4H

Acetone

Oral-Rat LD50: 5800 mg/kg

Inhalation-Rat LC50: 50,100 mg/m³

SECTION 12 – ECOLOGICAL INFORMATION

Ecological Data

Ingredient Name:	Methyl Isobutyl Ketone
Food Chain Concentration Potential	None
Waterfowl Toxicity	N/A
BOD	214%
Aquatic Toxicity	5640 mg/L/48 hr/bluegill/TLm/fresh water
Ingredient Name:	Tetrahydrofuran
Food Chain Concentration Potential	None
Waterfowl Toxicity	N/A
BOD	N/A
Aquatic Toxicity	N/A
Ingredient Name:	Cyclohexanone
Food Chain Concentration Potential	None
Waterfowl Toxicity	N/A
BOD	N/A
Aquatic Toxicity	N/A

Ecological Data (cont.)

Ingredient Name:	Acetone
Food Chain Concentration Potential	None
Waterfowl Toxicity	N/A
BOD	N/A
Aquatic Toxicity	LC50/96-hour for fish > 100 mg/L

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Classification: RCRA classified hazardous waste. Dispose of absorbed materials and liquid waste in approved, controlled incineration facility in accordance with all local, state and federal regulations.

Disposal Method: Incineration.

SECTION 14 – TRANSPORTATION INFORMATION

DOT:	UN1133, Adhesives, Class 3, PG II, ERG#127. Quarts and less: Consumer Commodity, ORM-D
Ocean (IMDG):	UN1133, Adhesives, Class 3, PG II, EMS-No: F-E, S-D Quarts and less: Adhesives, Class 3, UN 1133, PG II, Limited Quantities or Ltd. Qty.
Air (IATA):	UN1133, Adhesives, Class 3, PG II, ERG#127
WHMIS (Canada):	Class B-2

SECTION 15 – REGULATORY INFORMATION

Regulatory Data

Ingredient Name:	Methyl Ethyl Ketone
SARA 313	Yes
TSCA Inventory	Yes
CERCLA RQ	5,000 lb.
RCRA Code	U159

Ingredient Name:	Tetrahydrofuran
SARA 313	No
TSCA Inventory	Yes
CERCLA RQ	1,000 lb.
RCRA Code	U213

Regulatory Data (cont.)

Ingredient Name: **Cyclohexanone**

SARA 313 No

TSCA Inventory Yes

CERCLA RQ 5,000 lb.

RCRA Code U057

Ingredient Name: **Acetone**

SARA 313 No

TSCA Inventory Yes

CERCLA RQ 5,000 lb.

RCRA Code U002

SECTION 16 – OTHER INFORMATION

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Consult RectorSeal for further information: (713) 263-8001

The logo for RectorSeal, featuring the brand name in a bold, sans-serif font. The 'R' and 'S' are stylized with horizontal bars. The text is black and set within a white rectangular box with a thin black border. This box is centered within a larger red rectangular background.

SAFETY DATA SHEET

RECTORSEAL® NO. 5®

Premium multi-purpose pipe thread sealant

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name

Rectorseal® No.5®

Product Codes

25112, 25191, 25271, 25300, 25431, 25551, 25552, 25631,
25633, 25780, 25790, 25793

Chemical Family

Organic

Use

Pipe thread sealant

Manufacturer's Name

The RectorSeal Corporation
2601 Spenwick Drive
Houston, Texas 77055 USA

Date of Validation

January 23, 2015

Date of Preparation

January 9, 2013

HMIS Codes

Health	1
Flammability	2
Reactivity	0
PPI	B

Emergency Telephone No.

Chemtrec 24 Hours
(800)-424-9300 USA
(703)-527-3887 International

Technical Service Telephone No.

(800)-231-3345 or (713)-263-8001

SECTION 2 – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW**OSHA Hazards**

Combustable

Target Organs

Not Classified

GHS CLASSIFICATION**Physical Hazards**

Combustable liquid (Category 4)

Health Hazards

Acute Toxicity:

Oral: Not Classified

Dermal: Not Classified

Inhalation: Not Classified

Skin Corrosion/Irritation: Not Classified

Serious Eye Damage/Eye Irritation: Not Classified
Skin Sensitization: Not Classified
Respiratory Sensitization: Not Classified
Germ Cell Mutagenicity: Not Classified
Carcinogenicity: See Section 11
Reproductive Toxicology: Not Classified
Target Organ Systemic Toxicity - Single Exposure: Not Classified
Target Organ Systemic Toxicity - Repeated Exposure: Not Classified

Aspiration Toxicity: Not Classified

GHS Label elements, including precautionary statements



GHS07: Exclamation Mark
Signal Word: **Warning**

Hazard Statements

H303 - May be harmful if swallowed.
H313 - May be harmful in contact with skin.
H335 + H336 - May cause respiratory irritation, and drowsiness or dizziness.

Precautionary Statements

P102 - Keep out of reach of children.
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P240 - Ground/Bond container and receiving equipment
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P262 - Do not get in eyes, on skin, or on clothing.
P264 - Wash hands thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P362 - Take off contaminated clothing and wash before reuse.

EUH066 - Repeated exposure may cause skin dryness or cracking.

Precautionary Statements - EU No. 1272/2008

Summary of Acute Hazards

Irritation to eyes, nose and throat; drowsiness, narcosis, tremors and other CNS effects at high concentration.

Route Of Exposure, Signs And Symptoms

INHALATION

Nasal and respiratory irritation, dizziness, narcosis, headache, nausea, CNS depression and unconsciousness.

EYE CONTACT

Watering, blurred vision, inflammation and irritation which can result in corneal injury.

SKIN CONTACT

Irritation, dermatitis.

INGESTION

Nausea, vomiting; CNS depression; irritation of gastrointestinal tract, liver and peritoneal wall; lung congestion.

SUMMARY OF CHRONIC HAZARDS

Skin irritation and dermatitis. Possible liver and kidney damage.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Individuals with pre-existing or chronic diseases of the eyes, skin, respiratory system, cardiovascular system, gastrointestinal system, liver or kidneys may have increased susceptibility to excessive exposures.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient:	Diacetone Alcohol
Percentage By Weight:	20-30
CAS Number:	123-42-2
EC#:	204-626-7

SECTION 4 – FIRST AID MEASURES

If inhaled:	If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.
If on skin:	Wash with soap and water. If irritation occurs, seek medical attention.
If in eyes:	Flush eyes with large amounts of water for 15 minutes. Get medical attention.
If swallowed:	If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

SECTION 5 – FIRE FIGHTING MEASURES

Extinguishing Media

Foam, dry chemical, carbon dioxide or water fog.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus (SCBA) and other protective clothing. Hazardous decomposition products possible (see Section 10).

Unusual Fire And Explosion Hazards: Combustible – moderate flash point. Vapors heavier than air and may travel along the ground or to low spots at considerable distances to a source of ignition resulting in potential flashback. Burning liquid may float on water. Heat may build up pressure and rupture containers.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled: Remove all sources of ignition. Use absorbent materials to prevent footing hazard and to contain. Ventilate area with natural or explosion-proof, forced air ventilation. Avoid flushing into sewers, drains, waterways, and soil. Wear protective clothing and respiratory protection during cleanup.

SECTION 7 – HANDLING AND STORAGE

Precautions To Be Taken In Handling And Storing: Keep container closed and upright when not in use. Do not store near heat, sparks, or open flames.

Other Precautions: Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues; treat as if full and observe all products precautions. Do not reuse empty containers.

KEEP OUT OF REACH OF CHILDREN.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredient	Units
Diacetone Alcohol	
ACGIH TLV:	50 ppm
OSHA PEL:	50 ppm

Respiratory Protection (Specify Type): In confined poorly ventilated areas, use NIOSH/MSHA approved air purifying or supplied air purifying or supplied air respirators.

Ventilation – Local Exhaust: Acceptable

Special: Explosion-proof equipment.

Mechanical (General): Preferable

Other: N/A

Protective Gloves: Wear rubber gloves.

Eye Protection: Chemical splash goggles (ANSI Z-87.1 or equivalent)

Other Protective Clothing Or Equipment: Coveralls recommended.

Work/Hygienic Practices: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling point:	322°F (161°C) @ 760mm Hg
Specific gravity (H2O = 1):	1.38
Vapor pressure (mmHg):	0.3 @ 68°F (20°C)
Melting point:	N/A
Vapor Density (Air = 1):	1.1
Evaporation rate (Ethyl Acetate = 1):	0.14
Appearance/Odor:	Yellow paste/Mild odor
Solubility in water:	23%
Volatile Organic Compounds (VOC) Content (theoretical percentage by weight):	23% or (317 g/L)
Flash point:	150° F (65°C) SETA CC
Lower explosion limit:	N/D
Upper explosion limit:	N/D

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable

Conditions To Avoid: Heat, sparks, open flames, and strong oxidizing. Temperatures above 500°F (260°C).

Incompatibility (Materials To Avoid): Gaseous oxygen, strong oxidizing materials, molten alkali metals.

Hazardous Decomposition Products: CO, CO₂ and fragmented hydrocarbons.

Hazardous Polymerization: Will not occur.

SECTION 11 – TOXICOLOGY INFORMATION

Chronic Health Hazards

No ingredient in this product is an IARC, NTP or OSHA Lister carcinogen.

Toxicology Data

Ingredient Name

Diacetone Alcohol

Oral-Rat LD50: 4000 mg/kg

Inhalation-Human TCLo: 100 ppm

SECTION 12 – ECOLOGICAL INFORMATION

Ecological Data

Ingredient Name:	Diacetone Alcohol
Food Chain Concentration Potential	N/A
Waterfowl Toxicity	N/A
BOD	N/A
Aquatic Toxicity	N/A

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Classification: Non-regulated solid waste

Disposal Method: Approved landfill

Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with Federal, State, and Local regulation regarding pollution.

SECTION 14 – TRANSPORTATION INFORMATION

DOT:	Non-regulated
Ocean (IMDG):	Non-regulated
Air (IATA):	Non-regulated
WHMIS (Canada):	Non-regulated

SECTION 15 – REGULATORY INFORMATION

Regulatory Data

Ingredient Name:	Diacetone Alcohol
SARA 313	N/A
TSCA Inventory	Yes
CERCLA RQ	N/A
RCRA Code	N/A

SECTION 16 – OTHER INFORMATION

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). The information herein is given in good faith, but no warranty, expressed or implied is made.

Consult RectorSeal for further information: (713) 263-8001



SAFETY DATA SHEET

Issue Date 13-Dec-2012

Revision Date 26-Mar-2013

Version 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Industrial Grade Silicone – Acetoxy Cure – Clear, White & Colors

Other Means of Identification

SDS # RD-0080A

Product Code 0816/OI, 0826OI Series

Recommended Use of the Chemical and Restrictions on Use

Recommended Use Silicone Sealant.

Details of the Supplier of the Safety Data Sheet

Supplier Address

Red Devil, Inc.
4175 Webb Street
Pryor, Oklahoma 74361
www.reddevil.com

Emergency Telephone Number

Company Phone Number 918-825-5744
Fax: 918-825-5761
Emergency Telephone INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Classification

Skin corrosion/irritation	Category 2
---------------------------	------------

Signal Word

Warning

Hazard Statements

Causes skin irritation



Appearance Clear/opaque or colored paste

Physical State Paste

Odor Acetic Acid Odor (Vinegar odor)

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

IF ON SKIN: Wash with plenty of soap and water
If skin irritation persist: Get medical advice/attention
Take off contaminated clothing and wash before reuse

Hazards Not Otherwise Classified (HNOC)

Not Applicable

Other Information

Not Applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Hydroxy-terminated Dimethyl siloxane	70131-67-8	>50
Non-hazardous ingredients *	Proprietary	>10
Amorphous silica (glass)	7631-86-9	<13
Polydimethylsiloxane	63148-62-9	<10
Methyltriacetoxysilane	4253-34-3	<6
Titanium Dioxide	13463-67-7	<5
Ethyltriacetoxysilane	17689-77-9	<6

* Unlisted ingredients are not considered hazardous under the OSHA GHS Hazard Communication Standard (29 CFR 1910.1200).
(Methyltriacetoxysilane) Observe limits for acetic acid formed during curing on exposure to water or humid air. (Silica, amorphous;
Titanium Dioxide) Inhalation of particulates unlikely due to product's physical state

4. FIRST AID MEASURES

First Aid Measures

General advice	Provide this SDS to medical personnel for treatment.
Inhalation	If symptoms are experienced remove source of contamination or move victim to fresh air. If irritation persists, obtain medical advice.
Eye Contact	Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 5 minutes while holding the eyelid(s) open. Obtain medical attention.
Ingestion	Rinse mouth thoroughly with water. If irritation or discomfort occurs, obtain medical advice.
Skin Contact	No health effects expected. If irritation does occur, flush with lukewarm, gently flowing water for 5 minutes. If irritation persists, obtain medical advice.

Most Important Symptoms and Effects, both Acute and Delayed

Symptoms	Causes skin irritation. May cause nose, throat & respiratory tract irritation. Direct contact with eyes may cause temporary irritation.
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Indication of any Immediate Medical Attention and Special Treatment Needed

Note to Physicians Treat according to person's condition & specifics of exposure.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Small Fire Use carbon dioxide (CO₂), dry chemical or water spray.

Large Fire Use dry chemical, foam or water spray.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Not determined.

Hazardous combustion products Carbon oxides & traces of incompletely burned carbon compounds. Silicon dioxide.
Formaldehyde.

Protective Equipment and Precautions for Firefighters

Self-contained breathing apparatus & protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions Observe all personal protection equipment recommendations described in Sections 5 & 8.

Environmental Precautions See Section 12 for additional ecological information.

Methods and Material for Containment and Cleaning Up

Methods for Containment Prevent further leakage or spillage if safe to do so. Use absorbent material to contain spill.

Methods for Cleaning Up Wipe up or scrape up & contain for salvage or disposal. Clean area as appropriate since spilled materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Dispose of saturated absorbent or cleaning materials appropriately, since spontaneous heating may occur. Local, state & federal laws & regulations may apply to releases & disposal of this material as well as those materials & items employed in the cleanup of releases. You will need to determine which federal, state & local laws & regulations are applicable. Sections 13 & 15 of this MSDS provide information regarding certain federal & state requirements.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Advice on Safe Handling Handle in accordance with good industrial hygiene and safety practice. Wash face, hands, and any exposed skin thoroughly after handling. Use personal protection recommended in Section 8. Use only in well-ventilated areas. Avoid contact with skin and eyes. Product evolves acetic acid (HOAc) when exposed to water or humid air.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions Keep container closed & store away from water or moisture.

Incompatible Materials Oxidizing material can cause a reaction. Water, moisture or humid air can cause hazardous vapors to form as described in Section 8.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines Exposure guidelines / protective equipment are for routine handling and accidental spills

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Amorphous silica (glass) 7631-86-9	-	(vacated) TWA: 6 mg/m ³ <1% Crystalline silica TWA: 20 mppcf : (80)/(% SiO ₂) mg/m ³ TWA	IDLH: 3000 mg/m ³ TWA: 6 mg/m ³
Titanium Dioxide 13463-67-7	TWA: 10 mg/m ³	TWA: 15 mg/m ³ total dust (vacated) TWA: 10 mg/m ³ total dust	IDLH: 5000 mg/m ³

Other Information Acetic acid is formed upon contact w/ water or humid air. Provide adequate ventilation to control exposures within guidelines of OSHA PEL: TWA 10 ppm & ACGIH TLV: TWA 10 ppm, STEL 15 ppm.

Appropriate Engineering Controls

Engineering Controls Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the SDS. Good general ventilation should be sufficient.

Individual Protection Measures, such as Personal Protective Equipment

Eye/Face Protection Safety glasses as a minimum for protection.

Skin and Body Protection Wear suitable protective clothing.

Respiratory Protection No special equipment needed.

General Hygiene Considerations Note: These precautions are for room temperature handling. Use @ elevated temperature or aerosol/spray applications may require added precautions. Handle in accordance with good industrial hygiene and safety practice. Wash @ mealtime & end of shift. Contaminated clothing & shoes should be removed as soon as practical & thoroughly cleaned before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES**Information on Basic Physical and Chemical Properties**

Physical State	Paste	Odor	Acetic Acid Odor (Vinegar odor)
Appearance	Clear/opaque or colored paste	Odor threshold	Not determined
Color	Various	Remarks • Method	
Property	Values		
pH	Not determined		
Melting point/freezing point	Not determined		
Boiling point/boiling range	Not determined		
Flash point	Not applicable		

Evaporation rate	Not determined	
Flammability (solid, gas)	Not determined	
Flammability limits in air		
Upper flammability limits	Not determined	
Lower flammability limit	Not determined	
Vapor pressure	Not determined	
Vapor density	Not determined	
Specific gravity	~1.04	@ 25 °C (77 °F)
Water solubility	Not determined	
Solubility in other solvents	Not determined	
Partition coefficient	Not determined	
Autoignition temperature	Not determined	
Decomposition temperature	Not determined	
Kinematic viscosity	Not determined	
Dynamic viscosity	Not determined	
Explosive properties	Not determined	
Oxidizing Properties	Not determined	

Other Information

Additional information Note: The above information is not intended for use in preparing product specifications
VOC Content (%) < 3%/wt (< 40 g/L)

10. STABILITY AND REACTIVITY**Reactivity**

Not reactive under normal conditions

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous polymerization

Hazardous polymerization does not occur.

Conditions to Avoid

Incompatible Materials.

Incompatible Materials

Oxidizing material can cause a reaction. Water, moisture or humid air can cause hazardous vapors to form as described in Section 8.

Hazardous Decomposition Products

Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: Carbon oxides & traces of incompletely burned carbon compounds. Silicon dioxide. Formaldehyde, Nitrogen oxides & metal oxides.

11. TOXICOLOGICAL INFORMATION**Information on Likely Routes of Exposure****Product Information****Inhalation**

May cause irritation of respiratory tract.

Eye Contact

May cause temporary irritation on eye contact.

Skin Contact

Causes skin irritation. Can be absorbed through the skin.

Ingestion

Can be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Amorphous silica (glass) 7631-86-9	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 2.2 mg/L (Rat) 1 h
Polydimethylsiloxane 63148-62-9	> 17 g/kg (Rat)	> 2 g/kg (Rabbit)	-
Methyltriacetoxysilane 4253-34-3	= 2060 mg/kg (Rat)	-	-
Titanium Dioxide 13463-67-7	> 10000 mg/kg (Rat)	-	-

Information on Physical, Chemical and Toxicological Effects**Symptoms**

Please see section 4 of this SDS for symptoms.

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-term Exposure**Carcinogenicity**

The table below indicates whether each agency has listed any ingredient as a carcinogen.
Titanium dioxide is a possible carcinogen when it appears as a respirable dust.

Chemical Name	ACGIH	IARC	NTP	OSHA
Amorphous silica (glass) 7631-86-9		Group 3		
Titanium Dioxide 13463-67-7		Group 2B		X

*IARC (International Agency for Research on Cancer)**Group 2B - Possibly Carcinogenic to Humans**Group 3 IARC components are "not classifiable as human carcinogens"**OSHA (Occupational Safety and Health Administration of the US Department of Labor)**X - Present***Numerical Measures of Toxicity- Product**

Not determined

12. ECOLOGICAL INFORMATION**Ecotoxicity**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Amorphous silica (glass) 7631-86-9	440: 72 h Pseudokirchneriella subcapitata mg/L EC50	5000: 96 h Brachydanio rerio mg/L LC50 static		7600: 48 h Ceriodaphnia dubia mg/L EC50

Persistence and Degradability

Complete information is not yet available.

Bioaccumulation

Complete information is not yet available.

Mobility

Complete information is not yet available.

Other Adverse Effects Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances

DOT Not regulated

IATA Not regulated

IMDG Not regulated

15. REGULATORY INFORMATION

International Inventories

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

US State Regulations

Chemical Name	California Proposition 65
Titanium Dioxide - 13463-67-7	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Amorphous silica (glass) 7631-86-9	X	X	X
Titanium Dioxide 13463-67-7	X	X	X

U.S. EPA Label Information**16. OTHER INFORMATION**

NFPA	Health Hazards	Flammability	Instability	Special Hazards
	1	1	0	Not determined
HMIS	Health Hazards	Flammability	Physical Hazards	Personal Protection
	1	0	0	B- Safety Glasses, Gloves

Issue Date 13-Dec-2012

Revision Date 26-Mar-2013

Revision Note

New format

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 12.07.2016

Version number 5

Revision: 12.07.2016

* SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:** *RIDGID-Thread Cutting Fluid SYN EU*
- **Article number:** 31820104
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Lubricant for Industrial use
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Schurhovenveld 4820
3800 Sint-Truiden

Belgium
- **Further information obtainable from:** rte.service@emerson.com +32 (0)11 598 620
- **1.4 Emergency telephone number:** +32 (0) 11 598 620 (should be available 24 hours)

* SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
The product is not classified according to the CLP regulation.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

* SECTION 3: Composition/information on ingredients

- **3.2 Chemical characterisation: Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.
- **Dangerous components:** Void
- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

* SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:** Remove contaminated clothing.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
No neutralization attempt.
Do not induce vomiting.
Seek medical treatment.
Do not induce vomiting; call for medical help immediately.
- **4.2 Most important symptoms and effects, both acute and delayed** Gastric or intestinal disorders

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- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture** Nitrogen oxides (NO_x)
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information**
Cool endangered receptacles with water spray.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation
Keep away from ignition sources.
- **6.2 Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose of the material collected according to regulations.
- **6.4 Reference to other sections**
No dangerous substances are released.
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

* SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
No special measures required.
Store in cool, dry place in tightly closed receptacles.
- **Information about fire - and explosion protection:**
Vapors are heavier than air. Explosive vapor - / air - mixtures may be formed avoid rake at high temperatures.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Provide solvent resistant, sealed floor.
- **Information about storage in one common storage facility:**
Store away from foodstuffs.
Store away from oxidising agents.
- **Further information about storage conditions:**
Protect from frost.
Store in cool, dry conditions in well sealed receptacles.
- **7.3 Specific end use(s)** Thread cutting mediums

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

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- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
- **Respiratory protection:**
Exceeding the recommended exposure limits:
Use multi-purpose combination (U.S.) or type of filter ABEK (EN 14387).
Respirators and components must be tested and approved under appropriate government standards such as NIOSH. (U.S.) or CEN (EU).
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- **Protection of hands:** Recommendation: Chemical resistant protective gloves (EN 374)
- **Material of gloves**
Butyl rubber, BR
Chloroprene rubber, CR
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**
Use safety glasses according to EN 166 : 2001.
Safety glasses

* SECTION 9: Physical and chemical properties

- | | |
|--|------------------------------|
| · 9.1 Information on basic physical and chemical properties | |
| · General Information | |
| · Appearance: | |
| Form: | In water |
| Colour: | Red |
| Odour: | Odourless |
| Odour threshold: | Not determined. |
| pH-value at 20 °C: | 7 |
| · Change in condition | |
| Melting point/Melting range: | Undetermined. |
| Boiling point/Boiling range: | Undetermined. |
| Flash point: | > 100 °C |
| Flammability (solid, gaseous): | Not applicable. |
| · Ignition temperature: | |
| Decomposition temperature: | Not determined. |
| Self-igniting: | Product is not selfigniting. |

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· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapour pressure at 20 °C:	23 hPa
· Density at 20 °C:	1.1 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water:	Fully miscible.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic at 40 °C:	12.9 mm ² /s
· Solvent content:	
Organic solvents:	0.1 %
Water:	37.5 %
VOC (EC)	0.10 %
· 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** Reacts with strong oxidants and strong reducing agents under severe heat.
- **10.2 Chemical stability**
The product is chemically stable under normal ambient conditions (room temperature).
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** Temperatures above 60 °C can lead to reduced shelf life of the product.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:**
Emergence of flammable gases / vapors on contact with strong oxidizing agent' s possible.

* SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **Primary irritant effect:**
- **Skin corrosion/irritation** May cause skin irritation after repeated contact.
- **Serious eye damage/irritation** May cause slight irritation to the eyes.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

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* SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

* SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation** Must be specially treated adhering to official regulations.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

* SECTION 14: Transport information

· 14.1 UN-Number	
· ADR, ADN, IMDG, IATA	Void
· 14.2 UN proper shipping name	
· ADR, ADN, IMDG, IATA	Void
· 14.3 Transport hazard class(es)	
· ADR, ADN, IMDG, IATA	
· Class	Void
· 14.4 Packing group	
· ADR, IMDG, IATA	Void
· 14.5 Environmental hazards:	
· Marine pollutant:	No
· 14.6 Special precautions for user	Not applicable.
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· UN "Model Regulation":	Void

* SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Labelling according to Regulation (EC) No 1272/2008** Void
- **Hazard pictograms** Void
- **Signal word** Void

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- **Hazard statements** Void
 - **Directive 2012/18/EU**
 - **Named dangerous substances - ANNEX I** None of the ingredients is listed.
 - **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.
-

* SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing MSDS:** Department of Environmental Health and Safety:
 - **Contact:** Technical Services Manager: +32 (0) 11 598 770
 - **Abbreviations and acronyms:**
 - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 - IMDG: International Maritime Code for Dangerous Goods
 - IATA: International Air Transport Association
 - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 - EINECS: European Inventory of Existing Commercial Chemical Substances
 - ELINCS: European List of Notified Chemical Substances
 - CAS: Chemical Abstracts Service (division of the American Chemical Society)
 - VOC: Volatile Organic Compounds (USA, EU)
 - PBT: Persistent, Bioaccumulative and Toxic
 - vPvB: very Persistent and very Bioaccumulative
 - * **Data compared to the previous version altered.**
-

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Section 1 – Product & Company Identification

Section 2 – Hazards Identification

GHS Label Elements: Not applicable

This product does not contain silicone or chlorinated additives.

Section 4 – First Aid Measures

Rinse mouth thoroughly. Call a Poison Center or doctor if you feel unwell. Do NOT induce vomiting.

Move to fresh air. Call a Poison Center or doctor if you feel unwell.

Product Name : RIDGID Nu-Clear Thread Cutting Oil

SKIN CONTACT:

Remove contaminated/saturated clothing and shoes. Wash contact areas with soap and water. If skin irritation occurs: Get medical advice/attention.

EYE CONTACT:

Flush thoroughly with water. If irritation occurs, get medical assistance. Continue to rinse for at least 15 minutes.

MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED

Symptoms:

No data available.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

Treatment:

Get medical attention as appropriate or if symptoms persist

Section 5 – Fire Fighting Measures

GENERAL FIRE HAZARDS:

No unusual fire or explosion hazards noted.

SUITABLE (AND UNSUITABLE) EXTINGUISHING MEDIA

Suitable extinguishing media:

No data available.

Unsuitable extinguishing media:

Do not use water jet as an extinguisher, as this will spread the fire.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL:

Heat may cause the containers to pressurize and possibly rupture. During fire, gases hazardous to health may be formed.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

Special firefighting procedures:

No data available.

Special protective equipment for fire-fighters:

Firefighters must use standard protective equipment appropriate for Industrial fires.

Product Name : RIDGID Nu-Clear Thread Cutting Oil

Section 6 – Accidental Release Measures

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

See Section 8 of the SDS for Personal Protective Equipment. Do not handle damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away. Ensure adequate ventilation.

METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:

Absorb with sand or other inert absorbent. Stop the flow of material, if this is without risk.

ENVIRONMENTAL PRECAUTIONS:

Avoid release to the environment. Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so and protect against releases into the environment. Remediate as appropriate.

Section 7 – Handling And Storage

PRECAUTIONS FOR SAFE HANDLING:

Observe good industrial hygiene practices. Wear appropriate personal protective equipment. Do not expose to intense heat as product may expand and pressurize container.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

Store in original tightly closed container. Avoid contact with oxidizing agents. Store away from incompatible materials.

SHELF LIFE:

720 days

Product Name : RIDGID Nu-Clear Thread Cutting Oil

Section 8 – Exposure Controls / Personal Protection

EXPOSURE LIMITS:

Chemical name	type	Exposure Limit Values	Source
Mineral oil - Mist.	PEL	5 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Vegetable oil - Total dust.	PEL	15 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Vegetable oil - Respirable fraction.	PEL	5 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)

PROTECTIVE MEASURES:

Use personal protective equipment as required.

RESPIRATORY PROTECTION:

In case of inadequate ventilation use suitable respirator. Seek advice from supervisor on the company's respiratory protection standards.

EYE PROTECTION:

Wear safety glasses with side shields (or goggles).

SKIN AND BODY PROTECTION:

Wear protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

HYGIENE MEASURES:

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Contaminated work clothing should not be allowed out of the workplace. Discard contaminated footwear that cannot be cleaned. Avoid contact with skin, eyes, and clothing.

Product Name : RIDGID Nu-Clear Thread Cutting Oil

Section 9 – Physical And Chemical Properties

Appearance	
Physical State	Liquid
Form	No data available
Color	Yellow
Odor	Mild petroleum
Odor Threshold	No data available
pH	No data available
Melting point/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	196 °C (385 °F)
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%)	No data available
Flammability limit - lower (%)	No data available
Explosive limit – upper (%)	No data available
Explosive limit – lower (%)	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	0.878
Solubility(ies)	
Solubility in water	Insoluble
Solubility (other)	No data available
Partition coefficient (n-octanol/water)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	43 mm ² /s (40 °C, measured)
VOC	9.4 g/l

Product Name : RIDGID Nu-Clear Thread Cutting Oil

Section 10 – Stability And Reactivity

REACTIVITY:

Not reactive during normal use.

CHEMICAL STABILITY:

No data available.

POSSIBILITY OF HAZARDOUS REACTIONS:

None under normal conditions.

CONDITIONS TO AVOID:

Avoid heat or contamination.

INCOMPATIBLE MATERIALS:

No data available.

HAZARDOUS DECOMPOSITION PRODUCTS:

Contains a component which may release flammable substances, including trimethylpentene, by distillation in systems with solvent recovery. This may lead to accumulation in the solvent circuit.

Section 11 – Toxicological Information

INFORMATION ON LIKELY ROUTES OF EXPOSURE

Ingestion:

May be ingested by accident. Ingestion may cause irritation and malaise.

Inhalation:

Inhalation is the primary route of exposure. In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes.

Skin Contact:

Prolonged skin contact may cause redness and irritation.

Eye contact:

Eye contact is possible and should be avoided.

Product Name : RIDGID Nu-Clear Thread Cutting Oil

SYMPTOMS RELATED TO THE PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS

Ingestion:

No data available.

Inhalation:

No data available.

Skin Contact:

No data available.

Eye contact:

No data available.

INFORMATION ON TOXICOLOGICAL EFFECTS

Acute toxicity

Oral Product:

ATEmix (): 2000 - 5000 mg/kg

Dermal Product:

ATEmix (): 2000 - 5000 mg/kg

Inhalation Product:

Not classified for acute toxicity based on available data.

Repeated dose toxicity Product:

No data available.

Skin Corrosion/Irritation Product:

No data available.

Serious Eye Damage/Eye Irritation Product:

No data available.

Respiratory or Skin Sensitization Product:

No data available.

Carcinogenicity Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro Product:

No data available.

In vivo Product:

No data available.

Product Name : RIDGID Nu-Clear Thread Cutting Oil

Reproductive toxicity Product:

No data available.

Specific Target Organ Toxicity - Single Exposure Product:

No data available.

Specific Target Organ Toxicity - Repeated Exposure Product:

No data available.

Aspiration Hazard Product:

No data available.

Other effects:

No data available

Section 12 – Ecological Information

GENERAL INFORMATION:

This product has not been evaluated for ecological toxicity or other environmental effects.

Section 13 – Disposal Consideration

DISPOSAL INSTRUCTIONS:

Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. It is the responsibility of the product user or owner to determine at the time of disposal, which waste regulations must be applied.

CONTAMINATED PACKAGING:

Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14 – Transportation Information

This material is not subject to transport regulations.

Product Name : RIDGID Nu-Clear Thread Cutting Oil

Section 15 – Regulatory Information

US FEDERAL REGULATIONS

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories - None

SARA 313 (TRI Reporting)

None present or none present in regulated quantities.

US STATE REGULATIONS

US. California Proposition 65

No component is regulated by CA Prop 65.

Section 16 – Other Information

Prepared by:..... Ridge Tool Company

Issue Date: May 29, 2015

Last Revision Date: May 29, 2015

RIDGE TOOL BELIEVES THE STATEMENTS, TECHNICAL INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE RELIABLE BUT THEY ARE GIVEN WITHOUT WARRANTY OR GUARANTEE OF ANY KIND, EXPRESSED OR IMPLIED, AND WE ASSUME NO RESPONSIBILITY FOR ANY LOSS, DAMAGE OR EXPENSE, DIRECT OR CONSEQUENTIAL, ARISING OUT OF THEIR USE.

MONSANTO COMPANY

Safety Data Sheet Commercial Product

1. PRODUCT AND COMPANY IDENTIFICATION

Product name

Roundup PRO® Concentrate Herbicide

EPA Reg. No.

524-529

Chemical name

Not applicable.

Synonyms

None.

Company

MONSANTO COMPANY, 800 N. Lindbergh Blvd., St. Louis, MO, 63167

Telephone: 800-332-3111, **Fax:** 314-694-5557

E-mail: safety.datasheet@monsanto.com

Emergency numbers

FOR CHEMICAL EMERGENCY, SPILL LEAK, FIRE, EXPOSURE, OR ACCIDENT Call CHEMTREC - Day or Night: 1-800-424-9300 toll free in the continental U.S., Puerto Rico, Canada, or Virgin Islands. For calls originating elsewhere: 703-527-3887 (collect calls accepted).

FOR MEDICAL EMERGENCY - Day or Night: +1 (314) 694-4000 (collect calls accepted).

2. HAZARDS IDENTIFICATION

Emergency overview

Appearance and odour (colour/form/odour): Pale amber - Pale brown / Liquid, (viscous) / Slight

CAUTION!

CAUSES MODERATE EYE IRRITATION

Potential health effects

Likely routes of exposure

Skin contact, eye contact, inhalation

Eye contact, short term

Causes moderate but temporary eye irritation.

Skin contact, short term

Not expected to produce significant adverse effects when recommended use instructions are followed.

Inhalation, short term

Not expected to produce significant adverse effects when recommended use instructions are followed.

Single ingestion

Not expected to produce significant adverse effects when recommended use instructions are followed.

Refer to section 11 for toxicological and section 12 for environmental information.

OSHA Status

This product is hazardous according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Active ingredient

Isopropylamine salt of N-(phosphonomethyl)glycine; {Isopropylamine salt of glyphosate}

Composition

COMPONENT	CAS No.	% by weight (approximate)
Isopropylamine salt of glyphosate	38641-94-0	50.2
Surfactant	61791-26-2	13
Other ingredients		36.8

The specific chemical identity is being withheld because it is trade secret information of Monsanto Company.

4. FIRST AID MEASURES

Use personal protection recommended in section 8.

Eye contact

If in eyes, hold eye open and rinse slowly and gently for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice.

Skin contact

Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Inhalation

If inhaled, move person to fresh air. If person is not breathing, call emergency number or ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.

Ingestion

Call poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison center or doctor. Do not give anything by mouth to an unconscious person.

Advice to doctors

This product is not an inhibitor of cholinesterase.

Antidote

Treatment with atropine and oximes is not indicated.

5. FIRE-FIGHTING MEASURES

Flash point

Does not flash.

Extinguishing media

Recommended: Water, foam, dry chemical, carbon dioxide (CO₂)

Unusual fire and explosion hazards

Minimise use of water to prevent environmental contamination.
Environmental precautions: see section 6.

Hazardous products of combustion

Carbon monoxide (CO), nitrogen oxides (NO_x), phosphorus oxides (P_xO_y)

Fire fighting equipment

Self-contained breathing apparatus.
Equipment should be thoroughly decontaminated after use.

6. ACCIDENTAL RELEASE MEASURES

Environmental precautions

SMALL QUANTITIES:

Low environmental hazard.

LARGE QUANTITIES:

Minimise spread.

Keep out of drains, sewers, ditches and water ways.

Methods for cleaning up

Contain spillage with sand bags or other means.

Absorb in earth, sand or absorbent material.

Dig up heavily contaminated soil.

Collect in containers for disposal.

Refer to section 7 for types of containers.

Flush residues with small quantities of water.

Minimise use of water to prevent environmental contamination.

Refer to section 13 for disposal of spilled material.

Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

7. HANDLING AND STORAGE

Good industrial practice in housekeeping and personal hygiene should be followed.

Handling

Avoid contact with eyes, skin and clothing.

When using do not eat, drink or smoke.

Wash hands thoroughly after handling or contact.

Wash contaminated clothing before re-use.

Thoroughly clean equipment after use.

Do not contaminate drains, sewers and water ways when disposing of equipment rinse water.

Refer to section 13 of the safety data sheet for disposal of rinse water.

Emptied containers retain vapour and product residue.

FOLLOW LABELLED WARNINGS EVEN AFTER CONTAINER IS EMPTIED.

Storage

Compatible materials for storage: stainless steel, fibreglass, plastic, glass lining

Incompatible materials for storage: unlined mild steel, galvanised steel, see section 10.

Keep out of reach of children.

Keep away from food, drink and animal feed.

Keep only in the original container.

Keep container tightly closed in a cool, well-ventilated place.

Recommended maximum shelf life: 2 years.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne exposure limits

Components	Exposure Guidelines
Isopropylamine salt of glyphosate	No specific occupational exposure limit has been established.
Surfactant	No specific occupational exposure limit has been established.
Other ingredients	No specific occupational exposure limit has been established.

Engineering controls

No special requirement when used as recommended.

Eye protection

If there is significant potential for contact:
Wear chemical goggles.

Skin protection

If repeated or prolonged contact:
Wear chemical resistant gloves.
Applicators and other handlers must wear:
Wear long sleeved shirt, long pants and shoes with socks.

Respiratory protection

No special requirement when used as recommended.

When recommended, consult manufacturer of personal protective equipment for the appropriate type of equipment for a given application.

9. PHYSICAL AND CHEMICAL PROPERTIES

These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

Colour/colour range:	Pale amber - Pale brown
Odour:	Slight
Form:	Liquid, (viscous)
Physical form changes (melting, boiling, etc.):	
Melting point:	Not applicable.
Boiling point:	No data.
Flash point:	Does not flash.
Explosive properties:	No data.
Auto ignition temperature:	No data.
Specific gravity:	1.199 @ 20 °C /@ 15.6 °C
Vapour pressure:	No significant volatility; aqueous solution.
Vapour density:	Not applicable.
Evaporation rate:	No data.
Dynamic viscosity:	No data.
Kinematic viscosity:	No data.
Density:	1.199 g/cm ³
Solubility:	Water: Soluble
pH:	4.8
Partition coefficient:	log Pow: -3.2 @ 25 °C (glyphosate)

10. STABILITY AND REACTIVITY

Stability

Stable under normal conditions of handling and storage.

Oxidizing properties

No data.

Materials to avoid/Reactivity

Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.

Hazardous decomposition

Thermal decomposition: Hazardous products of combustion: see section 5.

Self-accelerating decomposition temperature (SADT)

No data.

11. TOXICOLOGICAL INFORMATION

This section is intended for use by toxicologists and other health professionals.

Data obtained on similar products and on components are summarized below.

Similar formulation

Acute oral toxicity

Rat, LD50: > 5,000 mg/kg body weight

Practically non-toxic.

FIFRA category IV.

Acute dermal toxicity

Rat, LD50: > 5,000 mg/kg body weight

Practically non-toxic.

FIFRA category IV.

Skin irritation

Rabbit, 6 animals, OECD 404 test:

Days to heal: 10

Primary Irritation Index (PII): 1.7/8.0

Slight irritation.

FIFRA category IV.

Eye irritation

Rabbit, 6 animals, OECD 405 test:

Days to heal: 7

Moderate irritation.

FIFRA category III.

Acute inhalation toxicity

Rat, LC50, 4 hours, aerosol:

Practically non-toxic.

FIFRA category IV.

No 4-hr LC50 at the maximum achievable concentration.

Skin sensitization

Guinea pig, 3-induction Buehler test:

Positive incidence: 0 %

Negative.

No skin sensitization

N-(phosphonomethyl)glycine; { glyphosate}

Mutagenicity

In vitro and in vivo mutagenicity test(s):

Not mutagenic.

Repeated dose toxicity

Rabbit, dermal, 21 days:

NOAEL toxicity: > 5,000 mg/kg body weight/day

Target organs/systems: none

Other effects: none

Rat, oral, 3 months:

NOAEL toxicity: > 20,000 mg/kg diet
Target organs/systems: none
Other effects: none

Chronic effects/carcinogenicity

Mouse, oral, 24 months:

NOAEL toxicity: ~ 5,000 mg/kg diet
Target organs/systems: liver
Other effects: decrease of body weight gain, histopathologic effects
NOEL tumour: > 30,000 mg/kg diet
Tumours: none

Rat, oral, 24 months:

NOAEL toxicity: ~ 8,000 mg/kg diet
Target organs/systems: eyes
Other effects: decrease of body weight gain, histopathologic effects
NOEL tumour: > 20,000 mg/kg diet
Tumours: none

Toxicity to reproduction/fertility

Rat, oral, 2 generations:

NOAEL toxicity: 10,000 mg/kg diet
NOAEL reproduction: > 30,000 mg/kg diet
Target organs/systems in parents: none
Other effects in parents: decrease of body weight gain
Target organs/systems in pups: none
Other effects in pups: decrease of body weight gain
Effects on offspring only observed with maternal toxicity.

Developmental toxicity/teratogenicity

Rat, oral, 6 - 19 days of gestation:

NOAEL toxicity: 1,000 mg/kg body weight
NOAEL development: 1,000 mg/kg body weight
Other effects in mother animal: decrease of body weight gain, decrease of survival
Developmental effects: weight loss, post-implantation loss, delayed ossification
Effects on offspring only observed with maternal toxicity.

Rabbit, oral, 6 - 27 days of gestation:

NOAEL toxicity: 175 mg/kg body weight
NOAEL development: 175 mg/kg body weight
Target organs/systems in mother animal: none
Other effects in mother animal: decrease of survival
Developmental effects: none

12. ECOLOGICAL INFORMATION

This section is intended for use by ecotoxicologists and other environmental specialists.

Data obtained on similar products and on components are summarized below.

Similar formulation

Aquatic toxicity, fish

Rainbow trout (*Oncorhynchus mykiss*):

Acute toxicity, 96 hours, static, LC50: 5.4 mg/L
Moderately toxic.

Bluegill sunfish (*Lepomis macrochirus*):

Acute toxicity, 96 hours, static, LC50: 7.3 mg/L
Moderately toxic.

Aquatic toxicity, invertebrates

Water flea (*Daphnia magna*):

Acute toxicity, 48 hours, static, EC50: 11 mg/L

Slightly toxic.

Avian toxicity

Mallard duck (*Anas platyrhynchos*):

Dietary toxicity, 5 days, LC50: > 5,620 mg/kg diet

Practically non-toxic.

Bobwhite quail (*Colinus virginianus*):

Dietary toxicity, 5 days, LC50: > 5,620 mg/kg diet

Practically non-toxic.

Arthropod toxicity

Honey bee (*Apis mellifera*):

Oral/contact, 48 hours, LD50: > 100 µg/bee

Practically non-toxic.

Soil organism toxicity, invertebrates

Earthworm (*Eisenia foetida*):

Acute toxicity, 14 days, LC50: > 1,250 mg/kg soil

Practically non-toxic.

Similar formulation

Aquatic toxicity, algae/aquatic plants

Green algae (*Selenastrum capricornutum*):

Acute toxicity, 72 hours, static, EbC50 (biomass): 12.4 mg/L

Slightly toxic.

N-(phosphonomethyl)glycine: { glyphosate }

Bioaccumulation

Bluegill sunfish (*Lepomis macrochirus*):

Whole fish: BCF: < 1

No significant bioaccumulation is expected.

Dissipation

Soil, field:

Half life: 2 - 174 days

Koc: 884 - 60,000 L/kg

Adsorbs strongly to soil.

Water, aerobic:

Half life: < 7 days

13. DISPOSAL CONSIDERATIONS

Product

Keep out of drains, sewers, ditches and water ways.

Recycle if appropriate facilities/equipment available.

Burn in proper incinerator.

Follow all local/regional/national/international regulations.

Container

See the individual container label for disposal information.

Triple or pressure rinse empty containers.

Pour rinse water into spray tank.

Store for collection by approved waste disposal service.

Recycle if appropriate facilities/equipment available.

Emptied containers retain vapour and product residue.

Observe all labelled safeguards until container is cleaned, reconditioned or destroyed.

Follow all local/regional/national/international regulations.

Do NOT re-use containers for any purpose other than for the storage of pesticides, if allowed by label.

Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

14. TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

Not hazardous under the applicable DOT, ICAO/IATA, IMO, TDG and Mexican regulations.

15. REGULATORY INFORMATION

TSCA Inventory

All components are on the US EPA's TSCA Inventory

OSHA Hazardous Components

Surfactant(s)

SARA Title III Rules

Section 311/312 Hazard Categories

Immediate

Section 302 Extremely Hazardous Substances

Not applicable.

Section 313 Toxic Chemical(s)

Not applicable.

CERCLA Reportable quantity

Not applicable.

16. OTHER INFORMATION

The information given here is not necessarily exhaustive but is representative of relevant, reliable data.

Follow all local/regional/national/international regulations.

Please consult supplier if further information is needed.

In this document the British spelling was applied.

|| Significant changes versus previous edition.

	Health	Flammability	Instability	Additional Markings
NFPA	1	1	1	

0 = Minimal hazard, 1 = Slight hazard, 2 = Moderate hazard, 3 = Severe hazard, 4 = Extreme hazard

Full denomination of most frequently used acronyms. BCF (Bioconcentration Factor), BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand), EC50 (50% effect concentration), ED50 (50% effect dose), I.M. (intramuscular), I.P. (intraperitoneal), I.V. (intravenous), Koc (Soil adsorption coefficient), LC50 (50% lethality concentration), LD50 (50% lethality dose), LDLo (Lower limit of lethal dosage), LEL (Lower Explosion Limit), LOAEC (Lowest Observed Adverse Effect Concentration), LOAEL (Lowest Observed Adverse Effect Level), LOEC (Lowest Observed Effect Concentration), LOEL (Lowest Observed Effect Level), MEL (Maximum Exposure limit), MTD (Maximum Tolerated Dose), NOAEC (No Observed Adverse Effect Concentration), NOAEL (No Observed Adverse Effect Level), NOEC (No Observed Effect Concentration), NOEL (No Observed Effect Level), OEL (Occupational Exposure Limit), PEL (Permissible Exposure Limit), PII (Primary Irritation Index), Pow (Partition coefficient n-octanol/water), S.C. (subcutaneous), STEL (Short-Term Exposure Limit), TLV-C (Threshold Limit Value-Ceiling), TLV-TWA (Threshold Limit Value - Time Weighted Average), UEL (Upper Explosion Limit)

<p>This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course. Use, storage and disposal of pesticide products are regulated by</p>
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the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-approved label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, MONSANTO Company or any of its subsidiaries makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for the purposes prior to use. In no event will MONSANTO Company or any of its subsidiaries be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR TO THE PRODUCT TO WHICH INFORMATION REFERS.

Safety Data Sheet



1. Identification

Product Name:	HIPERF QT 2PK ZINC COLD GALV COMPOUND	Revision Date:	12/29/2016
Product Identifier:	206194T	Supersedes Date:	9/10/2014
Product Use/Class:	Cold Galvanizing Compound/High Performance Epoxy Ester		
Supplier:	Rust-Oleum Corporation 11 Hawthorn Parkway Vernon Hills, IL 60061 USA	Manufacturer:	Rust-Oleum Corporation 11 Hawthorn Parkway Vernon Hills, IL 60061 USA
Preparer:	Regulatory Department		
Emergency Telephone:	24 Hour Hotline: 847-367-7700		

2. Hazard Identification

Classification

Symbol(s) of Product



Signal Word

Danger

Possible Hazards

87% of the mixture consists of ingredient(s) of unknown acute toxicity.

GHS HAZARD STATEMENTS

Flammable Liquid, category 3	H226	Flammable liquid and vapour.
STOT, repeated exposure, category 1	H372	Causes damage to organs through prolonged or repeated exposure.
Skin Sensitizer, category 1	H317	May cause an allergic skin reaction.

GHS LABEL PRECAUTIONARY STATEMENTS

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P370+P378	In case of fire: Use alcohol film forming foam, carbon dioxide, dry chemical, dry sand to extinguish.
P403+P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container in accordance with local, regional and national regulations.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P314	Get medical advice/attention if you feel unwell.
P272	Contaminated work clothing should not be allowed out of the workplace.

P302+P352

IF ON SKIN: Wash with plenty of soap and water.

P333+P313

If skin irritation or rash occurs: Get medical advice/attention.

P321

For specific treatment see label

GHS SDS PRECAUTIONARY STATEMENTS

P240

Ground/bond container and receiving equipment.

P241

Use explosion-proof electrical/ventilating/lighting/equipment.

P242

Use only non-sparking tools.

P243

Take precautionary measures against static discharge.

P270

Do not eat, drink or smoke when using this product.

P363

Wash contaminated clothing before reuse.

3. Composition/Information On Ingredients**HAZARDOUS SUBSTANCES**

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>Wt.% Range</u>	<u>GHS Symbols</u>	<u>GHS Statements</u>
Zinc	7440-66-6	75-100	Not Available	Not Available
Hydrotreated Light Distillate	64742-47-8	2.5-10	GHS08	H304
Zinc Oxide	1314-13-2	2.5-10	Not Available	Not Available
Stoddard Solvent	8052-41-3	1.0-2.5	GHS08	H304-372
Zeolite	1318-02-1	0.1-1.0	GHS06	H331
Methyl Ethyl Ketoxime	96-29-7	0.1-1.0	GHS05-GHS06	H302-312-317-318-331

4. First-aid Measures

FIRST AID - EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention. Do NOT allow rubbing of eyes or keeping eyes closed.

FIRST AID - SKIN CONTACT: Wash skin with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists.

FIRST AID - INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention. Do NOT use mouth-to-mouth resuscitation. If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

FIRST AID - INGESTION: If swallowed, get medical attention.

5. Fire-fighting Measures

EXTINGUISHING MEDIA: Alcohol Film Forming Foam, Carbon Dioxide, Dry Chemical, Water Fog

UNUSUAL FIRE AND EXPLOSION HAZARDS: No unusual fire or explosion hazards noted. Closed containers may explode when exposed to extreme heat due to buildup of steam. Keep containers tightly closed. Combustible liquid and vapor.

SPECIAL FIREFIGHTING PROCEDURES: Evacuate area and fight fire from a safe distance. Use water spray to keep fire-exposed containers cool. Containers may explode when heated.

6. Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools.

7. Handling and Storage

HANDLING: Wash thoroughly after handling. Wash hands before eating. Remove contaminated clothing and launder before reuse. Use only with adequate ventilation. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Avoid breathing fumes, vapors, or mist. Avoid contact with eyes, skin and clothing.

STORAGE: Store in a dry, well ventilated place. Keep container tightly closed when not in use. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Avoid excess heat.

8. Exposure Controls/Personal Protection

Chemical Name	CAS-No.	Weight % Less Than	ACGIH TLV- TWA	ACGIH TLV- STEL	OSHA PEL-TWA	OSHA PEL- CEILING
Zinc	7440-66-6	85.0	N.E.	N.E.	N.E.	N.E.
Hydrotreated Light Distillate	64742-47-8	10.0	N.E.	N.E.	N.E.	N.E.
Zinc Oxide	1314-13-2	5.0	2 mg/m3	10 mg/m3	5 mg/m3	N.E.
Stoddard Solvent	8052-41-3	5.0	100 ppm	N.E.	500 ppm	N.E.
Zeolite	1318-02-1	1.0	N.E.	N.E.	N.E.	N.E.
Methyl Ethyl Ketoxime	96-29-7	1.0	10 ppm	N.E.	N.E.	N.E.

PERSONAL PROTECTION

ENGINEERING CONTROLS: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation.

RESPIRATORY PROTECTION: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

SKIN PROTECTION: Use gloves to prevent prolonged skin contact. Nitrile or Neoprene gloves may afford adequate skin protection.

EYE PROTECTION: Use safety eyewear designed to protect against splash of liquids.

OTHER PROTECTIVE EQUIPMENT: Refer to safety supervisor or industrial hygienist for further guidance regarding types of personal protective equipment and their applications.

HYGIENIC PRACTICES: Wash thoroughly with soap and water before eating, drinking or smoking. Remove contaminated clothing immediately and launder before reuse.

9. Physical and Chemical Properties

Appearance:	Liquid	Physical State:	Liquid
Odor:	Solvent Like	Odor Threshold:	N.E.
Relative Density:	3.386	pH:	N.A.
Freeze Point, °C:	N.D.	Viscosity:	N.D.
Solubility in Water:	Negligible	Partition Coefficient, n-octanol/ water:	N.D.
Decomposition Temp., °C:	N.D.	Explosive Limits, vol%:	0.8 - 6.0
Boiling Range, °C:	149 - 537	Flash Point, °C:	38
Flammability:	Supports Combustion	Auto-ignition Temp., °C:	N.D.
Evaporation Rate:	Slower than Ether	Vapor Pressure:	N.D.
Vapor Density:	Heavier than Air		

(See "Other information" Section for abbreviation legend)

10. Stability and Reactivity

CONDITIONS TO AVOID: Avoid contact with strong acid and strong bases.

INCOMPATIBILITY: Incompatible with strong oxidizing agents, strong acids and strong alkalis.

HAZARDOUS DECOMPOSITION: When heated to decomposition, it emits acrid smoke and irritating fumes. Contains solvents which may form carbon monoxide, carbon dioxide, and formaldehyde.

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

11. Toxicological information

EFFECTS OF OVEREXPOSURE - EYE CONTACT: Substance causes moderate eye irritation.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: Substance may cause slight skin irritation.

EFFECTS OF OVEREXPOSURE - INHALATION: High gas, vapor, mist or dust concentrations may be harmful if inhaled. Avoid breathing fumes, spray, vapors, or mist. High vapor concentrations are irritating to the eyes, nose, throat and lungs. Prolonged or

excessive inhalation may cause respiratory tract irritation.

EFFECTS OF OVEREXPOSURE - INGESTION: Irritating to the nose, throat and respiratory tract. Harmful if swallowed.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage.

PRIMARY ROUTE(S) OF ENTRY: Eye Contact, Ingestion, Inhalation, Skin Absorption, Skin Contact

ACUTE TOXICITY VALUES

The acute effects of this product have not been tested. Data on individual components are tabulated below:

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Vapor LC50</u>
64742-47-8	Hydrotreated Light Distillate	>5000 mg/kg Rat	>2000 mg/kg Rabbit	>5000 mg/L Rat
1314-13-2	Zinc Oxide	>5000 mg/kg Rat	N.I.	N.I.
1318-02-1	Zeolite	5000 mg/kg Rat	>2000 mg/kg Rabbit	2.4 mg/L Rat
96-29-7	Methyl Ethyl Ketoxime	930 mg/kg Rat	1100 mg/kg Rabbit	>4.8 mg/L Rat

N.I. - No Information

12. Ecological Information

ECOLOGICAL INFORMATION: Product is a mixture of listed components.

13. Disposal Information

DISPOSAL INFORMATION: Dispose of material in accordance to local, state, and federal regulations and ordinances. Do not allow to enter waterways, wastewater, soil, storm drains or sewer systems.

14. Transport Information

	<u>Domestic (USDOT)</u>	<u>International (IMDG)</u>	<u>Air (IATA)</u>	<u>TDG (Canada)</u>
UN Number:	N.A.	1263	1263	N.A.
Proper Shipping Name:	Not Regulated	Paint	Paint	Not Regulated
Hazard Class:	N.A.	3	3	N.A.
Packing Group:	N.A.	III	III	N.A.
Limited Quantity:	No	Yes	Yes	No

15. Regulatory Information

U.S. Federal Regulations:

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Sara Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	<u>CAS-No.</u>
Zinc	7440-66-6
Zinc Oxide	1314-13-2

Toxic Substances Control Act:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(b) if exported from the United States:

<u>Chemical Name</u>	<u>CAS-No.</u>
n-Nonane	111-84-2

16. Other Information**HMIS RATINGS**

Health:	3*	Flammability:	2	Physical Hazard:	0	Personal Protection:	X
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NFPA RATINGS

Health:	3	Flammability:	2	Instability	0
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VOLATILE ORGANIC COMPOUNDS, g/L: 361

SDS REVISION DATE: 12/29/2016

REASON FOR REVISION: Product Composition Changed
Substance and/or Product Properties Changed in Section(s):
01 - Identification
02 - Hazard Identification
05 - Fire-fighting Measures
09 - Physical & Chemical Properties
15 - Regulatory Information
16 - Other Information
Statement(s) Changed

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

Rust-Oleum Corporation believes, to the best of its knowledge, information and belief, the information contained herein to be accurate and reliable as of the date of this safety data sheet. However, because the conditions of handling, use, and storage of these materials are beyond our control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials. Rust-Oleum Corporation makes no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and recommendations in this material safety data sheet are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and to comply with all applicable international, federal, state, and local laws and regulations.

Safety Data Sheet



1. Identification

Product Name:	STRUST +SSPR 6PK SEMIGL WHITE	Revision Date:	5/25/2016
Product Identifier:	7797830	Supersedes Date:	10/19/2015
Product Use/Class:	Topcoat/Aerosols		
Supplier:	Rust-Oleum Corporation 11 Hawthorn Parkway Vernon Hills, IL 60061 USA	Manufacturer:	Rust-Oleum Corporation 11 Hawthorn Parkway Vernon Hills, IL 60061 USA
Preparer:	Regulatory Department		
Emergency Telephone:	24 Hour Hotline: 847-367-7700		

2. Hazard Identification

Classification

Symbol(s) of Product



Signal Word

Danger

GHS HAZARD STATEMENTS

Flammable Aerosol, category 1	H222	Extremely flammable aerosol.
Compressed Gas	H280	Contains gas under pressure; may explode if heated.
Skin Irritation, category 2	H315	Causes skin irritation.
Eye Irritation, category 2	H319	Causes serious eye irritation.
STOT, single exposure, category 3, NE	H336	May cause drowsiness or dizziness.
Germ Cell Mutagenicity, category 1B	H340	May cause genetic defects.
Carcinogenicity, category 1B	H350	May cause cancer.
STOT, repeated exposure, category 2	H373	May cause damage to organs through prolonged or repeated exposure.

GHS LABEL PRECAUTIONARY STATEMENTS

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. NO SMOKING.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P260	Do not breathe dust, fumes, gases, mists, vapors, or spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P281	Use personal protective equipment as required.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308+P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362	Take off contaminated clothing.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P410+P403	Protect from sunlight. Store in a well-ventilated place.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50°C / 122°F.

3. Composition/Information On Ingredients

HAZARDOUS SUBSTANCES

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>Wt.% Range</u>	<u>GHS Symbols</u>	<u>GHS Statements</u>
Acetone	67-64-1	10-25	GHS02-GHS07	H225-319-332-336
Propane	74-98-6	10-25	GHS04	H280
Titanium Dioxide	13463-67-7	10-25	Not Available	Not Available
Xylene (mixed isomers)	1330-20-7	2.5-10	GHS02-GHS07	H226-315-319-332
n-Butane	106-97-8	2.5-10	GHS04	H280
n-Butyl Acetate	123-86-4	2.5-10	GHS02-GHS07	H226-336
Talc	14807-96-6	2.5-10	Not Available	Not Available
Ethylbenzene	100-41-4	1.0-2.5	GHS02-GHS07- GHS08	H225-304-332-373
Hydrotreated Light Distillate	64742-47-8	1.0-2.5	GHS08	H304
Kaolin Clay	1332-58-7	1.0-2.5	Not Available	Not Available
Propylene Glycol Monobutyl Ether	5131-66-8	1.0-2.5	GHS07	H302-315-319
Stoddard Solvent	8052-41-3	0.1-1.0	GHS08	H304-340-350-372
Toluene	108-88-3	0.1-1.0	GHS02-GHS07- GHS08	H225-304-315-332-336-373

4. First-aid Measures

FIRST AID - EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention. Do NOT allow rubbing of eyes or keeping eyes closed.

FIRST AID - SKIN CONTACT: Wash skin with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists.

FIRST AID - INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention. Do NOT use mouth-to-mouth resuscitation. If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

FIRST AID - INGESTION: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention. If swallowed, get medical attention.

5. Fire-fighting Measures

EXTINGUISHING MEDIA: Alcohol Film Forming Foam, Carbon Dioxide, Dry Chemical, Dry Sand, Water Fog

UNUSUAL FIRE AND EXPLOSION HAZARDS: FLASH POINT IS LESS THAN 20°F. EXTREMELY FLAMMABLE LIQUID AND VAPOR! Water spray may be ineffective. Closed containers may explode when exposed to extreme heat due to buildup of steam. Closed containers may explode when exposed to extreme heat. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Perforation of the pressurized container may cause bursting of the can. No unusual fire or explosion hazards noted.

SPECIAL FIREFIGHTING PROCEDURES: Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion. Full protective equipment including self-contained breathing apparatus should be used. Evacuate area and fight fire from a safe distance. Use water spray to keep fire-exposed containers cool. Containers may explode when heated.

6. Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers. Ventilate area, isolate spilled material, and remove with inert absorbent. Dispose of contaminated absorbent, container, and unused contents in accordance with local, state, and federal regulations.

7. Handling and Storage

HANDLING: Wash thoroughly after handling. Wash hands before eating. Remove contaminated clothing and launder before reuse. Use only in a well-ventilated area. Use only with adequate ventilation. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Avoid breathing fumes, vapors, or mist. Avoid contact with eyes, skin and clothing.

STORAGE: Store in a dry, well ventilated place. Keep container tightly closed when not in use. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Contents under pressure. Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I flammable liquids. Keep away from heat, sparks, flame and sources of ignition. Contents under pressure. Do not expose to heat or store above 120 ° F. Avoid excess heat. Product should be stored in tightly sealed containers and protected from heat, moisture, and foreign materials.

8. Exposure Controls/Personal Protection

Chemical Name	CAS-No.	Weight % Less Than	ACGIH TLV- TWA	ACGIH TLV- STEL	OSHA PEL-TWA	OSHA PEL- CEILING
Acetone	67-64-1	20.0	250 ppm	500 ppm	1000 ppm	N.E.
Propane	74-98-6	20.0	N.E.	N.E.	1000 ppm	N.E.
Titanium Dioxide	13463-67-7	15.0	10 mg/m3	N.E.	15 mg/m3	N.E.
Xylene (mixed isomers)	1330-20-7	10.0	100 ppm	150 ppm	100 ppm	N.E.
n-Butane	106-97-8	10.0	N.E.	1000 ppm	N.E.	N.E.
n-Butyl Acetate	123-86-4	10.0	50 ppm	150 ppm	150 ppm	N.E.
Talc	14807-96-6	5.0	2 mg/m3	N.E.	N.E.	N.E.
Ethylbenzene	100-41-4	5.0	20 ppm	N.E.	100 ppm	N.E.
Hydrotreated Light Distillate	64742-47-8	5.0	N.E.	N.E.	N.E.	N.E.
Kaolin Clay	1332-58-7	5.0	2 mg/m3	N.E.	15 mg/m3	N.E.
Propylene Glycol Monobutyl Ether	5131-66-8	5.0	N.E.	N.E.	N.E.	N.E.
Stoddard Solvent	8052-41-3	1.0	100 ppm	N.E.	500 ppm	N.E.
Toluene	108-88-3	1.0	20 ppm	N.E.	200 ppm	300 ppm

PERSONAL PROTECTION

ENGINEERING CONTROLS: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment. Provide general dilution of local exhaust ventilation in volume and pattern to keep TLV of hazardous ingredients below acceptable limits. Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation.

RESPIRATORY PROTECTION: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

SKIN PROTECTION: Use gloves to prevent prolonged skin contact. Use impervious gloves to prevent skin contact and absorption of this material through the skin. Nitrile or Neoprene gloves may afford adequate skin protection.

EYE PROTECTION: Use safety eyewear designed to protect against splash of liquids.

OTHER PROTECTIVE EQUIPMENT: Refer to safety supervisor or industrial hygienist for further guidance regarding types of personal protective equipment and their applications. Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

HYGIENIC PRACTICES: Wash thoroughly with soap and water before eating, drinking or smoking. Remove contaminated clothing immediately and launder before reuse.

9. Physical and Chemical Properties

Appearance:	Aerosolized Mist	Physical State:	Liquid
Odor:	Solvent Like	Odor Threshold:	N.E.
Relative Density:	0.847	pH:	N.A.
Freeze Point, °C:	N.D.	Viscosity:	N.D.
Solubility in Water:	Slight	Partition Coefficient, n-octanol/water:	N.D.
Decomposition Temp., °C:	N.D.	Explosive Limits, vol%:	1.0 - 13.0
Boiling Range, °C:	-37 - 537	Flash Point, °C:	-96
Flammability:	Supports Combustion	Auto-ignition Temp., °C:	N.D.
Evaporation Rate:	Faster than Ether	Vapor Pressure:	N.D.
Vapor Density:	Heavier than Air		

(See "Other information" Section for abbreviation legend)

10. Stability and Reactivity

CONDITIONS TO AVOID: Avoid temperatures above 120°F (49°C). Avoid contact with strong acid and strong bases. Avoid all possible sources of ignition.

INCOMPATIBILITY: Incompatible with strong oxidizing agents, strong acids and strong alkalis.

HAZARDOUS DECOMPOSITION: By open flame, carbon monoxide and carbon dioxide. When heated to decomposition, it emits acrid smoke and irritating fumes. Contains solvents which may form carbon monoxide, carbon dioxide, and formaldehyde.

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

11. Toxicological information

EFFECTS OF OVEREXPOSURE - EYE CONTACT: Causes Serious Eye Irritation

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: Substance may cause slight skin irritation. May be absorbed through the skin in harmful amounts. May cause skin irritation. Allergic reactions are possible. Prolonged or repeated contact may cause skin irritation.

EFFECTS OF OVEREXPOSURE - INHALATION: Harmful if inhaled. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Avoid breathing fumes, spray, vapors, or mist. High vapor concentrations are irritating to the eyes, nose, throat and lungs. Prolonged or excessive inhalation may cause respiratory tract irritation.

EFFECTS OF OVEREXPOSURE - INGESTION: Harmful if swallowed. Aspiration hazard if swallowed; can enter lungs and cause damage.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. High concentrations may lead to central nervous system effects (drowsiness, dizziness, nausea, headaches, paralysis, and blurred vision) and/or damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage. IARC lists Ethylbenzene as a possible human carcinogen (group 2B). Contains Titanium Dioxide. Titanium Dioxide is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC. No significant exposure to Titanium Dioxide is thought to occur during the use of products in which Titanium Dioxide is bound to other materials, such as in paints during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of Titanium Dioxide in the formula. (Ref: IARC Monograph, Vol. 93, 2010)

PRIMARY ROUTE(S) OF ENTRY: Eye Contact, Ingestion, Inhalation, Skin Absorption, Skin Contact

ACUTE TOXICITY VALUES

The acute effects of this product have not been tested. Data on individual components are tabulated below:

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Vapor LC50</u>
67-64-1	Acetone	5800 mg/kg Rat	N.I.	50.1 mg/L Rat
74-98-6	Propane	N.I.	N.I.	658 mg/L Rat
13463-67-7	Titanium Dioxide	>10000 mg/kg Rat	2500 mg/kg	N.I.
1330-20-7	Xylene (mixed isomers)	3500 mg/kg Rat	>4350 mg/kg Rabbit	29.08 mg/L Rat
106-97-8	n-Butane	N.I.	N.I.	658 mg/L Rat
123-86-4	n-Butyl Acetate	10768 mg/kg Rat	>17600 mg/kg Rabbit	> 21 mg/L Rat
14807-96-6	Talc	6000	N.I.	30
100-41-4	Ethylbenzene	3500 mg/kg Rat	15400 mg/kg Rabbit	17.2 mg/L Rat
64742-47-8	Hydrotreated Light Distillate	>5000 mg/kg Rat	>2000 mg/kg Rabbit	>5000 mg/L Rat
1332-58-7	Kaolin Clay	5500 mg/kg	N.I.	25

5131-66-8 Propylene Glycol Monobutyl Ether
 108-88-3 Toluene

1900 mg/kg Rat
 2600 mg/kg Rat

N.I.
 12000 mg/kg Rabbit

N.I.
 12.5 mg/L Rat

N.I. - No Information

12. Ecological Information

ECOLOGICAL INFORMATION: Product is a mixture of listed components. Product is a mixture of listed components.

13. Disposal Information

DISPOSAL INFORMATION: Dispose of material in accordance to local, state, and federal regulations and ordinances. Do not allow to enter waterways, wastewater, soil, storm drains or sewer systems.

14. Transport Information

	<u>Domestic (USDOT)</u>	<u>International (IMDG)</u>	<u>Air (IATA)</u>	<u>TDG (Canada)</u>
UN Number:	N.A.	1950	1950	N.A.
Proper Shipping Name:	Paint Products in Limited Quantities	Aerosols	Aerosols	Paint Products in Limited Quantities
Hazard Class:	N.A.	2.1	2.1	N.A.
Packing Group:	N.A.	N.A.	N.A.	N.A.
Limited Quantity:	Yes	Yes	Yes	Yes

15. Regulatory Information

U.S. Federal Regulations:

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Fire Hazard, Pressure Hazard, Acute Health Hazard, Chronic Health Hazard

Sara Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	<u>CAS-No.</u>
Xylene (mixed isomers)	1330-20-7
Ethylbenzene	100-41-4
Toluene	108-88-3

Toxic Substances Control Act:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(b) if exported from the United States:

<u>Chemical Name</u>	<u>CAS-No.</u>
Alkyl Quaternary Ammonium Bentonite	68953-58-2
n-Nonane	111-84-2

16. Other Information**HMIS RATINGS**

Health: 2* Flammability: 4 Physical Hazard: 0 Personal Protection: X

NFPA RATINGS

Health: 2 Flammability: 4 Instability: 0

VOLATILE ORGANIC COMPOUNDS, g/L: 500

SDS REVISION DATE: 5/25/2016

REASON FOR REVISION: Regulatory Formula Source Changed
Product Composition Changed
Substance and/or Product Properties Changed in Section(s):
01 - Identification
02 - Hazard Identification
09 - Physical & Chemical Properties
16 - Other Information
Statement(s) Changed

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

Rust-Oleum Corporation believes, to the best of its knowledge, information and belief, the information contained herein to be accurate and reliable as of the date of this safety data sheet. However, because the conditions of handling, use, and storage of these materials are beyond our control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials. Rust-Oleum Corporation makes no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and recommendations in this material safety data sheet are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and to comply with all applicable international, federal, state, and local laws and regulations.



Sea Foam Motor Treatment
SDS Revision Date: 08/01/2016

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SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Sea Foam Motor Treatment**

Product Code(s) : SF-16, SF-128, SF-55

Recommended use of the chemical and restrictions on use

: Fuel system treatment / Transmission treatment.
Use pattern: Consumer use; professional use.

Chemical family : Mixture.

Name, address, and telephone number
of the supplier:

Sea Foam Sales Company

12987 Pioneer Trail
Eden Prairie, MN, USA
55347

Supplier's Telephone # : (952) 938-4811

24 Hr. Emergency Tel # : INFOTRAC - (800) 535-5053 (Within Continental US); (352) 323-3500 (Outside US)
NOTE: INFOTRAC emergency number is to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.



Name, address, and telephone number of
the manufacturer:

Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Clear liquid. Petroleum hydrocarbon odor.

Most important hazards: This material is classified as hazardous under OSHA regulations (29CFR 1910.1200) (Hazcom 2012). Hazardous classification:

Flammable liquid - Category 2
Serious eye damage/eye irritation - Category 2A
Specific target organ toxicity - single exposure - Category 3
Aspiration toxicity - Category 1

WHMIS information: This product is a WHMIS Controlled Product. It meets one or more of the criteria for a controlled product provided in Part IV of the Canadian Controlled Products Regulations (CPR). WHMIS Classification:

Class B2 (Flammable Liquids)
Class D2B (Materials Causing Other Toxic Effects, Toxic Material)

Label elements

The following label information is applicable only to the United States according to OSHA Regulations (29 CFR 1910.1200) (Hazcom 2012):

Signal Word

DANGER!

Hazard statement(s)

Highly flammable liquid and vapor.
Causes serious eye irritation.
May cause drowsiness and dizziness.
May be fatal if swallowed and enters airways.



Sea Foam Motor Treatment
SDS Revision Date: 08/01/2016

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SAFETY DATA SHEET

Precautionary statement(s)

Keep away from heat, sparks and open flame. - No smoking.
Keep container tightly closed.
Ground/Bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/clothing and eye/face protection.
Wash hands and face thoroughly after handling.
Avoid breathing vapor or mist.
Use only outdoors or in a well-ventilated area.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
In case of fire: Use water fog, dry chemical, CO2 or 'alcohol' foam for extinction.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing. If eye irritation persists, get medical advice/attention.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
Do NOT induce vomiting.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container in accordance with local regulation.



The following label information is applicable only to Canada according to the Canadian Controlled Products Regulations (CPR/WHMIS):

Danger! Flammable liquid and vapor. Vapors may cause flash fire. Harmful or fatal if swallowed. Can enter the lungs and cause damage. Harmful if inhaled. May cause nausea, vomiting, headache and other central nervous system effects. May cause respiratory irritation. Causes eye irritation. May cause mild skin irritation.

Precautions: Use only in well-ventilated areas. Wear suitable protective equipment during handling. Avoid breathing vapors or mists. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks and open flame. - No smoking. Ground all equipment during handling. Avoid contact with strong oxidizing agents. Wash thoroughly after handling. Keep containers tightly closed when not in use. Store in a cool, dry, well-ventilated area, away from heat and ignition sources.

FIRST AID: If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing stopped, begin artificial respiration. Get medical attention. For skin contact, wash with soap and water while removing contaminated clothing. If irritation persists, seek prompt medical attention. For eye contact, flush with running water for at least 15 minutes. If irritation persists, seek prompt medical attention. If ingested, do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into lungs. Get medical attention.

Refer To Material Safety Data Sheet for further information.



Other hazards



Sea Foam Motor Treatment
SDS Revision Date: 08/01/2016

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SAFETY DATA SHEET

Other hazards which do not result in classification:

Burning produces noxious and toxic fumes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Prolonged skin contact may cause dermatitis (rash), characterized by red, dry, itching skin. Toxic to aquatic life with long lasting effects.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS #	Concentration
Hydrocarbon blend*	Blend	< 95%
Isopropanol	67-63-0	< 25%

*Note: The exact composition of the above listed chemicals are being withheld as a trade secret.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Seek immediate medical attention/advice. Do not induce vomiting. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration.
- Inhalation* : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical attention.
- Skin contact* : Immediately remove/take off all contaminated clothing. Wash exposed area thoroughly with soap and water for at least 15 minutes. If irritation or symptoms develop, seek medical attention.
- Eye contact* : Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Most important symptoms and effects, both acute and delayed

- : Causes serious eye irritation.
- : Causes respiratory tract irritation.
- : May cause drowsiness and dizziness.
- : May cause damage to the nervous system through prolonged or repeated exposure.
- : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Indication of any immediate medical attention and special treatment needed

- : Treat symptomatically. This product is a CNS depressant.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Dry chemical, foam, carbon dioxide and water fog.

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Highly flammable liquid and vapor. May be ignited by open flame. Vapors are heavier than air and collect in confined and low-lying areas. The product is insoluble and floats on water. The pressure in sealed containers can increase under the influence of heat.

Flammability classification (OSHA 29 CFR 1910.106)

- : Flammable liquid - Category 2

Explosion Data: Sensitivity to Mechanical Impact / Static Discharge:

- : Not expected to be sensitive to mechanical impact. May be sensitive to static discharge. Vapors in the flammable range may be ignited by a static discharge of sufficient energy.



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Hazardous combustion products

- : Carbon oxides; Nitrogen oxides (NOx); Sulphur oxides; Other unidentified organic compounds; irritating fumes and smoke.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece, operated in positive pressure mode.

Special fire-fighting procedures

- : Move containers from fire area, if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame. Direct water or foam spray may cause frothing which can increase the intensity and range of the fire.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

Environmental precautions

- : Do not allow material to contaminate ground water system. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.

Methods and material for containment and cleaning up

- : Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Use only non-sparking tools. Soak up with inert absorbent material. Do not use combustible absorbents, such as sawdust. Pick up and transfer to properly labeled containers. Contaminated absorbent material may pose the same hazards as the spilled product. Contact the proper local authorities.

Special spill response procedures

- : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
US CERCLA Reportable quantity (RQ): None.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye/face protection. Use only in well-ventilated areas. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Keep away from heat, sparks and open flame. - No smoking.
Ground/Bond container and receiving equipment. Take precautionary measures against static discharges. Use explosion-proof ventilating equipment. Keep container tightly closed. Do not eat, drink or smoke when using this product. Empty containers retain residue (liquid and/or vapor) and can be dangerous. Wash thoroughly after handling.

Conditions for safe storage

- : Store in a cool, dry, well-ventilated area. Store locked up. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. No smoking. Protect from sunlight. Have appropriate fire extinguishers and spill clean-up equipment in or near storage area.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION



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Exposure Limits:

Chemical Name	ACGIH TLV		OSHA PEL	
	TWA	STEL	PEL	STEL
Hydrocarbon Blend	5 mg/m ³ (inhalable fraction, mineral oil mists)	N/Av	5 mg/m ³ (As 'Oil mist, mineral')	N/Av
Isopropanol	200 ppm	400 ppm	400 ppm ; 980 mg/m ³	N/Av

Exposure controls

Ventilation and engineering measures

: Provide mechanical ventilation in confined spaces. Use explosion-proof equipment.

Respiratory protection

: If the TLV is exceeded, a NIOSH/MSHA-approved respirator is advised.

Skin protection

: Impervious gloves must be worn when using this product. Advice should be sought from glove suppliers. Wear long sleeved shirt and pants to minimize exposed skin.

Eye / face protection

: Chemical safety glasses with side shields or splash proof goggles. A full face shield may also be necessary.

Other protective equipment

: Depending on conditions of use, an impervious apron should be worn. An eyewash station and safety shower should be made available in the immediate working area.

General hygiene considerations

: Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Clear liquid.

Odor : Typical odor.

Odor threshold : No information available.

pH : No information available.

Melting/Freezing point : No information available.

Initial boiling point and boiling range

: No information available.

Flash point : 12.8°C / 55°F

Flashpoint (Method) : TCC

Evaporation rate (BuAe = 1) : <1

Flammability (solid, gas) : Not applicable.

Lower flammable limit (% by vol.) : No information available.

Upper flammable limit (% by vol.) : No information available.

Oxidizing properties : None known.

Explosive properties : Not explosive

Vapor pressure : No information available.

Vapor density : >1

Relative density / Specific gravity : 0.819

Solubility in water : Insoluble.



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Other solubility(ies) : No information available.
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution : No information available.
Auto-ignition temperature : No information available.
Decomposition temperature : No information available.
Viscosity : No information available.
Volatiles (% by weight) : No information available.
Volatile organic Compounds (VOC's) : 367g/l
Absolute pressure of container : Not applicable.
Flame projection length : Not applicable.
Other physical/chemical comments : No additional information.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : Hazardous polymerisation does not occur.
Conditions to avoid : Avoid heat and open flame. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials.
Incompatible materials : Strong oxidizing agents; Acids; Caustics.
Hazardous decomposition products : None known, Refer to hazardous combustion products in Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES
Routes of entry skin & eye : YES
Routes of entry Ingestion : YES
Routes of exposure skin absorption : YES

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: Inhalation of vapors can cause nasal and respiratory irritation. Exposure to high vapor concentration can cause dizziness, nausea and central nervous system depression. Saturated vapors can be encountered in confined spaces and/or under conditions of poor ventilation.

Sign and symptoms ingestion

: Swallowing may cause irritation, nausea and vomiting. May cause central nervous system depression. May be absorbed and cause symptoms similar to those for inhalation. Symptoms may include burning pain, vomiting and diarrhea. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal.



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Sign and symptoms skin : May cause mild skin irritation. May be absorbed and cause symptoms similar to those for inhalation.

Sign and symptoms eyes : May cause moderate eye irritation.

Potential Chronic Health Effects

: Prolonged skin contact may cause dermatitis (rash), characterized by red, dry, itching skin. Prolonged overexposure to product can result in permanent central nervous system changes. May cause lung inflammation and lung damage with extreme exposures.

Mutagenicity : Not expected to be mutagenic in humans.

Carcinogenicity : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

: Not expected to have other reproductive effects.

Sensitization to material : Not expected to be a skin or respiratory sensitizer.

Specific target organ effects : Eyes, skin, respiratory system, digestive system, central nervous system. The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects. The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Irritancy : Moderate eye irritant. Irritating to respiratory system. Mild skin irritant.

Medical conditions aggravated by overexposure

: None known or reported by the manufacturer.

Synergistic materials : None known or reported by the manufacturer.

Toxicological data : The calculated ATE values for this mixture are:
ATE oral = 23,600 mg/kg
ATE dermal = 8343 mg/kg
ATE inhalation (mists) = 65.7 mg/L/4H

See below for individual ingredient acute toxicity data.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Hydrocarbon Blend	N/Av	>15000 mg/kg	>5000 mg/kg
Isopropanol	17000 ppm	4720 mg/kg	12890 mg/kg

Other important toxicological hazards

: None known or reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : No data is available on the product itself.



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Persistence and degradability

- : The product itself has not been tested. Contains: Isopropanol. Isopropanol is considered to be readily biodegradable.

Bioaccumulation potential

- : The product itself has not been tested.

Mobility in soil

- : The product itself has not been tested.

Other Adverse Environmental effects

- : None known.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

- : Handle in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in sections 7 and 8. Empty containers retain residue (liquid and/or vapor) and can be dangerous. Do not cut, weld, drill or grind on or near this container.



Methods of Disposal

- : Dispose of in accordance with federal, provincial and local hazardous waste laws. Contact your local, state or federal environmental agency for specific rules. For assistance with your waste management needs, contact EMCO's Waste Services Division at (262) 658-4000.

RCRA

- : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
TDG	UN1993	FLAMMABLE LIQUID, N.O.S. (Hydrocarbon Blend; Isopropanol)	3	II	
TDG Additional information	ERG #128 The listed transportation information applies only to ground transport and does not address regulatory variations due to changes in package size, mode of shipment, or other regulatory descriptors.				
49CFR/DOT	UN1993	Flammable Liquids, n.o.s. (Hydrocarbon Blend; Isopropanol)	ORM-D	II	
49CFR/DOT Additional information	ERG #128 The listed transportation information applies only to ground transport and does not address regulatory variations due to changes in package size, mode of shipment, or other regulatory descriptors.				

Special precautions for user

- : Appropriate advice on safety must accompany the package. Keep away from heat, sparks and open flame. - No smoking.

Environmental hazards

- : This mixture meets the criteria for an environmentally hazardous material according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- : This information is not available.

SECTION 15. REGULATORY INFORMATION

US Federal Information:

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

US CERCLA Reportable quantity (RQ): None.



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SARA TITLE III: Sec. 302, Extremely Hazardous Substances, 40 CFR 355: No Extremely Hazardous Substances are present in this material.

SARA TITLE III: Sec. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes: Fire Hazard; Immediate (Acute) health hazard; Chronic Health Hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This product may be subject to SARA notification requirements, since it contains Toxic Chemical constituents above their de minimus concentrations. This product contains: Isopropanol.

US State Right to Know Laws:

California Proposition 65: To the best of our knowledge, this product does not contain any chemicals known to the State of California to cause cancer or reproductive harm.

Other U.S. State "Right to Know" Lists: The following chemicals are specifically listed by individual States: Isopropanol (MA, MN, NJ, CA, PA, RI)

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

International Information:

European EINECs information: All ingredients listed appear on the European EINECs inventory.

SECTION 16. OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
ATE: Acute Toxicity Estimate
CAS: Chemical Abstract Services
IARC: International Agency for Research on Cancer
Inh: Inhalation
N/Ap: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
OSHA: Occupational Safety and Health Administration
PEL: Permissible exposure limit
RTECS: Registry of Toxic Effects of Chemical Substances
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values TWA:
Time Weighted Average TSCA:
Toxic Substance Control Act
WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2012.
2. International Agency for Research on Cancer Monographs, searched 2012.
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases (Chempendium, HSDB and RTECs). (2012)
4. Material Safety Data Sheets from manufacturer.
5. US EPA Title III List of Lists - July 2011.
6. California Proposition 65 List - 20 July 2012.

Preparation Date

: 06/20/2007



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Reviewed Date SDS

: 08/01/2016

Revision No.

: 3

Revision Information

: (M)SDS sections updated: All (format change)

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

HMIS Rating

: * - Chronic hazard 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe

Health: 1 Flammability: 3 Reactivity: 0

NFPA Rating

0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe

: Health: 1 Flammability: 3 Instability: 0 Special Hazards: X

Prepared for:

Direct all enquiries to:
Sea Foam Sales Company
12987 Pioneer Trail
Eden Prairie, MN, USA 55347
Telephone: (952) 938-4811



END OF DOCUMENT

Safety Data Sheet
FURNACE CEMENT (M) NON-ASBESTOS

SDS Revision Date:

04/02/2015



Sid Harvey items #'s F7-29 & F7-30

SDS # Z0039

1. Identification

1.1. Product identifier

Product Identity

FURNACE CEMENT (M) NON-ASBESTOS

Alternate Names

40355M, 40377M, Blended Formula, FURNACE CEMENT (M) NON-ASBESTOS

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use

See Technical Data Sheet.

Application Method

See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name

ComStar International Inc.
20-45 128th Street,
College Point, NY 11356

Telephone No.

718-445-7900
800-328-0142
Fax: 718-353-5998

2. Hazard(s) identification

2.1. Classification of the substance or mixture

Skin Irrit. 2;H315

Causes Skin Irritation

2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.



Warning

[Prevention]:

P261 Avoid breathing dust / fume / gas / mist / vapors / spray.

P271 Use only outdoors or in a well-ventilated area.

[Response]:

P312 Call a POISON CENTER or doctor / physician if you feel unwell.

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P340 Remove victim to fresh air and keep at rest in a position comfortable for breathing.

[Storage]:

No GHS storage statements

[Disposal]:

No GHS disposal statements

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
SODIUM SILICATE CAS#: 1344-09-8	>5	Skin Irrit. 2 Eye Irrit. 2	[1][2]
BENTONITE CAS#: 1302-78-9	>60	Not Classified	[1]
ETHYLENE GLYCOL CAS#: 107-21-1	<10	Acute toxicity, Oral 4, H302	[1]
TALC CAS#: 14807-96-6	>20	Acute Toxicity, Inhalation 4 Skin irritation 3 Specific target organ toxicity - single exposure 3	[1][2]
MICA CAS#: 12001-26-2	>10	Skin Irrit 2 Eye Irrit 2B Carcinogenicity (inhalation) 1A SPECIFIC Target (inhalation) 1	[1][2]

In accordance with paragraph (i) of §1910.1200, the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

[1] Substance classified with a health or environmental hazard.

[2] Substance with a workplace exposure limit.

[3] PBT-substance or vPvB-substance.

*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

General

In all cases of doubt, or when symptoms persist, seek medical attention.
Never give anything by mouth to an unconscious person.

Inhalation

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eyes

Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.

Skin

Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.

Ingestion

If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

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Overview No specific symptom data available.
See section 2 for further details.

Inhalation Harmful if inhaled.

5. Fire-fighting measures

5.1. Extinguishing media

Water fog, CO₂, dry chemical, universal foams

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: No hazardous decomposition data available.

Avoid breathing dust / fume / gas / mist / vapors / spray.

5.3. Advice for fire-fighters

Wear self-contained breathing apparatus and protective clothing.

ERG Guide No. ---

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Put on appropriate personal protective equipment (see section 8).

6.2. Environmental precautions

Do not allow spills to enter drains or waterways.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

Absorb spill with vermiculite or other inert material, then place in a container for chemical waste.

For Large Spills: Flush spill area with water spray. Prevent run-off from entering drains, sewers, or streams, collect run-off.

7. Handling and storage

7.1. Precautions for safe handling

Avoid contact with eyes and skin. Wash thoroughly after handling. Do not breathe vapors or fumes.

Prevention of Fire and Explosion: Keep from contact with oxidizing materials, alkalis and acids. Store away from heat, sunlight and moisture.

See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Handle containers carefully to prevent damage and spillage.

Incompatible materials: Oxidizing agents, alkali metals

See section 2 for further details. - [Storage]:

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7.3. Specific end use(s)

No data available.

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
1344-09-08	SODIUM SILICATE	OSHA	2 mg/m3
		ACGIH	2 mg/m3
		NIOSH	No Established Limit
		Supplier	No Established Limit
1302-78-9	BENTONITE	OSHA	27 mppcf
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
107-21-1	ETHYLENE GLYCOL	OSHA	No Established Limit
		ACGIH	50 ppm as Vapor/mist
		NIOSH	Ceiling 50 ppm
		Supplier	No Established Limit
14807-96-6	TALC	OSHA	20 mppcf
		ACGIH	2 mg/m3
		NIOSH	TWA 2 mg/m ³ (resp)
		Supplier	No Established Limit
12001-26-2	MICA	OSHA	20 mppcf
		ACGIH	No Established Limit
		NIOSH	TWA 3 mg/m ³ (resp)
		Supplier	No Established Limit

Carcinogen Data

CAS No.	Ingredient	Source	Value
1344-09-08	SODIUM SILICATE	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
1302-78-9	BENTONITE	OSHA	Select Carcinogen: No
		NTP	Known: Yes; Suspected: No
		IARC	Group 1: Yes; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
107-21-1	ETHYLENE GLYCOL	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
14807-96-6	TALC	OSHA	Select Carcinogen: No
		NTP	Known: Yes; Suspected: No
		IARC	Group 1: Yes; Group 2a: No; Group 2b: No; Group 3: Yes; Group 4: No;
12001-26-2	MICA	OSHA	Select Carcinogen: No

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		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

8.2. Exposure controls

Respiratory

If engineering controls do not maintain airborne concentrations to an acceptable level, a NIOSH approved respirator must be worn.

Respirator Type: Organic vapor. If respirators are used, a program should be instituted to

assure Compliance with OSHA Standard 29 CFR 1910.134.

Eyes

Safety glasses with side shields, goggles or face shield are recommended.

Skin

Wear overalls to keep skin contact to a minimum.

Engineering Controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. Supplementary local exhaust ventilation, closed systems, or respiratory protection may be needed in special circumstances such as poorly ventilated spaces, evaporation from large surfaces, spraying, heating, etc. Recommended Decontamination Facilities: Eye bath, washing facilities.

Other Work Practices

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

Appearance	Grey paste
Odor	Slight
Odor threshold	Not Measured
pH	Not Measured
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	N/A C
Flash Point	None
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: 135C(275F): NA Upper Explosive Limit: 199C(390F): NA
Vapor pressure (Pa)	N/A
Vapor Density	Not Measured
Specific Gravity	N/A
Solubility in Water	Complete
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	(ASTM D 2155): NA
Decomposition temperature	Not Measured
Viscosity (cSt)	N/A
Volatiles (% by weight)	NA

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Octanol/Water Partition Coefficient

NA

9.2. Other information

No other relevant information.

10. Stability and reactivity

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

No data available.

10.5. Incompatible materials

Strong Oxidizers

10.6. Hazardous decomposition products

No hazardous decomposition data available.

11. Toxicological information

Acute toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm
SODIUM SILICATE (1344-09-08)	3.400 mg/kg, Rat	No data available	2000mg/m ³	No data available	No data available
BENTONITE (1302-78-9)	No data available	35 mg/kg, Rats	No data available	No data available	No data available
ETHYLENE GLYCOL (107-21-1)	4,700 mg/kg, Rat	10,626 mg/kg, Rabbit	No data available	No data available	No data available
TALC (14807-96-6)	> 1600 mg/kg, Rat	No data available	No data available	No data available	No data available
MICA (12001-26-2)	No data available	No data available	No data available	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable

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Skin corrosion/irritation	---	Not Applicable
Serious eye damage/irritation	---	Not Applicable
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

12. Ecological information

12.1. Toxicity

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
SODIUM SILICATE (1344-09-08)	1108 mg/l	1700 mg/l	207 mg/l
BENTONITE (1302-78-9)	19,000 mg/L	Not Available	Not Available
ETHYLENE GLYCOL (107-21-1)	18,500 mg/L	41,000 mg/L	Not Available
TALC (14807-96-6)	Not Available	Not Available	Not Available
MICA (12001-26-2)	Not Available	Not Available	Not Available

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available.

13. Disposal considerations

13.1. Waste treatment methods

Safety Data Sheet

FURNACE CEMENT (M) NON-ASBESTOS

SDS Revision Date:

04/02/2015



Observe all federal, state and local regulations when disposing of this substance.

14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	Not Applicable	Not Regulated	Not Regulated
14.2. UN proper shipping name	Not Regulated	Not Regulated	Not Regulated
14.3. Transport hazard class(es)	DOT Hazard Class: Not Applicable	IMDG: Not Applicable Sub Class: Not Applicable	Air Class: Not Applicable
14.4. Packing group	Not Applicable	Not Applicable	Not Applicable
14.5. Environmental hazards			
IMDG	Marine Pollutant: No		
14.6. Special precautions for user	No further information		

15. Regulatory information

Regulatory Overview	The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.
Toxic Substance Control Act (TSCA)	All components of this material are either listed or exempt from listing on the TSCA Inventory.
WHMIS Classification	Not Regulated
US EPA Tier II Hazards	Fire: No Sudden Release of Pressure: No Reactive: No Immediate (Acute): No Delayed (Chronic): No

EPCRA 311/312 Chemicals and RQs:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 302 Extremely Hazardous:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 313 Extremely Hazardous:

ETHYLENE GLYCOL

Proposition 65 - Carcinogens (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Developmental Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Female Repro Toxins (>0.0%):

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To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Male Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

New Jersey RTK Substances (>1%):

ETHYLENE GLYCOL

TALC

MICA

Pennsylvania RTK Substances (>1%):

TALC

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

The opinions expressed are those of qualified experts within ComStar International Inc. We believe that the information contained is current as of the date of the Material Safety Data Sheet. Since the use of this information and of these opinions and the conditions of the use of the product are not within the control of ComStar International Inc., it is the user's obligation to determine the conditions of safe use of the product.

End of Document



MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication
And WHIMS Standard 29 CFR 1910-1200

Print Date: 06/01/08

Product Name: FURNACE CEMENT (M) NON-ASBESTOS **Product Number: 40355M, 40377M**

I - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Manufacturer: ComStar International Inc. **Tel:** 718-445-7900, 800-328-0142
Address: 20-45 128th Street, College Point, NY 11356 **Fax:** 718-353-5998

Chemical Name: Blended Formula

Synonym(s): None

II - COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENTS	OSHA PEL	ACGIH TLV	CAS NO.
SODIUM SILICATE	2 mg/m ³	2 mg/m ³	1344-09-08
BENTONITE	27 mppcf	N/A	1302-78-9
ETHYLENE GLYCOL		50 ppm as Vapor/mist	107211
TALC	20 mppcf	2 mg/m ³	14807-96-6
MICA	20 mppcf	N/A	12001-26-2

III - HAZARDS IDENTIFICATION

HMIS Hazard Ratings: Health – 1, Flammability – 0, Chemical Reactivity – 0

NFPA Hazard Ratings: Health – 1, Flammability – 0, Chemical Reactivity – 0

NOTE: HMIS and NFPA ratings involve data and interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

IV - FIRST-AID MEASURES

Inhalation: If symptomatic, move to fresh air. Get medical attention if symptoms persist.

Eyes: Immediately flush with plenty of water for at least 15 minutes. Get medical attention.

Skin: Remove contaminated clothing, wash affected skin with soap and water immediately. Get medical attention if symptoms occur.

Ingestion: Drink plenty of water. Get immediate medical attention.

V - FIRE FIGHTING MEASURES

Extinguishing Media: All Universal foams, CO₂, water fog

Special Fire Fighting Procedures: Wear self-contained breathing apparatus and protective clothing.

Hazardous Combustion Products: Unknown

Unusual Fire and Exposure Hazards: None known. Keep product cool.

VI - ACCIDENTAL RELEASE MEASURES

Absorb spill with vermiculite or other inert material, then place in a container for chemical waste.

For Large Spills: Flush spill area with water spray. Prevent run-off from entering drains, sewers, or streams, collect run-off.

VII - HANDLING AND STORAGE

Personal Precautionary Measures: Avoid contact with eyes and skin. Wash thoroughly after handling. Do not breathe vapors or fumes.

Prevention of Fire and Explosion: Keep from contact with oxidizing materials, alkalis and acids. Store away from heat, sunlight and moisture.

VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:

ACGIH Threshold Limit Value (TLV): see section II

OSHA (USA) Permissible Exposure Limit (PEL): see section II

Ventilation: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. Supplementary local exhaust ventilation, closed systems, or respiratory protection may be needed in special circumstances such as poorly ventilated spaces, evaporation from large surfaces, spraying, heating, etc.

Respiratory Protection: If engineering controls do not maintain airborne concentrations to an acceptable level, a NIOSH approved respirator must be worn.

Respirator Type: Organic vapor. If respirators are used, a program should be instituted to assure Compliance with OSHA Standard 29 CFR 1910.134.

Eye Protection: Wear safety glasses with side shields (or goggles) and a face shield.

Skin Protection: It is a good industrial hygiene practice to minimize skin contact.

Recommended Decontamination Facilities: Eye bath, washing facilities

IX - PHYSICAL AND CHEMICAL PROPERTIES

Color: Wet cement, dark granular material

Odor: Odorless

Odor Threshold: not available

Specific Gravity (H₂O = 1): 3.0 – 3.6

Vapor Pressure at 70° F: N/A

Vapor Density (Air = 1): N/A

Evaporation Rate (n-butyl acetate = 1): N/A

Volatile Fraction by Weight: N/A

Boiling Point: None

Melting Point: Not available

Viscosity at 25° C (77° F): N/A

Solubility in Water: No

Octanol/ Water Partition Coefficient: not available

Flash Point: None

Lower Explosive Limit 135° C (275° F): N/A

Upper Explosive Limit 199° C (390° F): N/A

Auto ignition Temperature (ASTM D 2155): N/A

X - STABILITY AND REACTIVITY

Stability: Product is considered stable.

Incompatibility: none

Hazardous Polymerization: will not occur

XI - TOXICOLOGICAL INFORMATION

Inhalation: Low hazard for usual industrial handling by trained personnel.

Eyes: Causes irritation.

Skin: Low hazard for usual industrial handling by trained personnel, see label warnings.

Ingestion: Low hazard at small amounts.

Acute Toxicity Data:

Oral LD-50 (rabbit): not available

Inhalation LC-50: not available

Human Dermal Exposure: Regardless of concentration, the severity of damage and extent of its irreversibility increases with length of contact time. Prolonged contact with sodium hydroxide solutions of $\geq 1\%$ can cause a high degree of tissue destruction. The latent period, following skin contact during which no sensation of irritation occurs, varies from several hours for 0.4 – 4% solutions of 3 minutes with concentrations of 25% or greater.

XII - ECOLOGICAL INFORMATION

Introduction: Leaks should be stopped. Spills should be contained and cleaned up immediately. Large liquid spills should be removed by using a vacuum truck. Solid spills should be scooped up and placed in approved containers for disposal. The spill area should then be flushed with water followed by liberal covering of sodium bicarbonate. All clean-up material should be removed and placed in approved containers, labeled and stored in a safe place to await proper treatment or disposal. Spills on areas other than pavement, e.g., dirt or sand, may be handled by removing the affected soils and placing in approved containers. Persons performing clean-up work should wear adequate personal protective equipment and clothing. Spills or releases should be reported, if required, to the appropriate local, state and federal regulatory agencies.

XIII - DISPOSAL CONSIDERATIONS

Discharge, treatment, or disposal may be subject to national, state, or local laws. Check with state and local officials before disposal.

XIV - TRANSPORT INFORMATION

DOT (USA) Status: not regulated

TDG (Canada) Status: not regulated

Air – International Civil Aviation Organization (ICAO)

ICAO Status: Check with air freight forwarder for ruling.

Sea – International Maritime Dangerous Goods (IMDG)

IMDG Status: not regulated

XV - REGULATORY INFORMATION

This document has been prepared in accordance with the MSDS requirements of the OSHA Hazard Communication Standard 29 CFR 910.1200.

OSHA hazardous chemical(s): trade secret (blended formula).

Material(s) known to the State of California to cause cancer: none

Material(s) known to the State of California to cause adverse reproductive effects: none

Massachusetts Substance List: none.

New Jersey Workplace Hazardous Substance List: none

Pennsylvania Hazardous Substance List: none

This document has been prepared in accordance with the MSDS requirements of the WHMIS Controlled Products Regulation.

WHMIS (Canada) Ingredient Disclosure List: trade secret (blended formula).

WHMIS (Canada) Status: not listed.

WHMIS (Canada) controlled material(s): not listed.

WHMIS (Canada) Hazard Classification: not classified.

Carcinogenicity Classification (components present at 0.1% or more): None

International Agency for Research on Cancer (IARC): Not listed

American Conference of Governmental Industrial Hygienist (ACGIH): Not listed

National Toxicology Program (NTP): not listed

Occupational Safety and Health Administration (OSHA): Not listed

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372: None.

SARA (U.S.A.) Sections 311 and 312 hazard classification(s): Not listed.

NOTE: *The opinions expressed are those of qualified experts within ComStar International Inc. We believe that the information contained is current as of the date of the Material Safety Data Sheet. Since the use of this information and of these opinions and the conditions of the use of the product are not within the control of ComStar International Inc., it is the user's obligation to determine the conditions of safe use of the product.*



SAFETY DATA SHEET

Print Date: 10/26/2015

PRODUCT NAME: PERI-BOND (PB-3) COLOR: WHITE	REVISION DATE: October 26, 2015
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1. PRODUCT AND COMPANY IDENTIFICATION

Commercial Product Name: PERI-BOND (PB-3)

Product Classification: Caulk, Sealant

Manufacturer:

Silco Inc.

7635 St. Clair Avenue

Mentor, OH 44060

PHONE: 440-975-8886 FAX: 440-975-8887

General Description: Siliconized acrylic caulk

Physical Form: Paste

Color: White

Odor: Slight mild odor

NFPA PROFILE: Health – 2 Flammability – 1 Instability/Reactivity - 0

Note: NFPA = National Fire Protection Association

2. HAZARDS IDENTIFICATION

OSHA/HCS Status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture: CARCINOGENICITY - Category 1A
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 72.5%

Physical Hazards: Not classified

GHS Label Elements

Signal Word:



Danger

Hazard Statement: May cause eye/lung/ skin irritation. May cause Cancer. May cause genetic defects. May cause damage to organs through prolonged exposure.

Precautionary Statement: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves /
Prevention: protective clothing / eye protection / face protection. Wash well after



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Response:	<p>handling. Contaminated work clothing should not be allowed out of work place.</p> <p>SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical attention / advice. Get medical attention / advice if you feel unwell.</p> <p>EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritant persists get medical attention / advice.</p> <p>If exposed or concerned: get medical attention or advice. Take off contaminated clothing and wash it before reuse.</p>
Storage:	Store locked up.
Disposal:	Disposal of contents / container in accordance with local / regional / state / federal and international regulations.
Hazard(S) not Otherwise classified (HNOC):	None known.
Supplemental Information:	Sanding and grinding dusts may be harmful if inhaled. This product contains Crystalline Silica which can cause lung cancer or silicosis. The risk of cancer depends on the duration and level of exposure to dust from sanding surfaces or mist from spray applications. Since this product is not meant to be sanded or sprayed, risk of exposure is considered low. Avoid contact with skin and clothing. Wash thoroughly after handling.
Substance(s) formed under the conditions of use:	Emits toxic fumes when heated.
HMIS (Ratings):	<p>Health: 2* Chronic effects</p> <p>Flammability: 1</p> <p>Physical hazard: 0</p> <p>Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.</p>

3. COMPOSITION/ INGREDIENTS

Substance/mixture:		Mixture	
Product Name:		Peri Bond (PB-3)	
Ingredient name	%	CAS number	



SAFETY DATA SHEET

Limestone	30 - 60	1317-65-3
Titanium Dioxide	0.1 - 1.5	13463-67-7
Acetaldehyde	0.1 - 1	75-07-0
Vinyl Acetate	0.1 - 1	108-05-4
Crystalline Silica, respirable powder (<10 microns)	0.1 - 1	14808-60-7
Ethylene Glycol	0.5 - 1.5	107-21-1

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

4. FIRST AID MEASURES

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

Eye Contact:	Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.
Inhalation:	Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
Skin Contact:	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
Ingestion:	If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye Contact:	Direct contact may cause slight to moderate irritation.
Inhalation:	May cause slight irritation to respiratory passages – headache – dizziness.
Skin Contact:	May cause allergic skin reactions and / or central nervous system depression.
Ingestion:	No known significant effects or critical hazards. Low ingestion hazard.

Over-exposure signs/symptoms

Eye Contact:	No specific data.
Inhalation:	No specific data.
Skin Contact:	No specific data.
Ingestion:	No specific data.



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Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments:	No specific treatment.
Protection of first-aiders:	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media:	None known.
Specific hazards arising from the chemical:	In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous thermal decomposition products	Decomposition products may include the following materials: carbon dioxide, carbon monoxide, metal oxide/oxides
Specific protective equipment and precautions for firefighters:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Fire Fighting equipment / Instructions:	Move containers from fire area if you can do so without risk.
General fire hazards:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
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**Methods and materials
for containment and
cleaning up:**

For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Large Spills: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Small Spills: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Environmental
precautions:**

Prevent further leakage or spillage if safe to do so.

7. HANDLING AND STORAGE

**Precaution for safe
handling:**

Protective measures: Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Conditions for safe storage, including any incompatibilities

Special precautions: If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Do not store below the following temperature: 5°C (41°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters: Occupational exposure limits

Ingredient name	Exposure limits
Limestone	OSHA PEL (United States, 2/2013). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction
Titanium Dioxide	OSHA PEL (United States, 2/2013). TWA: 15 mg/m ³ 8 hours. Form: Total dust
Acetaldehyde	ACGIH TLV (United States, 6/2013). TWA: 10 mg/m ³ 8 hours.
	ACGIH TLV (United States, 6/2013). C: 45 mg/m ³
	C: 25 ppm
Vinyl Acetate	OSHA PEL (United States, 2/2013). TWA: 360 mg/m ³ 8 hours.
	TWA: 200 ppm 8 hours.
	ACGIH TLV (United States, 6/2013). STEL: 53 mg/m ³ 15 minutes.
	STEL: 15 ppm 15 minutes.
	TWA: 35 mg/m ³ 8 hours.
	TWA: 10 ppm 8 hours.
	ACGIH TLV (United States, 6/2013). TWA: 0.025 mg/m ³ 8 hours. Form: Respirable
Crystalline Silica, respirable powder (<10 microns)	OSHA PEL Z3 (United States, 2/2013). TWA: 10 MG/M3 / (%SiO ₂ +2) 8 hours. Form: Respirable
	TWA: 250 MPPCF / (%SiO ₂ +5) 8 hours.
	Form: Respirable
Ethylene Glycol	OSHA PEL (United States, 2/2013). TWA: 5 mg/m ³ 8 hours.
	ACGIH TLV (United States, 6/2013). C: 100 mg/m ³ Form: Aerosol



SAFETY DATA SHEET

Key to abbreviations

A	= Acceptable Maximum Peak
S	= Potential skin absorption
ACGIH	= American Conference of Governmental Industrial Hygienists.
C	= Ceiling Limit
SR	= Respiratory sensitization
SS	= Skin sensitization
F	= Fume
STEL	= Short term Exposure limit values
IPEL	= Internal Permissible Exposure Limit
TD	= Total dust
OSHA	= Occupational Safety and Health Administration.
TLV	= Threshold Limit Value
R	= Respirable
TWA	= Time Weighted Average
Z	= OSHA 29CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures:	If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.
Appropriate engineering controls:	If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Environmental exposure controls:	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels
Individual protection measures	
Hygiene measures:	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	Safety glasses with side shields.
Skin protection	
Hand protection:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical

Body protection:	<p>products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.</p> <p>Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.</p> <p>Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.</p> <p>Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.</p>
Other skin protection:	
Respiratory protection	

9. PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance

Physical state:	Paste
Color:	White
Odor:	Mild Acrylic
Odor threshold:	Not available.
pH:	7.5-8.5
Melting point:	Not available.
Boiling point:	>37.78°C (>100°F)
Flash point:	Closed cup: >93.89°C (>201°F)
Material supports combustion:	Yes.
Auto-ignition temperature:	Not available.
Flammability (solid, gas):	Not available.
Lower and upper explosive (flammable) limits:	Not available.
Evaporation rate:	0.33 (butyl acetate = 1)
Vapor pressure:	2.3 kPa (17.5 mm Hg) [room temperature]

Vapor density:	Not available.
Relative density:	1.68
Density (lbs/gal)	14.02
Solubility:	Soluble in water.
Partition coefficient: n-octanol/water:	Not available.
Viscosity:	15-40 g/s
% Solid. (w/w)	82.9

10. STABILITY AND REACTIVITY

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	The product is stable.
Possibility of hazardous Reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.
Incompatible materials	Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.
Hazardous decomposition products:	Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Titanium Dioxide	LD50 Oral	Rat	>10 g/kg	-
Acetaldehyde	LC50 Inhalation Gas.	Rat	13300 ppm	4 hours
	LD50 Dermal	Rabbit	3540 mg/kg	-
	LD50 Oral	Rat	661 mg/kg	-
Ethylene Glycol	LD50 Dermal	Rabbit	9.53 g/kg	-
	LD50 Oral	Rat	4700 mg/kg	-
Vinyl Acetate	LC50 Inhalation Vapor	Mouse	1460 ppm	4 hours
	LC50 Inhalation Vapor	Rat	11400 mg/m ³	4 hours
	LC50 Inhalation Vapor	Rat	3680 ppm	4 hours
	LD50 Dermal	Rabbit	2335 mg/kg	-
	LD50 Oral	Rat	2.5 g/kg	-

Conclusion/Summary:	There are no data available on the mixture itself.
Irritation/Corrosion	
Conclusion/Summary	
Skin:	There are no data available on the mixture itself.

Eyes: There are no data available on the mixture itself.
 Respiratory: There are no data available on the mixture itself.
 Sensitization: There are no data available on the mixture itself.
 Conclusion/Summary
 Skin: There are no data available on the mixture itself.
 Respiratory: There are no data available on the mixture itself.
 Mutagenicity
 Conclusion/Summary: There are no data available on the mixture itself.
 Carcinogenicity
 Conclusion/Summary: There are no data available on the mixture itself.
 Classification

Product/ingredient name	OSHA	IARC	NTP
Titanium Dioxide	-	2B	-
Acetaldehyde	-	1	Reasonably anticipated to be a human carcinogen.
Vinyl Acetate	-	2B	-
Crystalline Silica, respirable powder (<10 microns)	-	1	Known to be a human carcinogen.

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4

NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen

OSHA: +

Not listed/not regulated: -

Reproductive toxicity

Conclusion/Summary: There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary: There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Name	Category
Acetaldehyde	Category 3
Vinyl	Category 3

Specific target organ toxicity (repeated exposure)

Name	Category
Vinyl Acetate	Category 1
Crystalline Silica, respirable powder (<10 microns)	Category 2
Ethylene Glycol	Category 2

Target organs: Contains material which may cause damage to the following organs: lungs, upper respiratory tract, skin, eyes.

Aspiration hazard

Not available.

Information on the likely routes of exposure

Potential acute health effects

Eye contact No known significant effects or critical hazards.



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Inhalation	No known significant effects or critical hazards.
Skin contact	No known significant effects or critical hazards.
Ingestion	No known significant effects or critical hazards.
Over-exposure signs/symptoms	
Eye contact	No specific data.
Inhalation	No specific data.
Skin contact	No specific data.
Ingestion	No specific data.
Delayed and immediate effects and also chronic effects from short and long term exposure	
Conclusion/Summary:	There are no data available on the mixture itself. This product contains crystalline silica which can cause lung cancer or silicosis. The risk of cancer depends on the duration and level of exposure to dust from sanding surfaces or mist from spray applications. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.
Short term exposure	
Potential immediate effects:	
Potential delayed effects:	There are no data available on the mixture itself.
Long term exposure	
Potential immediate effects:	There are no data available on the mixture itself.
Potential delayed effects:	
	There are no data available on the mixture itself.
	There are no data available on the mixture itself.
Potential chronic health effects	
General:	No known significant effects or critical hazards.
Carcinogenicity:	May cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity:	No known significant effects or critical hazards.
Teratogenicity:	No known significant effects or critical hazards.
Developmental effects:	No known significant effects or critical hazards.
Fertility effects:	No known significant effects or critical hazards.
Numerical measures of toxicity	
Acute toxicity estimates	
Route	ATE value
Oral	13704.4 mg/kg

12. ECOLOGICAL CONSIDERATIONS

Toxicity

Product/ingredient name	Result	Species	Exposure
Titanium Dioxide	Acute EC50 100 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
Vinyl Acetate	Acute LC50 31080 to 36630 µg/l Fresh water	Fish - Poecilia reticulata	96 hours

Persistence and degradability: Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Acetaldehyde	-0.34	-	low
Vinyl Acetate	0.73	-	low
Ethylene Glycol	-1.36	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}): Not available.

13. DISPOSAL CONSIDERATIONS

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures



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14. TRANSPORT INFORMATION			
	DOT	IMDG	IATA
UN number	UN3082	Not regulated.	Not regulated.
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.	-	-
Transport hazard class (es)	9	-	-
Packing group	III	-	-
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.
Product RQ (lbs)	25000	Not applicable.	Not applicable.
RQ substances	(carbendazim (ISO))	Not applicable.	Not applicable.
<p>Additional information</p> <p>DOT: Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.</p> <p>IMDG : None identified.</p> <p>IATA: None identified.</p> <p>Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.</p>			
15. REGULATORY INFORMATION			
<p>United States inventory (TSCA 8b): All components are listed or exempted.</p> <p>Australia inventory (AICS): Not determined.</p> <p>Canada inventory (DSL): At least one component is not listed.</p> <p>China inventory (IECSC): Not determined.</p> <p>Europe inventory (REACH): Please contact your supplier for information on the inventory status of this material.</p> <p>Japan inventory (ENCS): Not determined.</p> <p>Korea inventory (KECI): Not determined.</p> <p>New Zealand (NZIoC): Not determined.</p> <p>Philippines inventory (PICCS): Not determined.</p> <p>United States</p> <p>U.S. Federal regulations: SARA 302/304</p> <p>SARA 304 RQ : 711338.7 lbs / 322947.8 kg [50855.5 gal / 192509.2 L]</p> <p>Composition/information on ingredients</p>			



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Name	EHS	SARA 302 TPQ		SARA 304 RQ	
		(lbs)	(gallons)	(lbs)	(gallons)
Vinyl Acetate	Yes.	1000	129	5000	644.8

SARA 311/312

Classification : Delayed (chronic) health hazard

Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Titanium Dioxide	No.	No.	No.	No.	Yes.
Acetaldehyde	Yes.	No.	No.	Yes.	Yes.
Vinyl Acetate	Yes.	No.	Yes.	Yes.	Yes.
Ethylene Glycol	No.	No.	No.	Yes.	Yes.
Crystalline Silica, respirable powder	No.	No.	No.	No.	Yes.

Pennsylvania (worker and community right to know act): The following components are cited in the Pennsylvania Hazardous Substances List, and are present at levels that require reporting.

Ethylene Glycol 107-21-1 <2%

SARA 313

Supplier notification:	Chemical name	CAS Number	Concentration
	Acetaldehyde	75-07-0	0.1-1
	Vinyl Acetate	108-05-4	0.1-1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

California Prop. 65

WARNING: This product contains trace amounts of components known to the state of California to cause cancer, birth defects, or other reproductive harm.

16. OTHER INFORMATION

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
("Marpol" = marine pollution)
UN = United Nations

Prepared by: Silco Inc.

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

www.silco-inc.com

U.S. SILICA COMPANY

SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier: Silica Sand or Ground Silica; crystalline silica (quartz)

Product Name/Trade Names:

Sand and Ground Silica Sand (sold under various names: ASTM TESTING SANDS • GLASS SAND • FILPRO® • FLINT SILICA • DM-SERIES • F-SERIES • FOUNDRY SANDS • FJ-SERIES H-SERIES • L-SERIES • N-SERIES • NJ SERIES • OK-SERIES • P-SERIES • T-SERIES • hydraulic fracturing sand, all sizes • frac sand, all sizes • MIN-U-SIL® Fine Ground Silica • MYSTIC WHITE® • #1 DRY • #1 SPECIAL • PENN SAND® • PRO WHITE® • SILURIAN® • Q-ROK® • SIL-CO-SIL® Ground Silica • MICROSIL® • SUPERSIL® • MASON SAND • GS SERIES • PERSPEC • proppant, all sizes • SHALE FRAC® - SERIES • KOSSE WHITE® • OTTAWA WHITE® • OPTIJUMP® • LIGHTHOUSE™

Chemical Name or Synonym:

Crystalline Silica (Quartz), Sand, Silica Sand, Flint, Ground Silica, Fine Ground Silica, Silica Flour.

Recommended use of the chemical and restrictions on use: (non-exhaustive list): brick, ceramics, foundry castings, glass, grout, hydraulic fracturing sand, frac sand, proppant, mortar, paint and coatings, silicate chemistry, silicone rubber, thermoset plastics.

DO NOT USE U.S. SILICA COMPANY SAND OR GROUND SILICA FOR SAND BLASTING

Manufacturer:

U.S. Silica Company
8490 Progress Drive, Suite 300
Frederick, MD 21701
U.S.A.

Phone: 800-243-7500

Emergency Phone: 301-682-0600

Fax: 301-682-0690

2. HAZARD(S) IDENTIFICATION

Classification:

Physical	Health
Not Hazardous	Carcinogen Category 1A Specific Target Organ Toxicity – Repeated Exposure Category 1



DANGER

May cause cancer by inhalation.

Causes damage to lungs through prolonged or repeated exposure by inhalation.

Response:

If exposed or concerned: Get medical advice.

Disposal:

Dispose of contents/containers in accordance with local regulation

Prevention

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust.

Do not eat, drink or smoke when using this product.

Wear protective gloves and safety glasses or goggles.

In case of inadequate ventilation wear respiratory protection.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS No.	Percent
Crystalline Silica (quartz)	14808-60-7	95-99.9

4. FIRST-AID MEASURES

Inhalation: First aid is not generally required. If irritation develops from breathing dust, move the person from the overexposure and seek medical attention if needed.

Skin contact: First aid is not required.

Eye contact: Wash immediately with plenty of water. Do not rub eyes. If irritation persists, seek medical attention.

Ingestion: First aid is not required.

Most important symptoms/effects, acute and delayed: Particulates may cause abrasive eye injury. Inhalation of dust may cause respiratory tract irritation. Symptoms of exposure may include cough, sore throat, nasal congestion, sneezing, wheezing and shortness of breath. Prolonged inhalation of respirable crystalline silica above certain concentrations may cause lung diseases, including silicosis and lung cancer.

Indication of immediate medical attention and special treatment, if necessary: Immediate medical attention is not required.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media: Use extinguishing media appropriate for surrounding fire.

Specific hazards arising from the chemical: Product is not flammable, combustible or explosive.

Special protective equipment and precautions for fire-fighters: None required.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures: Wear appropriate protective clothing and respiratory protection (see Section 8). Avoid generating airborne dust during clean-up.

Environmental precautions: No specific precautions. Report releases to regulatory authorities if required by local, state and federal regulations.

Methods and materials for containment and cleaning up: Avoid dry sweeping. Do not use compressed air to clean spilled sand or ground silica. Use water spraying/flushing or ventilated or HEPA filtered vacuum cleaning system, or wet before sweeping. Dispose of in closed containers.

7. HANDLING AND STORAGE

Precautions for safe handling:

Avoid generating dust. Do not breathe dust. Do not rely on your sight to determine if dust is in the air. Respirable crystalline silica dust may be in the air without a visible dust cloud. Use adequate exhaust

ventilation and dust collection to reduce respirable crystalline silica dust levels to below the permissible exposure limit ("PEL"). Maintain and test ventilation and dust collection equipment. Use all available work practices to control dust exposures, such as water sprays. Practice good housekeeping. Do not permit dust to collect on walls, floors, sills, ledges, machinery, or equipment. Keep airborne dust concentrations below permissible exposure limits.

Where necessary to reduce exposures below the PEL or other applicable limit (if lower than the PEL), wear a respirator approved for silica containing dust when using, handling, storing or disposing of this product or bag. See Section 8, for further information on respirators. Do not alter the respirator. Do not wear a tight-fitting respirator with facial hair such as a beard or mustache that prevents a good face to face piece seal between the respirator and face. Maintain, clean, and fit test respirators in accordance with applicable standards. Wash or vacuum clothing that has become dusty.

Participate in training, exposure monitoring, and health surveillance programs to monitor any potential adverse health effects that may be caused by breathing respirable crystalline silica. The OSHA Hazard Communication Standard, 29 CFR Sections 1910.1200, 1915.1200, 1917.28, 1918.90, 1926.59 and 1928.21, and state and local worker or community "right-to-know" laws and regulations should be strictly followed.

DO NOT USE U.S. SILICA COMPANY SAND OR GROUND SILICA FOR SAND BLASTING

Conditions for safe storage, including any incompatibilities: Use dust collection to trap dust produced during loading and unloading. Keep containers closed and store bags to avoid accidental tearing, breaking, or bursting.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure guidelines:

Component	OSHA PEL	ACGIH TLV	NIOSH REL
Crystalline Silica (quartz)	<u>10 mg/m³</u> %SiO ₂ + 2 TWA (respirable dust) <u>30 mg/m³</u> %SiO ₂ + 2 TWA (total dust)	0.025 mg/m ³ TWA (respirable dust)	0.05 mg/m ³ TWA (respirable dust)

If crystalline silica (quartz) is heated to more than 870°C, quartz can change to a form of crystalline silica known as tridymite; if crystalline silica (quartz) is heated to more than 1470°C, quartz can change to a form of crystalline silica known as cristobalite. The OSHA PEL for crystalline silica as tridymite or cristobalite is one-half of the OSHA PEL for crystalline silica (quartz).

Appropriate engineering controls: Use adequate general or local exhaust ventilation to maintain concentrations in the workplace below the applicable exposure limits listed above.

Respiratory protection: If it is not possible to reduce airborne exposure levels to below the OSHA PEL or other applicable limit with ventilation, use the table below to assist you in selecting respirators that will reduce personal exposures to below the OSHA PEL. This table is part of the NIOSH Respirator Selection Logic, 2004, Chapter III, Table 1, "Particulate Respirators". The full document can be found at www.cdc.gov/niosh/nppt/topics/respirators; the user of this MSDS is directed to that site for information concerning respirator selection and use. The assigned protection factor (APF) is the maximum anticipated level

of protection provided by each type of respirator worn in accordance with an adequate respiratory protection program. For example, an APF of 10 means that the respirator should reduce the airborne concentration of a particulate by a factor of 10, so that if the workplace concentration of a particulate was 150 ug/m³, then a respirator with an APF of 10 should reduce the concentration of particulate to 15 ug/m³. In using chemical cartridges, consideration must be given to selection of the correct cartridge for the chemical exposure and the maximum use concentration for the cartridge. In addition a cartridge change-out schedule must be developed based on the concentrations in the workplace.

Assigned protection factor ¹	Type of Respirator (Use only NIOSH-certified respirators)
10	Any air-purifying elastomeric half-mask respirator equipped with appropriate type of particulate filter. ² Appropriate filtering facepiece respirator. ^{2,3} Any air-purifying full facepiece respirator equipped with appropriate type of particulate filter. ² Any negative pressure (demand) supplied-air respirator equipped with a half-mask.
25	Any powered air-purifying respirator equipped with a hood or helmet and a high efficiency (HEPA) filter. Any continuous flow supplied-air respirator equipped with a hood or helmet.
50	Any air-purifying full facepiece respirator equipped with N-100, R-100, or P-100 filter(s). Any powered air-purifying respirator equipped with a tight-fitting facepiece (half or full facepiece) and a high-efficiency filter. Any negative pressure (demand) supplied-air respirator equipped with a full facepiece. Any continuous flow supplied-air respirator equipped with a tight-fitting facepiece (half or full facepiece). Any negative pressure (demand) self-contained respirator equipped with a full facepiece.
1,000	pressure-demand supplied-air respirator equipped with a half-mask.
<p>1. The protection offered by a given respirator is contingent upon (1) the respirator user adhering to complete program requirements (such as the ones required by OSHA in 29CFR1910.134), (2) the use of NIOSH-certified respirators in their approved configuration, and (3) individual fit testing to rule out those respirators that cannot achieve a good fit on individual workers.</p> <p>2. Appropriate means that the filter medium will provide protection against the particulate in question.</p> <p>3. An APF of 10 can only be achieved if the respirator is qualitatively or quantitatively fit tested on individual workers.</p>	

Skin protection: Maintain good industrial hygiene. Protection recommended for workers suffering from dermatitis or sensitive skin.

Eye protection: Safety glasses with side shields or goggles recommended if eye contact is anticipated.

Other: None known.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.): White or tan sand: granular, crushed or ground to a powder.

Odor: None.

Odor threshold: Not determined	pH: 6-8
Melting point/freezing point: 3110°F/1710°C	Boiling point/range: 4046°F/2230°C
Flash point: Not applicable	Evaporation rate: Not applicable
Flammable limits: LEL: Not applicable	UEL: Not applicable
Vapor pressure: Not applicable	Vapor density: Not applicable
Relative density: 2.65	Solubility(ies): Insoluble in water

Partition coefficient: n-octanol/water: Not applicable	Auto-ignition temperature: Not determined
Decomposition temperature: Not determined	Viscosity: Not applicable
Flammability (solid, gas): Not applicable	

10. STABILITY AND REACTIVITY

Reactivity: Not reactive under normal conditions of use.

Chemical stability: Stable

Possibility of hazardous reactions: Contact with powerful oxidizing agents, such as fluorine, chlorine trifluoride and oxygen difluoride, may cause fires.

Conditions to avoid: Avoid generation of dust in handling and use.

Incompatible materials: Powerful oxidizers such as fluorine, chlorine trifluoride, and oxygen difluoride and hydrofluoric acid.

Hazardous decomposition products: Silica will dissolve in hydrofluoric acid and produce a corrosive gas, silicon tetrafluoride.

11. TOXICOLOGICAL INFORMATION

Acute effects of exposure:

Inhalation: Inhalation of dust may cause respiratory tract irritation. Symptoms of exposure may include cough, sore throat, nasal congestion, sneezing, wheezing and shortness of breath.

Ingestion: Ingestion in an unlikely route of exposure. If dust is swallowed, it may irritate the mouth and throat.

Skin contact: No adverse effects are expected.

Eye contact: Particulates may cause abrasive injury.

Chronic effects: Prolonged inhalation of respirable crystalline silica may cause lung disease, silicosis, lung cancer and other effects as indicated below.

The method of exposure that can lead to the adverse health effects described below is inhalation.

A. SILICOSIS

Silicosis can exist in several forms, chronic (or ordinary), accelerated, or acute:

Chronic or Ordinary Silicosis is the most common form of silicosis, and can occur after many years (10 to 20 or more) of prolonged repeated inhalation of relatively low levels of airborne respirable crystalline silica dust. It is further defined as either simple or complicated silicosis. Simple silicosis is characterized by lung lesions (shown as radiographic opacities) less than 1 centimeter in diameter, primarily in the upper lung zones. Often, simple silicosis is not associated with symptoms, detectable changes in lung function or disability. Simple silicosis may be progressive and may develop into complicated silicosis or progressive massive fibrosis (PMF). Complicated silicosis or PMF is characterized by lung lesions (shown as radiographic opacities) greater than 1 centimeter in diameter. Complicated silicosis or PMF symptoms, if present, are shortness of breath and cough. Complicated silicosis or PMF may be associated with decreased lung function and may be disabling. Advanced complicated silicosis or PMF may lead to death. Advanced complicated silicosis or PMF can result in heart disease secondary to the lung disease (cor pulmonale).

Accelerated Silicosis can occur with prolonged repeated inhalation of high concentrations of respirable crystalline silica over a relatively short period; the lung lesions can appear within five (5) years of initial exposure. Progression can be rapid. Accelerated silicosis is similar to chronic or ordinary silicosis, except

that lung lesions appear earlier and progression is more rapid.

Acute Silicosis can occur after the repeated inhalation of very high concentrations of respirable crystalline silica over a short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough, weakness and weight loss. Acute silicosis is fatal.

B. CANCER

IARC - The International Agency for Research on Cancer ("IARC") concluded that "crystalline silica in the form of quartz or cristobalite dust is *carcinogenic to humans (Group 1)*". For further information on the IARC evaluation, see IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 100C, "A Review of Human Carcinogens: Arsenic, Metals, Fibres and Dusts " (2011).

NTP classifies "Silica, Crystalline (respirable size)" as Known to be a human carcinogen.

C. AUTOIMMUNE DISEASES

Several studies have reported excess cases of several autoimmune disorders -- scleroderma, systemic lupus erythematosus, rheumatoid arthritis -- among silica-exposed workers.

D. TUBERCULOSIS

Individuals with silicosis are at increased risk to develop pulmonary tuberculosis, if exposed to tuberculosis bacteria. Individuals with chronic silicosis have a three-fold higher risk of contracting tuberculosis than similar individuals without silicosis.

E. KIDNEY DISEASE

Several studies have reported excess cases of kidney diseases, including end stage renal disease, among silica-exposed workers. For additional information on the subject, the following may be consulted: "Kidney Disease and Silicosis", *Nephron*, Volume 85, pp. 14-19 (2000).

F. NON-MALIGNANT RESPIRATORY DISEASES

The reader is referred to Section 3.5 of the NIOSH Special Hazard Review cited below for information concerning the association between exposure to crystalline silica and chronic bronchitis, emphysema and small airways disease. There are studies that disclose an association between dusts found in various mining occupations and non-malignant respiratory diseases, particularly among smokers. It is unclear whether the observed associations exist only with underlying silicosis, only among smokers, or result from exposure to mineral dusts generally (independent of the presence or absence of crystalline silica, or the level of crystalline silica in the dust).

Sources of information:

The *NIOSH Hazard Review - Occupational Effects of Occupational Exposure to Respirable Crystalline Silica* published in April 2002 summarizes and discusses the medical and epidemiological literature on the health risks and diseases associated with occupational exposures to respirable crystalline silica. The *NIOSH Hazard Review* is available from NIOSH - Publications Dissemination, 4676 Columbia Parkway, Cincinnati, OH 45226, or through the NIOSH web site, www.cdc.gov/niosh/topics/silica, then click on the link "NIOSH Hazard Review: Health Effects of Occupational Exposure to Respirable Crystalline Silica".

For a more recent review of the health effects of respirable crystalline silica, the reader may consult *Fishman's Pulmonary Diseases and Disorders*, Fourth Edition, Chapter 57. "Coal Workers' Lung Diseases and Silicosis".

Finally, the US Occupational Safety and Health Administration (OSHA) published a summary of respirable crystalline silica health effects in connection with OSHA's Proposed Rule regarding occupational exposure to

respirable crystalline silica. The summary was published in the September 12, 2013 Federal Register, which can be found at www.federalregister.gov/articles/2013/09/12/2013-20997/occupational-exposure-to-respirable-crystalline-silica.

Numerical measures of toxicity:

Crystalline Silica (quartz): LD50 oral rat >22,500 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity: Crystalline silica (quartz) is not known to be ecotoxic.

Persistence and degradability: Silica is not degradable.

Bioaccumulative potential: Silica is not bioaccumulative.

Mobility in soil: Silica is not mobile in soil.

Other adverse effects: No data available

13. DISPOSAL CONSIDERATIONS

Discard any product, residue, disposable container or liner in full compliance with national regulations.

14. TRANSPORT INFORMATION

UN number: None

UN proper shipping name: Not regulated

Transport hazard classes(es): None

Packing group, if applicable: None

Environmental hazards: None

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not determined

Special precautions: None known.

15. REGULATORY INFORMATION

UNITED STATES (FEDERAL AND STATE)

TSCA Status: Crystalline silica (quartz) appears on the EPA TSCA inventory under the CAS No. 14808-60-7.

RCRA: This product is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.

CERCLA: Crystalline silica (quartz) is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 40 CFR §302.

Emergency Planning and Community Right to Know Act (SARA Title III): This product contains the following chemicals subject to SARA 302 or SARA 313 reporting: None above the de minimus concentrations.

Clean Air Act: Crystalline silica (quartz) mined and processed by U.S. Silica Company is not processed with or does not contain any Class I or Class II ozone depleting substances.

FDA: Silica is included in the list of substances that may be included in coatings used in food contact surfaces, 21 CFR §175.300(b)(3)(xxvi).

California Proposition 65: Crystalline silica (airborne particles of respirable size) is classified as a substance known to the State of California to be a carcinogen.

California Inhalation Reference Exposure Level (REL): California established a chronic non-cancer effect REL of 3 µg for silica (crystalline, respirable). A chronic REL is an airborne level of a substance at or below which no non-cancer health effects are anticipated in individuals indefinitely exposed to the substance at that level.

Massachusetts Toxic Use Reduction Act: Silica, crystalline (respirable size, <10 microns) is “toxic” for purposes of the Massachusetts Toxic Use Reduction Act.

Pennsylvania Worker and Community Right to Know Act: Quartz is a hazardous substance under the Act, but it is not a special hazardous substance or an environmental hazardous substance.

Texas Commission on Environmental Quality: The Texas CEQ has established chronic and acute Reference Values and short term and long term Effects Screening Levels for crystalline silica (quartz). The information can be accessed through www.tceq.texas.gov.

CANADA

Domestic Substances List: U. S. Silica Company products, as naturally occurring substances, are on the Canadian DSL.

WHMIS Classification: D2A

OTHER NATIONAL INVENTORIES

Australian Inventory of Chemical Substances (AICS): All of the components of this product are listed on the AICS inventory or exempt from notification requirements.

China: Silica is listed on the IECSC inventory or exempt from notification requirements.

Japan Ministry of International Trade and Industry (MITI): All of the components of this product are existing chemical substances as defined in the Chemical Substance Control Law Registry Number 1-548.

Korea Existing Chemicals Inventory (KECI) (set up under the Toxic Chemical Control Law): Listed on the ECL with registry number 9212-5667.

New Zealand: Silica is listed on the HSNO inventory or exempt from notification requirements.

Philippines Inventory of Chemicals and Chemical Substances (PICCS): Listed for PICCS.

Taiwan: Silica is listed on the CSNN inventory or exempt from notification requirements.

16. OTHER INFORMATION

Date of preparation/revision: February 10, 2015

Hazardous Material Information System (HMIS):

Health *

Flammability 0

Physical Hazard 0

Protective Equipment E

* For further information on health effects, see Sections 2, 8 and 11 of this MSDS.

National Fire Protection Association (NFPA):

Health 0

Flammability 0

Instability 0

Web Sites with Information about Effects of Crystalline Silica Exposure:

The U. S. Silica Company web site will provide updated links to OSHA and NIOSH web sites addressing crystalline silica issues: www.ussilica.com, click on "Info Center", then click on "Health & Safety".

The U.S. National Institute for Occupational Safety and Health (NIOSH) and Occupational Safety and Health Administration (OSHA) maintain sites with information about crystalline silica and its potential health effects. For NIOSH, <http://www.cdc.gov/niosh/topics/silica>; for OSHA, <http://www.osha.gov/dsg/topics/silicacrystalline/index>.

The IARC Monograph that includes crystalline silica, Volume 100C, can be accessed in PDF form at the IARC web site, <http://monographs.iarc.fr/ENG/Monographs/PDFs/index.php>.

U. S. Silica Company Disclaimer

The information and recommendations contained herein are based upon data believed to be up to-date and correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects that may be caused by purchase, resale, use or exposure to our silica. Customers and users of silica must comply with all applicable health and safety laws, regulations, and orders. In particular, they are under an obligation to carry out a risk assessment for the particular work places and to take adequate risk management measures in accordance with the national implementation legislation of EU Directives 89/391 and 98/24.

Section 1: IDENTIFICATION**Product Name:** Simple Green® Clean Building All-Purpose Cleaner Concentrate**Additional Names:****Manufacturer's Part Number:** **Please refer to Section 16***Recommended Use:** Dilute 1:64 (1ounce of concentrate for every ½ gallon of water) for use on hard non-porous rinsable surfaces**Restrictions on Use:** Do not use on non-rinsable surfaces.**Company:** Sunshine Makers, Inc.
15922 Pacific Coast Highway
Huntington Beach, CA 92649 USA**Telephone:** 800-228-0709 • 562-795-6000 *Mon – Fri, 8am – 5pm PST***Fax:** 562-592-3830**Email:** info@simplegreen.com**Emergency Phone:** Chem-Tel 24-Hour Emergency Service: 800-255-3924**Section 2: HAZARDS IDENTIFICATION**

This product is classified as hazardous (Eye Corrosive/Irritant - Category 2B) under 2012 OSHA Hazard Communication Standards (29 CFR 1910.1200).

OSHA HCS 2012Label Elements**Signal Word:** Warning**Hazard Symbol(s)/Pictogram(s):** None required**Hazard Statements:**

H320 – Causes Eye Irritation

Precautionary Statements:

P264- Wash hands thoroughly after handling

P305+P351+P338- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313- If eye irritation persists: Get medical attention.

Hazards Not Otherwise Classified (HNOC): None**Other Information:** None Known**Section 3: COMPOSITION/INFORMATION ON INGREDIENTS**

<u>Ingredient</u>	<u>CAS Number</u>	<u>Percent Range</u>
Water	7732-18-5	> 84.8%*
Ethoxylated Alcohol	68439-46-3	< 10%*
Sodium Carbonate	497-19-8	< 5%*
Sodium Gluconate	527-07-1	< 5%*
Tetrasodium Iminodisuccinate	144538-83-0	≤ 1%*
Colorant	Proprietary	< 1%*

specific percentages of composition are being withheld as a trade secret*Section 4: FIRST-AID MEASURES****Inhalation:** Not expected to cause respiratory irritation. If adverse effect occurs, move to fresh air.**Skin Contact:** Not expected to cause skin irritation. If adverse effect occurs, rinse skin with water.**Eye Contact:** Causes eye irritation. If in eyes rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: get medical attention.**Ingestion:** May cause upset stomach. Drink plenty of water to dilute. See section 11.**Most Important Symptoms/Effects, Acute and Delayed:** None known.**Indication of Immediate Medical Attention and Special Treatment Needed, if necessary:** Treat symptomatically

Section 5: FIRE-FIGHTING MEASURES

Suitable & Unsuitable Extinguishing Media: Use Dry chemical, CO₂, water spray or “alcohol” foam. Avoid high volume jet water.
Specific Hazards Arising from Chemical: In event of fire, fire created carbon oxides may be formed.
Special Protective Actions for Fire-Fighters: Wear positive pressure self-contained breathing apparatus; Wear full protective clothing.

This product is non-flammable. See Section 9 for Physical Properties.

Section 6: ACCIDENTAL RELEASE MEASURES**Personal Precautions, Protective Equipment and Emergency Procedures:**

For non-emergency personnel: See section 8 – personal protection.

For emergency responders: Avoid eye contact. Safety goggles suggested if splashing or misting is likely to occur.

Environmental Precautions: Do not allow into open waterways and ground water systems.

Methods and Materials for Containment and Clean Up: Dike or soak up with inert absorbent material. See section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Precautions for Safe Handling: Ensure adequate ventilation. Keep out of reach of children. Keep away from heat, sparks, open flame and direct sunlight. Do not pierce any part of the container. Do not mix or contaminate with any other chemical. Do not eat, drink or smoke while using this product.

Conditions for Safe Storage including Incompatibilities: Keep container tightly closed. Keep in cool dry area. Avoid prolonged exposure to sunlight. Do not store at temperatures above 95°F (35°C) or freezing temperatures.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limit Values: No components listed with TWA or STEL values under OSHA or ACGIH.

Appropriate Engineering Controls: Showers, eyewash stations, ventilation systems

Individual Protection Measures / Personal Protective Equipment (PPE)

Eye Contact: No PPE required.

Respiratory: No PPE required.

Skin Contact: No PPE required.

General Hygiene Considerations: Wash thoroughly after handling and before eating or drinking.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Green Liquid	Partition Coefficient: n-octanol/water:	Not determined
Odor:	No added fragrance	Autoignition Temperature:	Non-flammable
Odor Threshold:	Not determined	Decomposition Temperature:	95°F
pH:	9.5 – 11.5	Viscosity:	Like water
Freezing Point:	0°C (32°F)	Specific Gravity:	1.01 – 1.02
Boiling Point & Range:	101°C (213.8°F)	VOCs:	**Water & fragrance exemption in calculation
Flash Point:	> 212°F	SCAQMD 304-91 / EPA 24:	Not tested
Evaporation Rate:	Not determined	CARB Method 310**:	0.0 g/L 0.0 lb/gal 0.0%
Flammability (solid, gas):	Not applicable	SCAQMD Method 313:	Not tested
Upper/Lower Flammability or Explosive Limits:	Not applicable	VOC Composite Partial Pressure:	Not determined
Vapor Pressure:	Not determined	Relative Density:	8.42 – 8.50
Vapor Density:	Not determined	Solubility:	100% in water

Section 10: STABILITY AND REACTIVITY

Reactivity:	Non-reactive.
Chemical Stability:	Stable under normal conditions 70°F (21°C) and 14.7 psig (760 mmHg).
Possibility of Hazardous Reactions:	None known.
Conditions to Avoid:	Excessive heat or cold.
Incompatible Materials:	Do not mix with oxidizers, acids, bathroom cleaners, or disinfecting agents.
Hazardous Decomposition Products:	Normal products of combustion - CO, CO ₂ .

Section 11: TOXICOLOGICAL INFORMATION

Likely Routes of Exposure:	Inhalation -	Overexposure may cause headache.
	Skin Contact -	Not expected to cause irritation, repeated contact may cause dry skin.
	Eye Contact -	Causes eye irritation.
	Ingestion -	May cause upset stomach.

Symptoms related to the physical, chemical and toxicological characteristics: no symptoms expected under typical use conditions.

Delayed and immediate effects and or chronic effects from short term exposure: no symptoms expected under typical use conditions.

Delayed and immediate effects and or chronic effects from long term exposure: headache, dry skin, or skin irritation may occur.

Interactive effects: Not known.

Numerical Measures of Toxicity

Acute Toxicity:	Oral LD ₅₀ (rat)	> 5 g/kg body weight
	Dermal LD ₅₀ (rabbit)	> 5 g/kg body weight

Calculated via OSHA HCS 2012 / Globally Harmonized System of Classification and Labelling of Chemicals

Skin Corrosion/Irritation:	Non-irritant per Dermal Irritation® assay modeling. No animal testing performed.
Eye Damage/Irritation:	Irritant per Ocular Irritation® assay modeling. No animal testing performed.
Germ Cell Mutagenicity:	Mixture does not classify under this category.
Carcinogenicity:	Mixture does not classify under this category.
Reproductive Toxicity:	Mixture does not classify under this category.
STOT-Single Exposure:	Mixture does not classify under this category.
STOT-Repeated Exposure:	Mixture does not classify under this category.
Aspiration Hazard:	Mixture does not classify under this category.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity:	Volume of ingredients used does not trigger toxicity classifications under the Globally Harmonized System of Classification and Labelling of Chemicals.
Aquatic:	Soda Ash: LC50 for fish, Daphnia and algae is found to be greater than 200 ppm. Sodium Gluconate: LC50 for fish, Daphnia and algae is found to be greater than 1,000 ppm. Ethoxylated Alcohol: LC50 for fish is found to be greater than 10 ppm.
Terrestrial:	Not tested on finished formulation.

Persistence and Degradability:	Readily Biodegradable based on biodegradation profile of ingredients Soda Ash: Inorganic. (degrades abiotically) Sodium Gluconate: Readily biodegradable, 98% after 2 days. Ethoxylated Alcohol: Readily biodegradable, 73.8% in 28 days (per OECD 301D).
Bioaccumulative Potential:	No data available.
Mobility in Soil:	No data available.
Other Adverse Effects:	No data available.

Section 13: DISPOSAL CONSIDERATIONS

Unused or Used Liquid: May be considered hazardous in your area depending on usage and tonnage of disposal – check with local, regional, and or national regulations for appropriate methods of disposal.

Empty Containers: May be offered for recycling.

Never dispose of used degreasing rinsates into lakes, streams, and open bodies of water or storm drains.

Section 14: TRANSPORT INFORMATION

U.N. Number: Not applicable
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Marine Pollutant - NO
U.N. Proper Shipping Name: Cleaning Compound, Liquid NOI
NMFC Number: 48580-3
Class: 55
Transport in Bulk (according to Annex II of MARPOL 73/78 and IBC Code): Unknown.
Special precautions which user needs to be aware of/comply with, in connection with transport or conveyance either within or outside their premises: None known.

U.S. (DOT) / Canadian TDG: Not Regulated for shipping.
IMO / IDMG: Not classified as Hazardous
ICAO/ IATA: Not classified as Hazardous
ADR/RID: Not classified as Hazardous

Section 15: REGULATORY INFORMATION

All components are listed on: TSCA and DSL Inventory.

SARA Title III: Sections 311/312 Hazard Categories – Not applicable.
 Sections 313 Superfunds Amendments and Reauthorizations Act of 1986 – Not applicable.
 Sections 302 – Not applicable.

Clean Air Act (CAA): Not applicable

Clean Water Act (CWA): Not applicable

State Right To Know Lists: No ingredients listed

California Proposition 65: No ingredients listed

Texas ESL:

Ethoxylated Alcohol	68439-46-3	60 µg/m ³ long term	600 µg/m ³ short term
Sodium Gluconate	527-07-1	200 µg/m ³ long term	2000 µg/m ³ short term
Sodium Carbonate	497-19-8	5 µg/m ³ long term	50 µg/m ³ short term

Section 16: OTHER INFORMATION

<u>Size</u>	<u>Item Number</u>	<u>UPC</u>
1 Gallon	1200000111001	043318110016
1 Gallon, 2 per case	11001 & 1210000211001	043318110016

USA items listed only. Not all items listed. USA items may not be valid for international sale.

NFPA:

Health – Eye Irritant

Flammability – Non-flammable

Stability – Stable

Special - None

**Acronyms**

NTP	National Toxicology Program	IARC	International Agency for Research on Cancer
OSHA	Occupational Safety and Health Administration	CPSC	Consumer Product Safety Commission
TSCA	Toxic Substances Control Act	DSL	Domestic Substances List

Prepared / Revised By: Sunshine Makers, Inc., Regulatory Department.

This SDS has been revised in the following sections: Revised SDS layout

DISCLAIMER: The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SUNISO[®] 3GS Refrigeration Oil

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Revision Date: 10/20/2015 Version: 7 Issue Date: 10/20/2015

Sonneborn, LLC urges the recipient of this Safety Data Sheet to study it carefully to become aware of hazards, if any, of the product involved. In the interest of safety you should (1) notify your employees, agents and contractors of the information of this sheet, (2) furnish a copy to each of your customers for the product and (3) request your customers to inform their employees and customers as well.

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Identification of the substance or preparation

Lubricating Oil

Use of substance/preparation:

This material is a severely refined naphthenic refrigeration system lubricant.

Company identification

Sonneborn, LLC
600 Parsippany Road, Suite 100
Parsippany, NJ 07054 USA

Emergency telephone number

Chemtrec (24hrs): 800-424-9300
Sonneborn: 724-756-2210

2. HAZARDS IDENTIFICATION

GHS Classification :Not classified as dangerous under OSHA/GHS-criteria

Human Health Hazards :None

Physico-chemical and environmental hazards and effects: None

HMIS RATING USA

Health: 1	Flammability: 1	Reactivity: 0	PPI: -
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3. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	% BY WEIGHT	CAS #	HAZARD	DANGER SYMBOL(S)
Distillates (Petroleum) hydrotreated heavy naphthenic	100	64742-52-5		

EC No. 265-155-0

REACH Registration No. 01-2119467170-45-0033

This is not a dangerous substance, if swallowed, do not induce vomiting.

SUNISO® 3GS Refrigeration Oil

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4. FIRST AID MEASURES

Swallowing

Do not induce vomiting. Obtain medical attention immediately. This is not a toxic substance.

Inhalation

Obtain medical attention. Oxygen may be given by qualified personnel if breathing is difficult or cyanosis (blue discoloration of skin) is noted. Give artificial respiration if not breathing. Remove to fresh air if aerosol spray is inhaled. Aspiration may cause pulmonary edema or aspiration pneumonia. Exposed persons should be kept under medical observation for at least 48 hours because delayed effects may occur.

Skin

No emergency care anticipated. Wash skin with soap and water.

Eye contact

Flush eyes thoroughly with water for several minutes. Obtain medical attention if discomfort persists.

5. FIRE-FIGHTING MEASURES

Flash Point: > 93.4°C (200°F) PMCC, ASTM D93

NFPA CLASSIFICATION USA

Health: 1	Flammability: 1	Reactivity: 0	Special provisions: -
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Extinguishing media

Suitable: Treat as an oil fire.

- dry chemical
- carbon dioxide (in case of small fires)
- water fog
- foam
- sand or earth

Unsuitable: Do not use water jet. Oil will float on water and can spread any fire.

Special firefighting procedures

Do not direct a solid stream of water or foam into burning material; this may cause spattering and spread the fire. If a rail or tank truck is involved in a fire, ISOLATE for 800 meters (0.5 mile) in all directions. Shut off fuel to fire if it is possible to do so without hazard. If this is impossible, withdraw from the area and let the fire burn out under controlled conditions. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tank due to fire.

Special protective equipment for firefighters

Self-contained breathing apparatus.

Unusual fire and explosion hazards

This product will float upon water, so water spray is not a suitable extinguishing agent as it may cause any fire to spread.

SUNISO® 3GS Refrigeration Oil

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6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear suitable protective equipment. Eliminate sources of ignition.

Environmental precautions

Avoid runoff to sewers or waterways. Dike area of spill to prevent spreading and pump liquid to salvage tank. Waste: avoid washing into watercourses. Use methods consistent with local regulations or incinerate.

Methods for cleaning up

Dike to contain spill. Absorb on inert material such as sand, earth, vermiculite. Stop the leak if it can be done without risk. Floor may be slippery; use care to avoid falling.

7. HANDLING AND STORAGE

HANDLING

Do not handle at temperatures >+40°C, unless wearing appropriate protective equipment.

Ventilation

General (mechanical) room ventilation is expected to be satisfactory for use at room temperature.

STORAGE

Storage requirements

Keep away from heat, sparks and flame. Do not store at temperatures: >+40°C without proper safety review of storage equipment. Store protected from light.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

COMPONENT	COUNTRY	TYPE/REMARK	VALUE
Mineral Oil Mist		If used in a way that generates A "mist" observe the limits for Mineral Oil Mist. TWA (mist), ACGIH STEL (mist), ACGIH	5mg/m3 10mg/m3

OCCUPATIONAL EXPOSURE CONTROLS

Respiratory protection

None expected to be needed. If used in a way that generates a vapor/mist, wear an organic vapor respirator.

Hand protection/protective gloves

Wear oil resistant gloves.

Eye protection

Face shield or chemical splash goggles in case of splashing.

Skin protection

Wear protective clothing, such as long sleeves to minimize skin contact.

SUNISO® 3GS Refrigeration Oil

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Environmental Exposure Controls:

Store in a second containment to catch leakages

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical State:	Liquid
Color:	Amber
Odor:	Mild Petroleum
Odor Threshold:	N/A

Important health, safety and environmental information

Flammability	No Data
Evaporation Rate	No Data
Decomposition Temperature	No Data
Flash Point:	>93.4°C (200°F) Method: PMCC, ASTM D93
Upper explosion limits:	Not determined
Lower explosion limits:	Not determined
Vapor Pressure:	<0.1 kPa at 20°C
Density:	0.81 – 0.89 g/cm ³ at 20°C
Bulk Density:	Not available
Solubility in Water:	Insoluble
Solubility in organic solvents:	Soluble
Kinematic viscosity:	> 20.5 mm ² /s at 40°C , > 100 SUS @ 100°F
Boiling Point:	> 230°C
PH:	N/A
Specific gravity (H ₂ O=1)	<1
Partitioning coefficient	log POW: >6 This product is soluble in oil.
Vapor Density:	N/A
Percent volatiles	Nil
Autoignition Temperature:	No Data
Melting Point:	N/A

10. STABILITY AND REACTIVITY

Stability: Stable

Conditions/Materials to avoid: Extreme temperature and direct sunlight/ultraviolet light and strong oxidizing agents.

Hazardous combustion products

Burning can produce the following combustion products: Oxides of carbon and Soot

Hazardous polymerization: Will not occur.

SUNISO® 3GS Refrigeration Oil

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11. TOXICOLOGICAL INFORMATION

GENERAL

No evidence of harmful effects from available information.

12. ECOLOGICAL INFORMATION

This product is stable in water, and can be mechanically separated from water. The water may be suitable for disposal in a biological waste water treatment plant.

13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with appropriate Federal, State and local regulations or incinerate.

14. TRANSPORT INFORMATION

ADR/RID/IMDG/ICAO

This product is not regulated by ADR / RID / IMDG / ICAO.

USA – This product is not regulated by DOT, Freight Description Road: 65 Petroleum Oil, N.O.I.B.N.

TDG-CANADA

This product is not regulated by TDG.

15. REGULATORY INFORMATION

GHS classification

According to EC/GHS regulations this product is not classified or labeled

Contains: Mineral Oil

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40CFR372 (for SARA 313). This information must be included in SDS's that are copied and distributed for this material.

Components present in this product at a level which could require reporting under the statute are:

****NONE****

New Jersey Worker and Community Right-To-Know Act (Labeling Requirements)

Chemical name	CAS#	New Jersey TS Number
Distillates (Petroleum) hydrotreated heavy naphthenic	64742-52-5	

EPA Hazard Categories (SARA 311, 312): None

WHMIS Classification: This product is not a WHMIS controlled product.

SUNISO® 3GS Refrigeration Oil

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Chemical Inventory

<u>Canada:</u>	The ingredients of this product are on the DSL.
<u>Europe:</u>	The ingredients of this product are on the EINECS inventory.
<u>United States:</u>	The ingredients of this product are on the TSCA inventory.
<u>Australia:</u>	The ingredients of this product are on the AICS inventory.
<u>China:</u>	This product is on the IECSC inventory.
<u>Japan:</u>	The ingredients of this product are on the ENCS inventory.
<u>Korea:</u>	This product is listed on the Existing Chemicals List (ECL).
<u>Philippines:</u>	This product is on the PICCS.

16. OTHER INFORMATION

Recommended uses and restrictions

Please consult the product and/or application information bulletins for this product.

Further information, Europe

Where appropriate, use CE approved personal protection equipment.

This Safety Data Sheet conforms to EC Directive 1907/2006 and amendments.

The opinions expressed herein are those of qualified experts within Sonneborn, LLC. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and of these opinions and the conditions of use of this product are not within the control of Sonneborn, LLC it is the user's obligation to determine the conditions of safe use of the products.



Speedline® Corporation

SAFETY DATA SHEET

DATE ISSUED : 06/12/2015

DATE REVISED : 06/16/2015

SPEEDLINE WELDING ADHESIVE

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Speedline Welding Adhesive**DISTRIBUTOR:**

Speedline Corporation
6810 Cochran Road
440-914-1122

EMERGENCY PHONE: Chemtel 800-255-3924

RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE: Product is an adhesive solvent mixture used to bond PVC plastic. Not intended for any other use or application.

2. HAZARDS IDENTIFICATION

CLASSIFICATION OF THE CHEMICAL

HAZARD CLASS**FLAMMABLE LIQUIDS:** Category 1.**ACUTE TOXICITY:** 4 (oral).**SKIN CORROSION:** 2.**SERIOUS EYE DAMAGE:** 1.**SKIN SENSITIZATION:** No.**RESPIRATORY SENSITIZATION:** No.**SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE:** 3.**LABEL ELEMENTS HAZARD****PICTOGRAMS:****SIGNAL WORD:** Danger.

HAZARD STATEMENT: Highly flammable liquid and vapor. Causes serious eye irritation. Harmful if swallowed. Harmful if inhaled. May be fatal if swallowed and enters airways. May cause drowsiness or dizziness. May cause respiratory irritation. Read entire label carefully before use.

PREVENTION: Keep only in original container. Do not eat, drink, or smoke when using this product. Wash hands thoroughly after handling. Do not breathe dusts or mists. Wear protective gloves/protective clothing/eye protection/face protection. Use only with good ventilation.

RESPONSE: Eliminate all ignition sources. Avoid breathing vapors. Prevent liquid from entering sewers. Absorb spillage to prevent material damage. If swallowed: Do NOT induce vomiting due to risk of aspiration into lungs. Immediately call a poison center/doctor. If on skin (or hair) wash with soap and water. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if symptoms persist. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Call a poison center/doctor if symptoms persist.

STORAGE: Store in original packaging. Keep containers tightly closed. Store in a well ventilated place.

DISPOSAL: Dispose of contents and container in accordance with all local, regional, national, and international regulations. We recommend evaporation of the contents in an outdoor location and recycling of the steel container.



Speedline® Corporation

SAFETY DATA SHEET

DATE ISSUED : 06/12/2015

DATE REVISED : 06/16/2015

SPEEDLINE WELDING ADHESIVE

3. COMPOSITION/INFORMATION ON INGREDIENTS

MIXTURES

Tetrahydrofuran CAS # 109-99-9 (40-60%)

OSHA PEL 200 PPM

ACGIH TLV 200 PPM

Methyl Ethyl Ketone CAS # 78-93-3 (40-60%)

OSHA PEL 200 PPM

ACGIH TLV 200 PPM

Other recommended limits STEL 300 PPM

The exact percentage of composition has been withheld as a trade secret in accordance with paragraph(i) of 1910.1200.

4. FIRST AID MEASURES

EMERGENCY AND FIRST AID PROCEDURES:

EYE: For contact with eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Call a poison center/ doctor if symptoms persist.

SKIN: For contact with skin (or hair) wash with soap and water.

INHALATION: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if symptoms persist.

INGESTION: If swallowed, do NOT induce vomiting due to risk of aspiration into lungs. Immediately call a poison center/doctor.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:

EYE: Eye irritant. Symptoms may include discomfort or pain, excessive blinking and tear production, with marked redness and swelling of the conjunctiva.

SKIN: Harmful in contact with skin. May cause redness, drying, defatting, and cracking of the skin.

INHALATION: May cause drowsiness and dizziness. May cause respiratory irritation. May cause nausea or vomiting.

INGESTION: Will cause liver and kidney damage. May cause stomach distress, nausea or vomiting.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENTS NEEDED:

NOTE TO PHYSICIANS: Symptoms may not appear immediately.

SPECIFIC TREATMENTS: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA: Dry chemical or carbon dioxide (CO₂). For large fire use alcohol foam. Water spray may be used to cool containers, but may be ineffective in controlling fire.

SPECIAL HAZARDS ARISING FROM THE CHEMICAL

PRODUCTS OF COMBUSTION: May generate toxic or irritating combustion products.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Fire hazard because of low flash point, high volatility, and heavy vapor.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS: Keep upwind of fire. Wear full firefighting turn-out gear (full bunker gear) and respiratory protection (SCBA).



Speedline® Corporation

SAFETY DATA SHEET

DATE ISSUED : 06/12/2015

DATE REVISED : 06/16/2015

SPEEDLINE WELDING ADHESIVE

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES: Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANUP

METHODS FOR CONTAINMENT: Use polyethylene bag or containment drum or pail to contain spill. Provide ventilation. Dike area to prevent spreading. Use appropriate Personal Protective Equipment (PPE).

METHODS FOR CLEANING UP: Absorb spillage in non-combustible absorbent such as sand or vermiculite, and place in a suitable container for disposal. Allow spilled material to evaporate, providing adequate ventilation and eliminating all ignition sources.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES: Store in original packaging. Keep containers tightly closed. Store in a well ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CONTROL PARAMETERS

Tetrahydrofuran CAS # 109-99-9

OSHA PEL 200 PPM

ACGIH TLV 200 PPM

Methyl Ethyl Ketone CAS # 78-93-3

OSHA PEL 200 PPM

ACGIH TLV 200 PPM

Other recommended limits STEL 300 PPM

EXPOSURE CONTROLS: Use ventilation adequate to keep exposure below recommended exposure limits.

INDIVIDUAL PROTECTIVE MEASURES

RESPIRATORY PROTECTION (SPECIFY TYPE): None required with normal ventilation. If using where ventilation cannot be supplied, a half-mask respirator with an organic-vapors cartridge is recommended.

PROTECTIVE GLOVES: Rubber or PVA.

EYE PROTECTION: Chemical safety goggles to prevent splashing in eyes.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Rubber, polyethylene, or Tyvek apron.

WORK/HYGIENE PRACTICES: Use good industrial hygiene practice.



Speedline® Corporation

SAFETY DATA SHEET

DATE ISSUED : 06/12/2015

DATE REVISED : 06/16/2015

SPEEDLINE WELDING ADHESIVE

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: White or clear liquid. Characteristic ether-like solvent odor.

COLOR: White or clear.

ODOR: Pungent ether-like solvent odor.

ODOR THRESHOLD: 25 PPM.

PHYSICAL STATE: Liquid.

pH: 7.

MELTING POINT/FREEZING POINT: Freeze point is below -40°C.

BOILING POINT: 65.5 - 66.5°C.

FLASH POINT (METHOD USED): -22°C tag closed cup.

EVAPORATION RATE (BUTYL ACETATE=1): 5.5 to 8.

FLAMMABLE LIMITS AT 25 C: LEL 1.8% UEL 11.8%.

VAPOR PRESSURE (MM HG): 190.

VAPOR DENSITY (AIR =1): 2.5.

RELATIVE DENSITY/SPECIFIC GRAVITY (H₂O=1): Approximately 0.9.

SOLUBILITY: Miscible.

PARTITION COEFFICIENT: n-octanol/water: .45.

AUTO-IGNITION TEMPERATURE: The product is not self-igniting.

DECOMPOSITION TEMPERATURE: 110°C to 400°C.

VISCOSITY: Varies from 100 to 1600 cps depending on formula.

PERCENT VOLATILE, WT. %: Approximately 85%.

VOC CONTENT GRAMS/LITER: 510.

10. STABILITY AND REACTIVITY

REACTIVITY: Reacts with oxidizing agents.

CHEMICAL STABILITY: The product is chemically stable.

POSSIBILITY OF HAZARDOUS REACTIONS: No dangerous reaction known under conditions of normal use.

CONDITIONS TO AVOID: Avoid all sources of ignition: heat sparks, open flame. Avoid electrostatic discharge.

INCOMPATIBLE MATERIALS: Aluminum lithium hydride, alkaline-earth metal hydroxides, any oxidizer.

HAZARDOUS DECOMPOSITION PRODUCTS: No hazardous decomposition products if stored and handled as prescribed/indicated.



Speedline® Corporation

SAFETY DATA SHEET

DATE ISSUED : 06/12/2015

DATE REVISED : 06/16/2015

SPEEDLINE WELDING ADHESIVE

11. TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

LIKELY ROUTES OF EXPOSURE: Skin contact, skin absorption, eye contact, inhalation, and ingestion.

ACUTE TOXICITY: **Oral:** LD 50. **Rat** 1650 mg/kg.

INHALATION: LC 50 Rat >14.7 mg/l.

DERMAL: LD 50 Rat >2000 mg/kg.

IRRITATION/CORROSION: Rabbit Draize Test - Non-irritant.

SKIN: Rabbit Draize Test - Non-irritant.

EYE: Rabbit Draize Test - Risk of serious damage to eyes.

SENSITIZATION: Mouse Local Lymph Node Assay (LLNA) - Non-sensitizing OECD Guideline 429.

ASPIRATION HAZARD: Possible severe lung damage and death if aspirated into lungs.

DELAYED, IMMEDIATE, AND CHRONIC EFFECTS OF SHORT- AND LONG-TERM EXPOSURE

SKIN CORROSION/IRRITATION: Causes skin irritation.

RESPIRATORY SENSITIZATION: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

SKIN SENSITIZATION: Non-sensitizing.

STOT-SINGLE EXPOSURE: May cause respiratory irritation. May cause drowsiness, dizziness, or nausea.

CHRONIC HEALTH EFFECTS: Based on available data, the classification criteria are not met.

CARCINOGENICITY: Although rodent testing has shown a tumorigenic effect, these results are thought to be due to a rodent specific liver effect that is not relevant to humans.

GERM CELL MUTAGENICITY: Ames test is negative.

STOT-REPEATED EXPOSURE: Based on available data, the classification criteria are not met.

ASPIRATION HAZARD: Possible severe lung damage and death if aspirated into lungs.

TOXICOLOGICALLY SYNERGISTIC MATERIALS: Not available.

OTHER INFORMATION: Not available.

12. ECOLOGICAL INFORMATION

ECOTOXICITY: May cause long term adverse effect in the aquatic environment

PERSISTENCE AND DEGRADABILITY: Not available.

BIOACCUMULATIVE POTENTIAL: Because of the n-octanol/water distribution coefficient (log Pow), accumulation in organisms is not to be expected.

MOBILITY IN SOIL: Not available.

OTHER ADVERSE EFFECTS: Not available.

13. DISPOSAL CONSIDERATIONS

Dispose of contents and container in accordance with all local, regional, national, and international regulations. We recommend evaporation of the contents in an outdoor location and recycling of the steel container.



Speedline® Corporation

SAFETY DATA SHEET

DATE ISSUED : 06/12/2015

DATE REVISED : 06/16/2015

SPEEDLINE WELDING ADHESIVE

14. TRANSPORT INFORMATION

US DEPARTMENT OF TRANSPORTATION

HAZARD CLASS: 3.**SHIPPING NAME:** Flammable Liquid.**ID NUMBER:** UN1133.**PACKING GROUP:** II.**EXEMPTIONS:** 1 Liter or smaller containers ship as Limited Quantity / ORM-D. No label or placard required. International Limited Quantity Label may also be used.

IMDG

HAZARD CLASS: 3.**SHIPPING NAME:** Flammable Liquid.**ID NUMBER:** UN1133.**PACKING GROUP:** II.**MARINE POLLUTANT:** No.

AIR TRANSPORT IATA/ICAO

HAZARD CLASS: 3.**SHIPPING NAME:** Flammable Liquid.**ID NUMBER:** UN1133.**PACKING GROUP:** II.

15. REGULATORY INFORMATION

REGISTRATION STATUS: All components of this product are registered under TSCA.**CERCLA RQ:** 1000 lbs CAS Number 109-99-9 Tetrahydrofuran.**REPORTABLE QUANTITY FOR RELEASE:** 1000 lbs.

16. OTHER INFORMATION

HMIS:

H: 2**F:** 4**R:** 1**PP:** B

NFPA:

H: 2**F:** 4**R:** 1

Tap Magic PROTAP

SECTION 1: Identification of the substance/mixture and of the supplier

Product name: Tap Magic PROTAP

Manufacturer/Supplier Article number: 30004P, 30016P, 30128P, 30640P, 33840P, 37040P

Special Notes on Product uses: After use of this product, clean and lubricate metal surfaces to avoid staining and/or corrosion.

Recommended uses of the product: Machining, Cutting, Tapping, and Metal Processing.

Manufacturer/Supplier Details:
 The Steco Corporation
 2330 Cantrell Road
 Little Rock, AR 72202 USA
 Tel: 501-375-5644
 Website: www.tapmagic.com
 Email: steco@tapmagic.com

Emergency telephone number: ChemTel Inc.: (800)255-3924, +1 (813)248-0585

SECTION 2: Hazards identification

Classification of the substance or mixture:



GHS07
 Skin Irrit. 2; H315
 Eye Irrit. 2; H319
 Skin Sens 1 H317

Signal word: Warning.

Hazard statements:

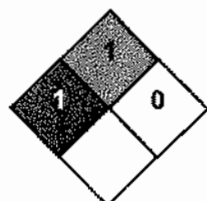
H315: Causes skin irritation.
 H317: May cause an allergic skin reaction.
 H319: Causes serious eye irritation.

Precautionary statements:

P264: Wash hands and exposed skin thoroughly after handling.
 P272: Contaminated work clothing should not be allowed out of the workplace.
 P280: Wear protective gloves, protective clothing, eye protection, and face protection.
 P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing for 15 - 20 minutes.
 P337+P313: If eye irritation persists get medical advice/attention.
 P321: Specific treatment (Section 4).
 P362: Take off contaminated clothing and wash before reuse.
 P302+P352: IF ON SKIN: Wash with soap and water.
 P333+P313: If skin irritation or a rash occurs: Get medical advice/attention.
 P501: Dispose of contents/container as directed in Section 13.

Hazards Not Otherwise Classified (HNOC): None.

Unknown Acute Toxicity: No additional information.

NFPA/HMIS

NFPA SCALE (0-4)

Health = 1

Fire = 1

Reactivity = 0

HEALTH	1*
FIRE	1
PHYSICAL HAZARD	0

HMIS SCALE (0-4)

Health = 1*

Fire = 1

Physical Hazard = 0

0=Minimal Hazard; 1=Slight Hazard; 2=Moderate Hazard; 3=Serious Hazard; 4=Severe Hazard.

Tap Magic PROTAP

SECTION 3: Composition/information on ingredients

Chemical characterization: Mixture.

Description: Machining, cutting, tapping, and metal processing fluid.

Hazardous components: As listed below

CAS / Identifying No.	Description	Wt. %
CAS: 112-80-1	Oleic acid, pure <i>Skin Irrit. 2, H315; Eye Irrit. 2A, H319</i>	75 - 90%
CAS: 26523-78-4	Tris(mono-nonylphenyl) phosphite with 1% trisopropanolamine <i>Skin sens 1 H317; AqAc 1 H400, AqCh 1 H410</i>	0 - 5%

SECTION 4: First aid measures**Description of first aid measures****General information:**

Take affected persons into fresh air, if feasible, or away from the source.

Consult a doctor/physician if concerned or feel unwell.

Immediately remove any clothing soiled by the product.

In case of irregular breathing or respiratory arrest, provide artificial respiration.

After inhalation:

Supply fresh air; consult doctor in case of complaints.

If aspirated, seek medical attention immediately.

Provide oxygen treatment if affected person has difficulty breathing.

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

After eye contact:

Remove contact lenses if worn.

Rinse opened eye for at least 15 - 20 minutes under running water. If symptoms persist, consult a doctor.

After swallowing:

Rinse out mouth and then drink plenty of water.

Call for medical help immediately.

Do not induce vomiting.

If victim vomits, be sure to keep head below knees to prevent aspiration of vomitus into lungs.

If victim is unconscious, position on their side and support them so they cannot roll onto their back.

Most important symptoms and effects, both acute and delayed:

Breathing difficulty.

Coughing.

Irritant to skin and mucous membranes.

Skin sensitization

Slight irritant effect on eyes.

Gastric or intestinal disorders when ingested.

Hazards:

Danger of impaired breathing.

May cause respiratory irritation.

Indication of any immediate medical attention and special treatment needed:

Consult a doctor/physician if concerned or feel unwell.

SECTION 5: Firefighting measures**Extinguishing media****Suitable extinguishing agents:**

Use an extinguishing agent suitable for the surrounding fire.

Tap Magic PROTAP

Foam.

Carbon Dioxide.

Dry Chemical.

For safety reasons unsuitable extinguishing agents: None known.

Special hazards arising from the substance or mixture: Carbon monoxide.

Advice for firefighters

Protective equipment:

Use self-contained breathing apparatus (SCBA) and full bunker turnout gear in a sustained fire.

Wear fully protective suit.

Hazardous Combustion Products:

Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates and gases, including carbon monoxide and unidentified organic and inorganic compounds.

Additional information:

Cool endangered receptacles with water fog or haze.

Use large quantities of foam as it is partially destroyed by the product.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Use respiratory protective device against the effects of release.

Wear protective equipment.

Keep unprotected persons away.

Ensure adequate ventilation.

Particular danger of slipping on leaked/spilled product.

Environmental precautions:

For small spills, soak up with shop towels or absorbent material such as oil-dry or vermiculite.

For large spills, any leaks should be stopped.

Spill should be contained, then cleaned up using vacuum truck or absorbent material.

Methods and material for containment and cleaning up:

Absorb with non-combustible liquid-binding material (sand, diatomite, acid binders, universal binders).

Pick up mechanically.

Send for recovery or disposal in suitable receptacles.

Dispose contaminated material as waste according to Section 13.

Reference to other sections:

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

Precautions for safe handling:

Prevent formation of aerosols.

Avoid splashes or spray in enclosed areas.

Use only in well ventilated areas.

Prevent from freezing.

****After use of this product, clean and lubricate metal surfaces to avoid staining and/or corrosion.**

Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles:

Store only in the original receptacle.

Avoid storage near extreme heat, ignition sources or open flame.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Do not store together with alkalis/caustic solutions.

Store away from foodstuffs.

Tap Magic PROTAP

Further information about storage conditions:

Store in cool, dry conditions in well-sealed containers.

Store receptacle in a well-ventilated area.

Information about fire and explosion protection: No special measures required.

SECTION 8: Exposure controls/personal protection



Safety glasses



Protective gloves

Control Parameters: No applicable occupational exposure limits.

Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Exposure controls:

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Do not inhale gases / fumes / aerosols.

Respiratory protection:

Not required under normal conditions of use.

Use suitable respiratory protective device when aerosol or mist is formed.

Use suitable respiratory protective device in case of insufficient ventilation.

Use respiratory protection when grinding or cutting material.

For spills, respiratory protection may be advisable.

Protection of hands:

Protective gloves should be worn. The glove material has to be impermeable and resistant to the product. Selection of the glove material should be based on the penetration time, rates of diffusion and the degradation of the glove material. The exact break through time has to be determined by the manufacturer of the protective gloves.

Eye protection:

Contact lenses should not be worn.

Body protection:

Protective work clothing.

Tap Magic PROTAP

SECTION 9: Physical and chemical properties

Appearance		Explosion limit	
Physical state:	Liquid.	Lower:	Not determined.
Color:	Amber.	Upper:	Not determined.
Odor:	Mild.	Vapor pressure:	Not applicable.
Odor threshold:	Not determined.	Vapor density:	Not Determined.
pH-value:	Not applicable.	Density:	0.90 g/ml
Melting/Freezing point:	Not applicable.	Solubility:	Insoluble in water.
Boiling point/Boiling range:	Not determine.	Partition coefficient (n-octanol/water):	Not determined.
Flash point (closed cup):	372 ° F / 189 °C	Auto -ignition temperature:	680 ° F / 360 °C
Evaporation rate:	Not determined.	Decomposition temperature:	Not determined.
Flammability (solid, gaseous):	Not applicable.		
Viscosity:	17 Cst at 100° F		
Non-standard parameters: None noted.			

SECTION 10: Stability and reactivity

Reactivity: Not determined

Chemical stability:

Stable at ambient temperatures and pressure.

Elevated temperature and exposure to strong alkalis, oxidizers, and/or acids will promote decomposition.

At normal room temperatures, decomposition is virtually nil.

Exposure to strong direct sunlight may cause decomposition and discoloration of some components present in this product.

Possible hazardous reactions:

Reacts with strong oxidizing agents.

Reacts with strong acids and alkali.

Toxic fumes may be released if heated above the decomposition point.

Conditions to avoid: Store away from oxidizing agents.

Incompatible materials:

Contact with alkali materials.

Oxidizers.

Acids.

Hazardous decomposition products:

Carbon monoxide.

Carbon dioxide.

Phosphorus compounds.

Nitrogen oxides (NOx).

SECTION 11: Toxicological information

Acute Toxicity: No data available.

Routes of Entry: Inhalation, Ingestion, Skin, Eye.

Acute effects (acute toxicity, irritation and corrosivity): Classified as skin and eye irritant.

Chronic Effects on Humans:

Long term exposure without respiratory protection may lead to chronic cough, indigestion or respiratory dysfunction.

Exposure may cause and skin sensitization.

Mutagenicity: None known.

Carcinogenicity: None known.

Tap Magic PROTAP

Reproductive Effects: None known.

Other Effects on Humans: None known.

SECTION 12: Ecological information**Information on Eco-toxicological effects:**

Toxicity: No additional information.

Aquatic toxicity: The material is not classified as harmful to the environment.

Repeated dose toxicity: None known.

Persistence and degradability: The product is not readily biodegradable.

Bioaccumulative potential: No additional information.

Ecotoxicological effects: No additional information.

Mobility in soil: No additional information.

General notes: Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Other adverse effects: No additional information.

SECTION 13: Disposal considerations**Waste treatment methods****Recommendation:**

Product/containers must NOT be disposed together with household garbage.

Do not allow product to reach sewage system or open water.

It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11).

Consult federal state/ provincial and local regulations regarding the proper disposal of waste material that may incorporate some amount of this product.

Suitable absorbents include non-combustible liquid-binding material (natural minerals such as clay, sand, diatomite; activated charcoal, man-made polymers such as HD polyethylene; acid binders, or universal binders, if they are non-biodegradable).

Uncleaned packaging:

Recommendation: Disposal must be made in accordance with all local, state and federal regulations.

Component Waste Numbers:

No EPA Waste Numbers are applicable for this product's components.

SECTION 14: Transport information**US DOT Transportation Information****Proper shipping name:**

DOT, ADR, IMDG, IATA: Not Regulated.

Hazard class:

DOT, ADR, IMDG, IATA: Not Regulated.

Packing group:

DOT, ADR, IMDG, IATA: Not Regulated.

Transport hazard class:

Class: Not Regulated.

Label: None.

Environmental hazards:

Marine pollutant: No.

Special precautions for user: Not applicable.

Tap Magic PROTAP

SECTION 15: Regulatory information

United States (USA)

General Product Information: No additional information available.

Component Analysis: No additional information available.

The following is provided to aide in the preparation of SARA 311 and 312 reports.

SARA 311/312

Acute Health Hazard: Yes.

Chronic Health Hazard: Yes.

Fire Hazard: No.

Sudden Release of Pressure Hazard: No

Reactive Hazard: No

TSCA (Toxic Substances Control Act): This product and/or all of its components are either included on, or exempt from the TSCA Inventory.

Clean Air Act: None of the ingredient is listed.

Proposition 65 (California):

Chemicals known to cause cancer: None of the ingredient is listed.

Chemicals known to cause reproductive toxicity for females: None of the ingredient is listed.

Chemicals known to cause reproductive toxicity for males: None of the ingredient is listed.

Chemicals known to cause developmental toxicity: None of the ingredient is listed.

Canada

Canadian Domestic Substances List (DSL): 373-49-9 Cis-Palmitoleic acid is not listed.

Canadian Ingredient Disclosure list (limit 0.1%): None of the ingredient is listed.

Canadian Ingredient Disclosure list (limit 1%): 112-80-1 Oleic acid, pure

SECTION 16: Other information

Effective date: 12/31/2014 **US Only (GHS) Version**

This information is based on our present knowledge according to 29 CFR 1910/1200 and GHS Rev 3. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

Tap Magic SDS are available at www.tapmagic.com

Document Group: "PROTAP_USA_EN_Rev0"

This SDS applies to part numbers: 30004P, 30016P, 30128P, 30640P, 33840P, 37040P

Tap Magic PROTAP

SDS Created by:

Global Safety Management, Inc.
10006 Cross Creek Blvd
Tampa, FL, 33647
Tel: 1-844-GSM-INFO (1-844-476-4636)
Website: www.GSMSDS.com

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 03.18.2015

Page 1 of 7

Tap Magic EP-Xtra (Aerosol)

SECTION 1: Identification of the substance/mixture and of the supplier

Product name: Tap Magic EP-Xtra(Aerosol)

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number:10012EL

Recommended uses of the product and restrictions on use: Machining, Cutting, Tapping, and Metal Processing.

Special Notes on Product Uses: After use of this product, clean and lubricate metal surfaces to avoid staining and/or corrosion.

Manufacturer Details:

The StecoCorporation

2330 CantrellRoad

Little Rock, AR 72202 USA

501-375-5644

Website: www.tapmagic.com Email: steco@tapmagic.com

Emergency telephone number:

ChemTel Inc.: (800)255-3924, +1(813)248-0585

SECTION 2: Hazards Identification

Classification of the substance or mixture:



Flammable



Compressed Gas

Flammable aerosol 1; H222

Signal word: Danger

Hazard statements:

Extremely flammable aerosol.

Pressurized container; may burst if heated. May be fatal if swallowed and enters airways.

Precautionary statements:

If medical advice is needed, have product container or label at hand. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Wear protective gloves/protective clothing/eye protection/face protection. Do not spray on an open flame or other ignition source.

Pressurized container. Do not pierce or burn, even after use.

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Do NOT induce vomiting.

If on skin: Wash with soap and water.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do.

Continue rinsing.

Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

Dispose of contents and container as instructed in Section 13.

Safety Data Sheet

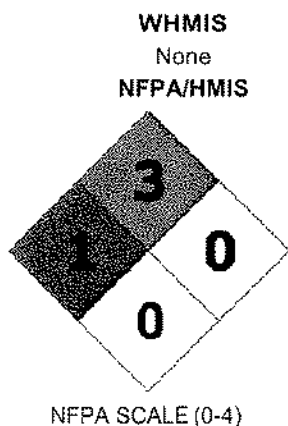
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 03.18.2015

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Tap Magic EP-Xtra (Aerosol)

Other Non-GHS Classification:



Health	1
Flammability	3
Physical Hazard	0
Personal Protection	X

HMIS RATINGS (0-4)

SECTION 3: Composition/Information on ingredients

Ingredients:		
CAS 64742-53-6	Hydrotreated oil	1-50%
CAS 63449-39-8	Paraffin wax compound	1-25%
CAS 74-98-6	Propane	1-10%
CAS 106-97-8	N-Butane	1-5%
Percentages are by weight		

SECTION 4: First aid measures

Description of first aid measures

After inhalation:

Move exposed individual to fresh air. Loosen clothing as necessary and position individual in a comfortable position. Seek medical advice if discomfort or irritation persists. If breathing difficult, give oxygen.

After skin contact:

Wash affected area with soap and water. Rinse/flush exposed skin gently using water for 15-20 minutes. Seek medical advice if discomfort or irritation persists.

After eye contact:

Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Seek medical attention if irritation persists or if concerned.

After swallowing:

IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting.

Most important symptoms and effects, both acute and delayed:

Irritation. Nausea.

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention provide SDS document to physician. Physician should treat symptomatically.

SECTION 5: Firefighting measures

Created by Global Safety Management, 1-813-435-5161 - www.GSMSDS.com

This SDS applies to part number 10012EL

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 03.18.2015

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Tap Magic EP-Xtra (Aerosol)

Extinguishing media

Suitable extinguishing agents:

Use water, dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam.

Unsuitable extinguishing agents:

None identified.

Special hazards arising from the substance or mixture:

Thermal decomposition can lead to release of irritating gases and vapors.

Advice for firefighters:

Protective equipment:

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Additional information (precautions):

Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation. Ensure that air-handling systems are operational.

Environmental precautions:

Should not be released into environment.

Methods and material for containment and cleaning up:

Wear protective eyewear, gloves, and clothing. Refer to Section 8. Keep in suitable closed containers for disposal. Refer to Section 13. Always obey local regulations.

Reference to other sections: None

SECTION 7: Handling and storage

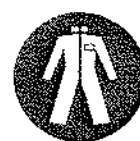
Precautions for safe handling:

Avoid contact with skin, eyes, and clothing. Follow proper disposal methods. Refer to Section 13. Do not eat, drink, smoke, or use personal products when handling chemical substances. Use only with adequate ventilation.

Conditions for safe storage, including any incompatibilities:

Keep container tightly sealed. Store away from incompatible materials.

SECTION 8: Exposure controls/personal protection



Control Parameters: No applicable occupational exposure limits.

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 03.18.2015

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Tap Magic EP-Xtra (Aerosol)

Appropriate Engineering controls: The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Respiratory protection: Not required under normal conditions of use.

Protection of skin: Protective gloves should be worn. The glove material has to be impermeable and resistant to the product. Selection of the glove material should be based on the penetration time, rates of diffusion and the degradation of the glove material. The exact break through time has to be determined by the manufacturer of the protective gloves.

Eye protection: Contact lenses should not be worn.

General hygienic measures: Avoid contact with skin, eyes, and clothing.

SECTION 9: Physical and chemical properties

Appearance (physical state):	Pressurized liquid w/ propellant, Amber	Explosion limit lower: Explosion limit upper:	Not determined
Odor:	Mild	Vapor pressure at 20°C:	Not determined
Odor threshold:	Not determined	Vapor density:	Not determined
pH-value:	Neutral (non-aqueous)	Relative density:	Not determined
Melting/Freezing point:	Not determined	Solubilities:	insoluble in water
Boiling point/Boiling range:	Not determined	Partition coefficient (n-octanol/water):	Not determined
Flash point (closed cup):	>150 C	Auto/Self-ignition:	Not determined
Evaporation rate:	Not determined	Decomposition temperature:	Not determined
Flammability (solid, gaseous):	Not determined	Viscosity:	a. Kinematic: 24 Cst at 40 C b. Dynamic:
Density at 20°C:	0.93 g/ml		

SECTION 10: Stability and reactivity

Reactivity:

Nonreactive under normal conditions.

Chemical stability:

Stable under normal conditions.

Possible hazardous reactions:

None under normal processing.

Conditions to avoid:

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 03.18.2015

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Tap Magic EP-Xtra (Aerosol)

Incompatible materials. Excess heat.

Incompatible materials:

Strong oxidizing agents. Strong acids and alkali.

Hazardous decomposition products:

No data available.

SECTION 11: Toxicological information

Acute Toxicity: No additional information.

Chronic Toxicity: No additional information.

Corrosion/Irritation: No additional information.

Sensitization: No additional information.

Numerical Measures: No additional information.

Carcinogenicity:

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Distillates (petroleum), hydrotrated light, kerosene - unspecified)

Mutagenicity: No additional information.

Reproductive Toxicity: No additional information.

SECTION 12: Ecological information

Ecotoxicity: No additional information.

Persistence and degradability:

No data available.

Bioaccumulative potential:

No data available.

Mobility in soil:

No data available.

Other adverse effects:

None identified.

SECTION 13: Disposal considerations

Waste disposal recommendations:

Dispose of empty containers as unused product. Product or containers must not be disposed together with household garbage. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11).

SECTION 14: Transport information

US DOT

UN Number:

ADR, ADN, DOT, IMDG, IATA

UN1950

Limited Quantity Exception:

1 L

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 03.18.2015

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Tap Magic EP-Xtra (Aerosol)

Bulk:
RQ (if applicable): None
Proper shipping Name: flammable

Non Bulk:
RQ (if applicable): None
Proper shipping Name: flammable

Hazard Class: 2.1
Packing Group:
Marine Pollutant (if applicable): No
Comments: None

Hazard Class: 2.1
Packing Group:
Marine Pollutant (if applicable): No
Comments: None

SECTION 15: Regulatory information

United States (USA)

SARA Section 311/312 (Specific toxic chemical listings):

Acute, Chronic, Fire, Pressure

SARA Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

RCRA (hazardous waste code):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act):

All ingredients are listed.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

None of the ingredients are listed.

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

Canada

Canadian Domestic Substances List (DSL):

All ingredients are listed.

Canadian NPRI Ingredient Disclosure list (limit 0.1%):

None of the ingredients are listed.

Canadian NPRI Ingredient Disclosure list (limit 1%):

None of the ingredients are listed.

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 03.18.2015

Page 7 of 7

Tap Magic EP-Xtra (Aerosol)

SECTION 16: Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material. Note. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material. This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note.

GHS Full Text Phrases: None

Abbreviations and Acronyms:

IMDG International Maritime Code for Dangerous Goods.
PNEC Predicted No-Effect Concentration (REACH).
CFR Code of Federal Regulations (USA).
SARA Superfund Amendments and Reauthorization Act (USA).
RCRA Resource Conservation and Recovery Act (USA).
TSCA Toxic Substances Control Act (USA).
NPRI National Pollutant Release Inventory (Canada).
DOT US Department of Transportation.
IATA International Air Transport Association.
GHS Globally Harmonized System of Classification and Labelling of Chemicals.
ACGIH American Conference of Governmental Industrial Hygienists.
CAS Chemical Abstracts Service (division of the American Chemical Society).
NFPA National Fire Protection Association (USA).
HMIS Hazardous Materials Identification System (USA).
WHMIS Workplace Hazardous Materials Information System (Canada).
DNEL Derived No-Effect Level (REACH).

Effective date: 03.18.2015

Last updated: 07.16.2015

Product Number 024

SAFETY DATA SHEET

Issuing Date No data available

Revision Date 03-11-2015

Revision Number 2



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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name ALL-PRO Acetone

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Multi-purpose solvent

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Name Sunnyside Corporation
Supplier Address 225 Carpenter Avenue
Wheeling
IL
60090
US
Supplier Phone Number Phone:8003238611
Fax:8475419043
Supplier Email sscontact@sunnysidecorp.com
Emergency telephone number Chem Trec 8004249300

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Serious eye damage/eye irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3
Flammable liquids	Category 2

GHS Label elements, including precautionary statements



Emergency Overview**Signal word****Danger****Hazard Statements**

Causes serious eye irritation

May cause drowsiness or dizziness

Highly flammable liquid and vapor

**Appearance** Clear**Physical State** Liquid**Odor** Pungent

Precautionary Statements - Prevention

Avoid breathing dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area

Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Keep container tightly closed

Ground/bond container and receiving equipment

Use explosion-proof electrical/ ventilating/ lighting/ equipment

Use only non-sparking tools

Take precautionary measures against static discharge

Wear protective gloves/protective clothing/eye protection/face protection

Keep cool

Precautionary Statements - Response**Skin**

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Call a POISON CENTER or doctor/physician if you feel unwell

FireIn case of fire: Use CO₂, dry chemical, or foam for extinction**Precautionary Statements - Storage**

Store in a well-ventilated place. Keep container tightly closed

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity0% of the mixture consists of ingredient(s) of unknown toxicity

Other information

May be harmful if inhaled
PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION

Interactions with Other Chemicals

Use of alcoholic beverages may enhance toxic effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Acetone	67-64-1	60 - 100	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES**First aid measures****General Advice**

Show this safety data sheet to the doctor in attendance.

Eye Contact

If symptoms persist, call a physician. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.

Skin Contact

In the case of skin irritation or allergic reactions see a physician. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, (trained personnel should) give oxygen.

Ingestion

Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician.

Self-protection of the first aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed**Most Important Symptoms and Effects**

Burning sensation. Drowsiness. Dizziness.

Indication of any immediate medical attention and special treatment needed**Notes to Physician**

Treat symptomatically.



5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Dry chemical. Carbon dioxide (CO₂). Water spray. Alcohol resistant foam.

Unsuitable Extinguishing Media

CAUTION: All these products have a very low flash point. Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from the Chemical

Vapors can form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapor explosion hazard indoors, outdoors or in sewers. Runoff to sewer may create fire or explosion hazard.

Uniform Fire Code

Flammable Liquid: I-B
Irritant: Liquid

Hazardous Combustion Products

Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge Yes.

Protective equipment and precautions for firefighters

Move containers from fire area if you can do it without risk.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Stop leak if you can do it without risk.

Other Information

Water spray may reduce vapor; but may not prevent ignition in closed spaces.

Environmental Precautions

Environmental Precautions

Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for Containment

A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Methods for cleaning up

Use clean non-sparking tools to collect absorbed material. Soak up with inert absorbent material. Dike far ahead of liquid spill for later disposal.



7. HANDLING AND STORAGE

Precautions for safe handling

Handling

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Use personal protection equipment. Avoid breathing vapors or mists. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions.

Conditions for safe storage, including any incompatibilities

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers.

Incompatible Products

None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Acetone 67-64-1	STEL = 750 ppm TWA: 500 ppm	TWA: 1000 ppm TWA: 2400 mg/m ³ (vacated) TWA: 1800 mg/m ³ (vacated) TWA: 750 ppm (vacated) STEL: 1000 ppm (vacated) STEL: 2400 mg/m ³	IDLH: 2500 ppm 10% LEL TWA: 250 ppm TWA: 590 mg/m ³

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits NIOSH IDLH Immediately Dangerous to Life or Health

Other Exposure Guidelines

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992) See section 15 for national exposure control parameters

Appropriate engineering controls

Engineering Measures

Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection

Tight sealing safety goggles.

Skin and Body Protection

Long sleeved clothing. Chemical resistant apron. Impervious gloves. Antistatic boots.

Respiratory Protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.



Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical State	Liquid	Odor	Pungent
Appearance	Clear	Odor Threshold	No information available
Color	Colorless		
<u>Property</u>	<u>Values</u>	<u>Remarks/ Method</u>	
pH	N/A	None known	
Melting / freezing point	No data available	None known	
Boiling point / boiling range	56 °C / 133 °F	None known	
Flash Point	-18 C / 0 F	None known	
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	N/A	None known	
Flammability Limit in Air			
Upper flammability limit	No data available		
Lower flammability limit	2.5% @ 77 °F		
Vapor pressure	213 mmHg @ 75 °F	None known	
Vapor density	No data available	None known	
Specific Gravity	No data available	None known	
Water Solubility	Soluble in water	None known	
Solubility in other solvents	data available	None known	
Partition coefficient: n-octanol/water	No data available	None known	
Autoignition temperature	869 °F	None known	
Decomposition temperature	No data available	None known	
Kinematic viscosity	No data available	None known	
Dynamic viscosity	No data available	None known	
Explosive properties	No data available		
Oxidizing Properties	No data available		

Other Information

Softening Point	No data available
VOC Content (%)	Exempt
Particle Size	No data available
Particle Size Distribution	

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

Heat, flames and sparks.

Incompatible materials

Caustics, amines, alkanolamines, ammonia, strong oxidizing agents and chlorinated compounds.

Hazardous Decomposition Products

Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available. May cause drowsiness and dizziness based on components. May cause irritation of respiratory tract.
Eye Contact	Specific test data for the substance or mixture is not available. Expected to be an irritant based on components. May cause redness, itching, and pain. May cause temporary eye irritation.
Skin Contact	Specific test data for the substance or mixture is not available. May cause irritation. Prolonged contact may cause redness and irritation.
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Acetone 67-64-1	-	-	= 50100 mg/m ³ (Rat) 8 h

Information on toxicological effects

Symptoms May cause redness and tearing of the eyes.

Delayed and immediate effects as well as chronic effects from short and long-term exposure



Sensitization	No information available.
Mutagenic Effects	No information available.
Carcinogenicity	Contains no ingredient listed as a carcinogen.
Reproductive Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Chronic Toxicity	No known effect based on information supplied.
Target Organ Effects	Eyes. Central Nervous System (CNS). Respiratory system. Skin.
Aspiration Hazard	No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (inhalation-dust/mist)

100.20 mg/l

12. ECOLOGICAL INFORMATION**Ecotoxicity**

The environmental impact of this product has not been fully investigated.

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Chemical Name	Log Pow
Acetone 67-64-1	-0.24

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

Contaminated Packaging Dispose of contents/containers in accordance with local regulations.

US EPA Waste Number D001 U002

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Acetone 67-64-1				U002

California Hazardous Waste Codes 212

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Acetone 67-64-1	Ignitable

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name CONSUMER COMMODITY
Hazard Class ORM-D
Description CONSUMER COMMODITY, ORM-D
Emergency Response Guide Number 127

TDG

UN-No. UN1090
Proper Shipping Name ACETONE
Hazard Class 3
Packing Group II
Description UN1090, ACETONE, 3, II

MEX

UN-No. UN1090
Proper Shipping Name ACETONE
Hazard Class 3
Packing Group II
Description UN1090 ACETONE, 3, II

ICAO

UN-No. UN1090
Proper Shipping Name ACETONE
Hazard Class 3
Packing Group II
Description UN1090, ACETONE, 3, II

IATA

UN-No. UN1090
Proper Shipping Name ACETONE
Hazard Class 3



Packing Group	II
Description	UN1090, ACETONE, 3, II

IMDG/IMO

UN-No.	UN1090
Proper Shipping Name	ACETONE
Hazard Class	3
Packing Group	II
EmS No.	F-E, S-D
Description	UN1090, ACETONE, 3, II, FP -18C

RID

UN-No.	UN1090
Proper Shipping Name	ACETONE
Hazard Class	3
Packing Group	II
Classification code	F1
Description	UN1090 ACETONE, 3, II

ADR

UN-No.	UN1090
Proper Shipping Name	ACETONE
Hazard Class	3
Packing Group	II
Classification code	F1
Description	UN1090 ACETONE, 3, II

ADN

UN-No.	UN1090
Proper Shipping Name	ACETONE
Hazard Class	3
Packing Group	II
Classification code	F1
Description	UN1090 ACETONE, 3, II
Hazard Labels	3
Limited Quantity	1 L
Ventilation	VE01

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL	All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	Yes
Sudden release of pressure hazard	No
Reactive Hazard	No



CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Acetone 67-64-1	5000 lb		RQ= 2270 kg final RQ RQ= 5000 lb final RQ

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Acetone 67-64-1	X	X	X	X	

International Regulations**Mexico****National occupational exposure limits**

Component	Carcinogen Status	Exposure Limits
Acetone 67-64-1 (60 - 100)		Mexico: TWA= 1000 ppm Mexico: TWA= 2400 mg/m ³ Mexico: STEL= 1260 ppm Mexico: STEL= 3000 mg/m ³

Mexico - Occupational Exposure Limits - Carcinogens

Canada**WHMIS Hazard Class**

B2 - Flammable liquid

D2B - Toxic materials

**16. OTHER INFORMATION**

NFPA	Health Hazards 2	Flammability 3	Instability 0	Physical and Chemical Hazards -
HMIS	Health Hazards 2	Flammability 3	Physical Hazard 0	Personal Protection X



Prepared By	Product Stewardship 23 British American Blvd. Latham, NY 12110 1-800-572-6501
Revision Date	15-Sep-2014
Revision Note	No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet



SAFETY DATA SHEET

Product Number 013

Section 1. Identification

GHS product identifier	: Calumet LVP 100
Product name	: ALLPRO Paint Thinner
Chemical name Other means of identification	: Distillates (petroleum), hydrotreated light Kerosine - unspecified; Distillates, petroleum, hydrotreated light; Hydrotreated light distillate; Kerosene (petroleum), hydrotreated; HYDROTREATED KEROSENE; Jet fuels; Hydrotreated light distillates (petroleum); DISTILLATES; Deodorized kerosene; Dearomatized kerosene
Product type	: Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Identified uses	
Petrochemical industry: Petroleum refining. Solvent.	
Uses advised against	Reason
Not available.	

Supplier's details	: Sunnyside Corporation 225 Carpenter Ave. Wheeling, IL 60090 847-541-5700 email: sscontact@sunnysidecorp.com
---------------------------	--

Emergency telephone number (with hours of operation)	: 24 hr. CHEMTREC 1-800-424-9300
---	----------------------------------

Section 2. Hazards identification

OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: FLAMMABLE LIQUIDS - Category 4 ASPIRATION HAZARD - Category 1

GHS label elements

Hazard pictograms

:



Signal word	: Danger
Hazard statements	: Combustible liquid. May be fatal if swallowed and enters airways.

Precautionary statements

Prevention	: Wear protective gloves. Wear eye or face protection. Keep away from flames and hot surfaces. - No smoking.
Response	: IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.
Storage	: Store locked up. Store in a well-ventilated place. Keep cool.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Section 2. Hazards identification

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : Distillates (petroleum), hydrotreated light

Other means of identification : Kerosine - unspecified; Distillates, petroleum, hydrotreated light; Hydrotreated light distillate; Kerosene (petroleum), hydrotreated; HYDROTREATED KEROSENE; Jet fuels; Hydrotreated light distillates (petroleum); DISTILLATES; Deodorized kerosene; Dearomatized kerosine

CAS number/other identifiers

CAS number : 64742-47-8

Ingredient name	%	CAS number
Distillates (petroleum), hydrotreated light	100	64742-47-8

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : Defatting to the skin. May cause skin dryness and irritation.

Ingestion : May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

Section 4. First aid measures

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
dryness
cracking
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

- Specific hazards arising from the chemical** : Combustible liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

- Hazardous thermal decomposition products** : No specific data.

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Section 6. Accidental release measures

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Distillates (petroleum), hydrotreated light	ACGIH TLV (United States, 4/2014). Absorbed through skin. TWA: 200 mg/m ³ , (as total hydrocarbon vapor) 8 hours.

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Section 8. Exposure controls/personal protection

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid. [Mobile liquid.]
- Color** : Colorless.
- Odor** : Mild. Hydrocarbon.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : -49°C (-56.2°F)
- Boiling point** : 222.78 to 245°C (433 to 473°F)
- Flash point** : Closed cup: 95°C (203°F) [Pensky-Martens.] [Product does not sustain combustion.]
- Evaporation rate** : 0.19 (butyl acetate = 1)
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Lower: 0.6%
Upper: 5.5%
- Vapor pressure** : 0.027 kPa (0.2 mm Hg) [room temperature]
- Vapor density** : 4.5 [Air = 1]
- Relative density** : 0.804
- Solubility** : Insoluble in the following materials: cold water and hot water.
- Solubility in water** : 1.5 g/l

Section 9. Physical and chemical properties

Partition coefficient: n-octanol/water	: Not applicable.
Auto-ignition temperature	: >220°C (>428°F)
Decomposition temperature	: Not available.
Viscosity	: Kinematic (40°C (104°F)): 0.02 cm ² /s (2 cSt)

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Distillates (petroleum), hydrotreated light	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Section 11. Toxicological information

Name	Result
Distillates (petroleum), hydrotreated light	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : Defatting to the skin. May cause skin dryness and irritation.
Ingestion : May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : Adverse symptoms may include the following:
 irritation
 dryness
 cracking
Ingestion : Adverse symptoms may include the following:
 nausea or vomiting

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption:** This material is listed or exempted. This material is listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Section 15. Regulatory information

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Distillates (petroleum), hydrotreated light	100	Yes.	No.	No.	No.	No.

State regulations

Massachusetts : This material is not listed.

New York : This material is not listed.

New Jersey : This material is not listed.

Pennsylvania : This material is not listed.

California Prop. 65

This product is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International lists

National inventory

Australia : This material is listed or exempted.

Canada : This material is listed or exempted.

China : This material is listed or exempted.

Europe : This material is listed or exempted.

Japan : This material is listed or exempted.

Malaysia : This material is listed or exempted.

New Zealand : This material is listed or exempted.

Philippines : This material is listed or exempted.

Republic of Korea : This material is listed or exempted.

Taiwan : This material is listed or exempted.

Section 16. Other information

Procedure used to derive the classification

Classification	Justification
Flam. Liq. 4, H227 Asp. Tox. 1, H304	Expert judgment On basis of test data

History

: 03/19/2015

Section 16. Other information

Date of issue/Date of revision

Version : 2.01

Key to abbreviations

: ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Safety Data Sheet

Titebond Weathermaster Metal Roof Sealant White 61001A

Section 1. Identification

GHS product identifier	: Titebond Weathermaster Metal Roof Sealant White 61001A
Product type	: Liquid.
Address	: Franklin International 2020 Bruck Street Columbus OH 43207
Contact person	: Franklin Technical Services
Telephone	: (800) 877-4583
In case of emergency	: Franklin Security (614) 445-1300
Product code	: 61001A
Date of revision	: 3/15/2016.
Print date	: 3/15/2016.
Chemtrec (24 Hour)	: (800) 424 - 9300
Chemtrec International	: (703) 527 - 3887

Relevant identified uses of the substance or mixture and uses advised against

Not applicable.

Section 2. Hazards identification

OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A

GHS label elements

Hazard pictograms



Signal word

: Warning

Hazard statements

: Causes serious eye irritation.
Causes skin irritation.

Precautionary statements

General

: Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention

: Wear protective gloves. Wear eye or face protection. Wash hands thoroughly after handling.

Response

: IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Hazards not otherwise classified

: This material produces methanol during cure.

Section 3. Composition/information on ingredients

Hazardous ingredients

United States

Name	CAS number	%
Allyl Terminated Polyether	-	10 - 25

Canada

Name	CAS number	%
Allyl Terminated Polyether	-	10 - 25

Mexico

					Classification			
Name	CAS number	UN number	%	IDLH	H	F	R	Special
Allyl Terminated Polyether	-	Not available.	10 - 25	-	1	1	0	-

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : May cause eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : May cause skin irritation.

Section 4. First aid measures

- Ingestion** : Irritating to mouth, throat and stomach.
- Over-exposure signs/symptoms**
- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.
- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.
- Hazardous thermal decomposition products** : No specific data.
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Section 6. Accidental release measures

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store between the following temperatures: 0 to 120°C (32 to 248°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

United States

Occupational exposure limits

Ingredient name	Exposure limits
No exposure limit value known.	

Canada

Occupational exposure limits		TWA (8 hours)			STEL (15 mins)			Ceiling			Notations
Ingredient	List name	ppm	mg/m ³	Other	ppm	mg/m ³	Other	ppm	mg/m ³	Other	
No exposure limit value known.											

Mexico

Occupational exposure limits

Ingredient	Exposure limits
No exposure limit value known.	

Section 8. Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

Appropriate engineering controls	: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
Environmental exposure controls	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
<u>Individual protection measures</u>	
Hygiene measures	: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
<u>Skin protection</u>	
Hand protection	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Body protection	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection	: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state	: Liquid. [Paste.]
Color	: White.
Odor	: Characteristic.
Odor threshold	: Not available.
pH	: Not applicable.
Melting point	: Not available.
Boiling point	: >200°C (>392°F)
Flash point	: Closed cup: >200°C (>392°F) [Setaflash.]
Evaporation rate	: <1 (butyl acetate = 1)
VOC (less water, less exempt solvents)	: 0 g/l
Relative density	: 1.415
Solubility	: Insoluble in the following materials: cold water and hot water.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact	: May cause eye irritation.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: May cause skin irritation.
Ingestion	: Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	: No specific data.
Skin contact	: Adverse symptoms may include the following: irritation redness
Ingestion	: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Long term exposure

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Section 12. Ecological information

Toxicity

Conclusion/Summary : Not available.

Persistence and degradability

Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-	-
Packing group	-	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.	No.
Additional information	-	-	-	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined
United States inventory (TSCA 8b): All components are listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

Section 15. Regulatory information

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Allyl Terminated Polyether	10 - 25	No.	No.	No.	Yes.	No.

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

Not available.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Not applicable.				

Canada

Canadian lists

Canadian NPRI : None of the components are listed.

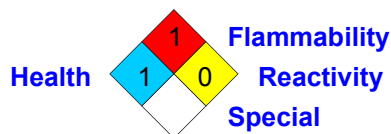
CEPA Toxic substances : None of the components are listed.

Canada inventory : At least one component is not listed.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Mexico

Classification :



International regulations

International lists :

- Australia inventory (AICS)**: At least one component is not listed.
- China inventory (IECSC)**: Not determined.
- Japan inventory**: Not determined.
- Korea inventory**: Not determined.
- Malaysia Inventory (EHS Register)**: Not determined.
- New Zealand Inventory of Chemicals (NZIoC)**: At least one component is not listed.
- Philippines inventory (PICCS)**: At least one component is not listed.
- Taiwan inventory (CSNN)**: Not determined.

Europe : Not determined.

Section 15. Regulatory information

Chemical Weapons : Not listed

Convention List Schedule

I Chemicals

Chemical Weapons : Not listed

Convention List Schedule

II Chemicals

Chemical Weapons : Not listed

Convention List Schedule

III Chemicals

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	1
Flammability	1
Physical hazards	1

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

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Version : 1

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships,

Section 16. Other information

1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References

: Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET

TF20000 SERIES

Section 1. Identification

Product name : TRI-FLOW® Industrial Lubricant
TF20005,20006,20009,20025,20027

Product code : TF20000 SERIES

Other means of identification : Not available.

Product type : Aerosol.

Relevant identified uses of the substance or mixture and uses advised against
Not applicable.

Manufacturer : Tri-Flow Industrial Group
Cleveland, OH 44115

Emergency telephone number of the company : (216) 566-2917

Product Information Telephone Number : Not available.

Regulatory Information Telephone Number : (216) 566-2902

Transportation Emergency Telephone Number : (800) 424-9300

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE AEROSOLS - Category 1
GASES UNDER PRESSURE - Compressed gas
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation and Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
ASPIRATION HAZARD - Category 1
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 39.3%

GHS label elements

Hazard pictograms



Signal word

Hazard statements

: Danger

: Extremely flammable aerosol.
Contains gas under pressure; may explode if heated.
Causes serious eye irritation.
Causes skin irritation.
May be fatal if swallowed and enters airways.
May cause respiratory irritation.
May cause drowsiness and dizziness.
May cause damage to organs through prolonged or repeated exposure.

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Section 2. Hazards identification

Precautionary statements

- Prevention** : Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Pressurized container: Do not pierce or burn, even after use. Do not spray on an open flame or other ignition source. Use only outdoors or in a well-ventilated area. Do not breathe dust or mist. Wash hands thoroughly after handling.
- Response** : Get medical attention if you feel unwell. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
- Storage** : Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Store in a well-ventilated place.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** : DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. FOR INDUSTRIAL USE ONLY.
Please refer to the SDS for additional information. Keep upright in a cool, dry place. Do not discard empty can in trash compactor.
- Hazards not otherwise classified** : None known.

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Not available.

CAS number/other identifiers

Ingredient name	% by weight	CAS number
Heavy Naphthenic Petroleum Oil	39.2	64742-52-5
Aliphatic Solvent	23.6	64742-47-8
Propane	10.2	74-98-6
Butane	9.8	106-97-8
Heavy Paraffinic Oil	3.4	64742-65-0
Heavy Naphthenic Petroleum Oil	2.0	64742-52-5
Barium Dinonyl Naphthalene Sulfonate	2.0	25619-56-1
Tetrafluoroethene Polymer	1.3	9002-84-0

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

Indication of immediate medical attention and special treatment needed, if necessary

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Section 4. First aid measures

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.

- Unsuitable extinguishing media** : None known.

- Specific hazards arising from the chemical** : Extremely flammable aerosol. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed. Runoff to sewer may create fire or explosion hazard.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides
halogenated compounds
metal oxide/oxides

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

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Section 6. Accidental release measures

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Do not breathe vapor or mist. Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Protect from sunlight. Store locked up. Eliminate all ignition sources. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Heavy Naphthenic Petroleum Oil	ACGIH TLV (United States, 4/2014). TWA: 5 mg/m ³ 8 hours. Form: Inhalable fraction
Aliphatic Solvent	NIOSH REL (United States, 10/2013). TWA: 5 mg/m ³ 10 hours. Form: Mist STEL: 10 mg/m ³ 15 minutes. Form: Mist OSHA PEL (United States, 2/2013). TWA: 5 mg/m ³ 8 hours.
Propane	ACGIH TLV (United States, 4/2014). Absorbed through skin. TWA: 200 mg/m ³ , (as total hydrocarbon vapor) 8 hours. NIOSH REL (United States, 10/2013). TWA: 1000 ppm 10 hours. TWA: 1800 mg/m ³ 10 hours.

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Section 8. Exposure controls/personal protection

Butane	<p>OSHA PEL (United States, 2/2013). TWA: 1000 ppm 8 hours. TWA: 1800 mg/m³ 8 hours.</p> <p>NIOSH REL (United States, 10/2013). TWA: 800 ppm 10 hours. TWA: 1900 mg/m³ 10 hours.</p> <p>ACGIH TLV (United States, 4/2014). STEL: 1000 ppm 15 minutes.</p>
Heavy Paraffinic Oil	<p>ACGIH TLV (United States, 4/2014). TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction</p> <p>NIOSH REL (United States, 10/2013). TWA: 5 mg/m³ 10 hours. Form: Mist STEL: 10 mg/m³ 15 minutes. Form: Mist</p>
Heavy Naphthenic Petroleum Oil	<p>OSHA PEL (United States, 2/2013). TWA: 5 mg/m³ 8 hours.</p> <p>ACGIH TLV (United States, 4/2014). TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction</p> <p>NIOSH REL (United States, 10/2013). TWA: 5 mg/m³ 10 hours. Form: Mist STEL: 10 mg/m³ 15 minutes. Form: Mist</p> <p>OSHA PEL (United States, 2/2013). TWA: 5 mg/m³ 8 hours.</p>

Appropriate engineering controls

- : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

- : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

- : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

- : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection

- : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Section 8. Exposure controls/personal protection

- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : Not available.
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Closed cup: -29°C (-20.2°F) [Pensky-Martens Closed Cup]
- Evaporation rate** : 0.42 (butyl acetate = 1)
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Lower: 0.7%
Upper: 9.5%
- Vapor pressure** : 13.5 kPa (101.325 mm Hg) [at 20°C]
- Vapor density** : 1.55 [Air = 1]
- Relative density** : 0.77
- Solubility** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Kinematic (room temperature): <0.205 cm²/s (<20.5 cSt)
Kinematic (40°C (104°F)): <0.205 cm²/s (<20.5 cSt)

Aerosol product

- Type of aerosol** : Spray
- Heat of combustion** : 0.00003471 kJ/g

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : Avoid all possible sources of ignition (spark or flame).

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Section 10. Stability and reactivity

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Heavy Naphthenic Petroleum Oil	LD50 Oral	Rat	>5000 mg/kg	-
Butane	LC50 Inhalation Vapor	Rat	658000 mg/m ³	4 hours
Heavy Paraffinic Oil	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
Heavy Naphthenic Petroleum Oil	LD50 Oral	Rat	>5000 mg/kg	-
Barium Dinonyl Naphthalene Sulfonate	LD50 Oral	Rat	>5000 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Heavy Naphthenic Petroleum Oil	Skin - Severe irritant	Rabbit	-	500 milligrams	-
Heavy Naphthenic Petroleum Oil	Skin - Severe irritant	Rabbit	-	500 milligrams	-
Barium Dinonyl Naphthalene Sulfonate	Eyes - Mild irritant	Rabbit	-	0.1 Milliliters	-
	Eyes - Severe irritant	Rabbit	-	0.1 Milliliters	-
	Skin - Moderate irritant	Rabbit	-	0.5 Milliliters	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Tetrafluoroethene Polymer	-	3	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
Heavy Naphthenic Petroleum Oil	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Aliphatic Solvent	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Propane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Butane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Heavy Paraffinic Oil	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Heavy Naphthenic Petroleum Oil	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Heavy Naphthenic Petroleum Oil	Category 2	Not determined	Not determined
Aliphatic Solvent	Category 2	Not determined	Not determined
Propane	Category 2	Not determined	Not determined
Butane	Category 2	Not determined	Not determined
Heavy Paraffinic Oil	Category 2	Not determined	Not determined
Heavy Naphthenic Petroleum Oil	Category 2	Not determined	Not determined

Aspiration hazard

Name	Result
Propane	ASPIRATION HAZARD - Category 1
Butane	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness

- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

- General** : May cause damage to organs through prolonged or repeated exposure.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Inhalation (dusts and mists)	71.09 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Aliphatic Solvent	Acute LC50 2200 µg/l Fresh water	Fish - Lepomis macrochirus	4 days

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

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Section 12. Ecological information

Mobility in soil






Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	UN1950	UN1950	UN1950	UN1950	UN1950
UN proper shipping name	AEROSOLS	AEROSOLS	AEROSOLS	AEROSOLS, flammable	AEROSOLS
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.
Additional information	Special provisions LIMITED QUANTITY	Special provisions LIMITED QUANTITY	Special provisions (ERG#126)	Special provisions LIMITED QUANTITY	Emergency schedules (EmS) LIMITED QUANTITY, F-D, S-U

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

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Section 15. Regulatory information

[U.S. Federal regulations](#) :

[State regulations](#)

[California Prop. 65](#)

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Section 16. Other information

[Hazardous Material Information System \(U.S.A.\)](#)

Health	2
Flammability	4
Physical hazards	0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

[Notice to reader](#)

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.

[Date of issue/Date of revision](#)

: 6/25/2015.

[Date of previous issue](#)

: 6/2/2015.

[Version](#) : 1.02

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BIOTROL 102**1 PRODUCT AND COMPANY IDENTIFICATION**

Product Identifier: BIOTROL 102
Common Name: Mixture
SDS Number: 0160
Product Code: BI0001
Revision Date: 5/7/2015
Version: 1
Internal ID: 300D
Product Use: Water Treatment Biocide
Supplier Details: U. S. Water Services
12270 43rd St. NE
St. Michael, MN 55376

Contact: Non-emergency #: 866-663-7632
Email: SDS@uswaterservices.com
Web: www.uswaterservices.com

EMERGENCY RESPONSE: (ChemTel)
US & Canada: 800-255-3924
International: +01-813-248-0585

2 HAZARDS IDENTIFICATION**Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):**

Health, Skin corrosion/irritation, 1 B
Health, Skin sensitization, 1

GHS Label elements, including precautionary statements

GHS Signal Word: **DANGER**

GHS Hazard Pictograms:**GHS Hazard Statements:**

H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction

GHS Precautionary Statements:

P301+330+331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+361+353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P333+313 - If skin irritation or a rash occurs: Get medical advice/attention.
P305+351+338 - IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

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P363 - Wash contaminated clothing before reuse.

P405 - Store locked up.

P501 - Dispose of contents/container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS

PPE recommendation is advisory only and based on typical use conditions. An industrial hygienist or safety officer familiar with the specific situation of anticipated use must determine actual PPE required when using this product (29 CFR 1910.132)

3 COMPOSITION/INFORMATION ON INGREDIENTS**Ingredients:**

Cas#	%	Chemical Name
26172-55-4	1.15-1.25%	3(2H)-Isothiazolone, 5-chloro-2-methyl-
2682-20-4	0.35-0.45%	3(2H)-Isothiazolone, 2-methyl-
7786-30-3	1.0-1.2%	Magnesium chloride (MgCl ₂)
10377-60-3	1.7-1.8%	Magnesium nitrate
3251-23-8	0.15-0.17%	Cupric nitrate

4 FIRST AID MEASURES

- Inhalation:** Remove from contamination. If person has stopped breathing administer artificial respiration. Seek medical attention.
- Skin Contact:** Wash off with soap and plenty of water. Remove contaminated garments and wash or destroy. Seek medical attention if irritation develops. Consult a physician if irritation develops.
- Eye Contact:** Flush eyes with plenty of running water for 15 minutes. Seek medical attention.
- Ingestion:** If conscious, give plenty of water. If discomfort or other symptoms develop, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms & effects (acute & delayed): No data available

Indication of need for immediate medical attention: None

Special treatment needs: None

5 FIRE FIGHTING MEASURES

- Flammability:** Not flammable
- Flash Point:** None
- Flash Point Method:** Pensky Martens Closed cup
- Burning Rate:** No data available
- Autoignition Temp:** No data available
- LEL:** Not applicable
- UEL:** Not applicable

Extinguishing Media:

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Suitable: Use extinguishing media suitable for surrounding fire.

Unsuitable: No information available

Hazardous combustion products: None

Unusual Fire or Explosion Hazards: Avoid exposure to fumes and vapors from a fire, can possibly include sulfur dioxide and hydrogen chloride and oxides of sulfur.

Special protective equipment/precautions: Wear self-contained breathing apparatus

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective equipment, emergency procedures: Avoid contact with the material. See section 8 for PPE recommendations

Environmental Precautions: Keep runoff from entering drains or waterways

Spill/Leak procedures: Contain spill or leak. Dike area if necessary to prevent spill from spreading or entering sewers and waterways. Recover as much as possible then absorb remainder with inert material. Place into closed container for disposal.

This is a hazardous waste: RCRA #D002. Reportable quantity 100 lbs. (CERCLA Superfund Sec 103) Land fill contaminated solids in sealed drums in accordance with all applicable local, state and federal regulations.

Regulatory Requirements: Dispose of recovered material in accordance with all applicable state and federal regulations.

7 HANDLING AND STORAGE

Handling Precautions: Avoid contact with eyes, skin, or clothing. Do not taste or swallow. Do not inhale vapor or mist. Use with adequate ventilation. For industrial use only!

Storage Requirements: Keep away from children. Store in closed containers away from temperature extremes and incompatible materials.
Store in properly labeled containers in accordance with all local, state and federal guidelines.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Provide local exhaust ventilation as needed to control misting.

Personal Protective Equipment: HMIS PP, D | Face Shield and Eye Protection, Gloves, Apron

Respiratory protection: If needed use MSHA/NIOSH approved respirator for dusts and mists. Seek professional advice prior to respirator selection and use. Follow all requirements of OSHA respirator regulations (29 CFR 1910.134)

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

General Hygiene: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, using the toilet, or applying cosmetics.

PPE recommendation is advisory only and based on typical use conditions. An industrial hygienist or safety officer familiar with the specific situation of anticipated use must determine actual PPE required when using this product (29 CFR 1910.132)

Exposure Limits:

OSHA (TWA)/PEL: Not Established

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ACGIH (TWA/TLV): Not Established

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Light blue to light green	Odor:	Pungent odor
Physical State:	Liquid	Solubility:	Complete in water
Odor Threshold:	Not determined	Percent Volatile:	95-96 % water
Spec Grav./Density:	8.51 lb/gal	Freezing/Melting Pt.:	-3.00 °C
Viscosity:	3 cps (@25C)	Flash Point:	Not determined
Boiling Point:	100°C	Vapor Density:	0.62
Partition Coefficient:	log Pow: 0.401	Auto-Ignition Temp:	Not determined
Vapor Pressure:	Not determined	UFL/LFL:	Not determined
pH:	2.0-4.0		
Evap. Rate:	<1.00 (Butyl Acetate =1)		
Decomp Temp:	Not determined		

10 STABILITY AND REACTIVITY

Stability:	Product is stable under normal storage and use conditions.
Conditions to Avoid:	Avoid temperature extremes. Protect from freezing
Materials to Avoid:	Oxidizing agents, reducing agents, amines, mercaptans
Hazardous Decomposition:	Nitrogen oxides (NOx) Sulphur oxides hydrogen chloride.
Hazardous Polymerization:	Will not occur.

11 TOXICOLOGICAL INFORMATION*Toxicological information on this product or its components appear in this section when such data is available.***Acute toxicity****Acute oral toxicity**

LD50, Rat, female, 3,310 mg/kg

LD50, Rat, male, > 5,000 mg/kg

Acute dermal toxicity

LD50, Rabbit, > 5,000 mg/kg

Acute inhalation toxicity

LC50, Rat, 4 Hour, dust/mist, > 5 mg/l Estimated.

Skin corrosion/irritation

This material is corrosive.

Serious eye damage/eye irritation

Corrosive

Sensitization

Has caused allergic skin reactions when tested in guinea pigs.

Specific Target Organ Systemic Toxicity (Single Exposure)

Product test data not available.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Product test data not available.

Carcinogenicity

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Did not cause cancer in laboratory animals.

Teratogenicity

Did not show teratogenic effects in animal experiments.

Reproductive toxicity

In animal studies, did not interfere with reproduction.

Mutagenicity

Not mutagenic when tested in bacterial or mammalian systems.

Aspiration Hazard

Product test data not available.

COMPONENTS INFLUENCING TOXICOLOGY:**5-Chloro-2-methyl-4-isothiazolin-3-one****Specific Target Organ Systemic Toxicity (Single Exposure)**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Aspiration Hazard

Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

2-Methyl-4-isothiazolin-3-one**Specific Target Organ Systemic Toxicity (Single Exposure)**

May cause respiratory irritation.

Route of Exposure: Inhalation

Target Organs: Respiratory Tract

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Aspiration Hazard

Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

Magnesium Chloride**Specific Target Organ Systemic Toxicity (Single Exposure)**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

Magnesium nitrate**Specific Target Organ Systemic Toxicity (Single Exposure)**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

For similar material(s):

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Aspiration Hazard

Based on available information, aspiration hazard could not be determined.

Carcinogenicity**Component****List****Classification**

Magnesium Nitrate

IRAC

Group 2A: Probably carcinogenic to humans

Copper Nitrate

IRAC

Group 2A: Probably carcinogenic to humans

BIOTROL 102**12****ECOLOGICAL INFORMATION**

Ecotoxicological information on this product or its components appear in this section when such data is available.

Toxicity**5-Chloro-2-methyl-4-isothiazolin-3-one****Acute toxicity to fish**

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

LC50, Rainbow trout (*Oncorhynchus mykiss*), 96 Hour, 0.19 mg/l, OECD Test Guideline 203 or Equivalent

LC50, Bluegill sunfish (*Lepomis macrochirus*), 96 Hour, 0.28 mg/l

Acute toxicity to aquatic invertebrates

EC50, *Daphnia magna*, 48 Hour, 0.16 mg/l

Acute toxicity to algae/aquatic plants

NOEC, *Selenastrum capricornutum* (green algae), Growth rate, 0.0099 mg/l

EC50, Algae (*Selenastrum capricornutum*), 72 Hour, Growth rate, 0.018 mg/l

Toxicity to bacteria

EC50, Bacteria, 16 Hour, 5.7 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, *Daphnia magna* (Water flea), 21 d, number of offspring, 0.172000 mg/l

LOEC, *Daphnia magna* (Water flea), 21 d, number of offspring, 0.572000 mg/l

2-Methyl-4-isothiazolin-3-one**Acute toxicity to fish**

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

LC50, *Oncorhynchus mykiss* (rainbow trout), 96 Hour, 4.77 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

LC50, *Daphnia magna* (Water flea), 48 Hour, 0.93 - 1.9 mg/l

Acute toxicity to algae/aquatic plants

EC50, Algae (*Selenastrum capricornutum*), 72 Hour, Growth rate, 0.158 mg/l, OECD Test Guideline 201

Chronic toxicity to aquatic invertebrates

NOEC, *Daphnia magna*, 21 d, 0.04 mg/l

Magnesium Chloride**Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50, *Gambusia affinis* (Mosquito fish), static test, 96 Hour, 16,500 mg/l, Method Not Specified.

Acute toxicity to aquatic invertebrates

EC50, *Daphnia magna* (Water flea), 24 Hour, 3,190 mg/l, Directive 84/449/EEC, C.2

Acute toxicity to algae/aquatic plants

EC50, alga *Scenedesmus* sp., 72 Hour, Biomass, 2,200 mg/l, OECD Test Guideline 201 or Equivalent

Magnesium nitrate**Acute toxicity to fish**

Not expected to be acutely toxic to aquatic organisms.

For similar material(s):

LC50, *Poecilia reticulata* (guppy), 96 Hour, > 100 mg/l

Acute toxicity to aquatic invertebrates

For similar material(s):

EC50, *Daphnia magna*, 48 Hour, > 100 mg/l

Acute toxicity to algae/aquatic plants

For similar material(s):

ErC50, Algae, 72 Hour, Growth rate, > 100 mg/l

Copper nitrate

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Acute toxicity to fish

Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

LC50, Coho salmon, silver salmon (*Oncorhynchus kisutch*), 96 Hour, 0.286 mg/l, Method Not Specified.

LC50, Cyprinodon variegatus (sheepshead minnow), 96 Hour, 0.22 mg/l, Method Not Specified.

LC50, Zebra fish (*Danio/Brachydanio rerio*), 96 Hour, 0.21 mg/l, Method Not Specified.

LC50, Mosquito fish (*Gambusia affinis*), 72 Hour, 0.12 mg/l, Method Not Specified.

LC50, Bluegill sunfish (*Lepomis macrochirus*), 96 Hour, 0.62 mg/l, Method Not Specified.

EC10, Rainbow trout (*Salmo gairdneri*), 672 Hour, 0.0165 mg/l, Method Not Specified.

Acute toxicity to aquatic invertebrates

LC50, ceriodaphnia dubia (water flea), 48 Hour, 0.066 mg/l, Method Not Specified.

Acute toxicity to algae/aquatic plants

EC50, Marine diatom (*Thalassiosira pseudonana*), 72 Hour, Growth rate, 0.005 mg/l

EC50, Algae, 96 Hour, Growth rate, 0.033 mg/l

EC50, Algae (*Selenastrum capricornutum*), 336 Hour, 0.085 mg/l

EC50, Algae, 504 Hour, 0.07 mg/l

Persistence and degradability**5-Chloro-2-methyl-4-isothiazolin-3-one**

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Not applicable

Biodegradation: 98 %

Exposure time: 2 d

Method: OECD Test Guideline 302B or Equivalent

2-Methyl-4-isothiazolin-3-one

Biodegradability: Material is expected to be readily biodegradable.

Biodegradation: 98 %

Exposure time: 48 d

Method: Simulation study

Magnesium Chloride

Biodegradability: Biodegradation is not applicable.

Magnesium nitrate

Biodegradability: No relevant data found.

Bioaccumulative potential

Partition coefficient: n-octanol/water(log Pow): 0.401 Method Not Specified.

Mobility in soil**5-Chloro-2-methyl-4-isothiazolin-3-one**

No relevant data found.

2-Methyl-4-isothiazolin-3-one

No relevant data found.

Magnesium Chloride

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient(Koc): 23.7

Magnesium nitrate

Potential for mobility in soil is very high (Koc between 0 and 50).

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Partition coefficient(Koc): 24

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Copper nitrate
No data available.

13 DISPOSAL CONSIDERATIONS

Dispose of in accordance with local regulations.

This material should be fully characterized for toxicity and possible reactivity prior to disposal (40 CFR 261). Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. Along with properly characterizing all waste materials, consult state and local regulations regarding the proper disposal of this material.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

14 TRANSPORT INFORMATION

UN3265, Corrosive liquid, acidic, organic, n.o.s., 8, PGII, (5-chloro-2-methyl-4-isothiazolin-3-one)

DOT Transportation data (49 CFR 172.101)

See section 15 of SDS for information on Reportable Quantity chemicals (RQ)

15 REGULATORY INFORMATION**Component (CAS#) [%] - CODES**

3(2H)-Isothiazolone, 5-chloro-2-methyl- (26172-55-4) [1.15-1.25%] TSCA

3(2H)-Isothiazolone, 2-methyl- (2682-20-4) [0.35-0.45%] TSCA

Magnesium chloride (MgCl₂) (7786-30-3) [1.0-1.2%] TSCA

Magnesium nitrate (10377-60-3) [1.7-1.8%] MASS, PA, TSCA

RQ(100LBS), Cupric nitrate (3251-23-8) [0.15-0.17%] CERCLA, CSWHS, EPCRAWPC, MASS, PA, TSCA

Regulatory CODE Descriptions

RQ = Reportable Quantity

TSCA = Toxic Substances Control Act

MASS = MA Massachusetts Hazardous Substances List

PA = PA Right-To-Know List of Hazardous Substances

CERCLA = Superfund clean up substance

CSWHS = Clean Water Act Hazardous substances

EPCRAWPC = EPCRA Water Priority Chemicals

TSCA: All components of this product are listed (or are not required to be listed) in the TSCA inventory

EPA / CERCLA / SARA TITLE III:

BIOTROL 102

CERCLA List: This product does not contain any CERCLA listed hazardous substances.

Toxic Chemical List (SARA 313): This product does not contain any chemicals subject to routine annual toxic chemical release reporting.

Extremely Hazardous Substance (SARA 302/304): This product does not contain any extremely hazardous substances subject to emergency planning requirements.

SARA 312: Acute

RCRA: Corrosive, D002

16**OTHER INFORMATION**

HMIS III: Health = 3, Fire = 0, Physical Hazard = 0

HMIS PPE: D - Face Shield and Eye Protection, Gloves, Apron

HMIS	
HEALTH	3
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	D

Author: U.S. Water Services

Revision Notes: Updated to GHS format

Disclaimer:

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s). The above information is not claiming characteristics of the product in term of legal claims of performance / guarantee. This information only describes safety measures and no liability may arise from the use or application of the product described herein. This information is given in good faith and based on our current knowledge of the product.

BIOTROL 407

1 PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: BIOTROL 407
Common Name: Mixture
SDS Number: 0165
Product Code: BI0034
Revision Date: 5/11/2016
Version: 2
Internal ID: 200D
Product Use: Water Treatment
Supplier Details: U.S. Water Services
12270 43rd St. NE
St. Michael, MN 55376

Contact: Non-emergency #: 866-663-7632
Email: SDS@uswaterservices.com
Web: www.uswaterservices.com

EMERGENCY RESPONSE: (ChemTel)
US & Canada: 800-255-3924
International: +01-813-248-0585

2 HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS Classification in Accordance with 29 CFR 1910 (OSHA HCS):

Health, Skin corrosion/irritation, 1 A
Health, Acute toxicity, 5 Inhalation
Health, Acute toxicity, 4 Dermal
Health, Acute toxicity, 4 Oral
Physical, Corrosive to Metals, 1

GHS Label Elements, Including Precautionary Statements

GHS Signal Word: **DANGER**

GHS Hazard Pictograms:



GHS Hazard Statements:

H314 - Causes severe skin burns and eye damage
H333 - May be harmful if inhaled
H312 - Harmful in contact with skin
H302 - Harmful if swallowed
H290 - May be corrosive to metals

GHS Precautionary Statements:

BIOTROL 407

P102 - Keep out of reach of children.

P281 - Use personal protective equipment as required.

P302+352 - IF ON SKIN: Wash with soap and water.

P305+351+338 - IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

P301+330+331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Hazards not Otherwise Classified (HNOC) or not Covered by GHS

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

Cas#	%	Chemical Name
1310-73-2	1-5%	Sodium hydroxide
1004542-84-0	15-25%	Sulfamic Acid, N-Bromo, Sodium Salt

4 FIRST AID MEASURES

- Inhalation:** Remove from contamination. If person has stopped breathing administer artificial respiration. Seek medical attention.
- Skin Contact:** Wash off with soap and plenty of water. Remove contaminated garments and wash or destroy. Seek medical attention if irritation develops. Consult a physician if irritation develops.
- Eye Contact:** Flush eyes with plenty of running water for 15 minutes. Seek medical attention.
- Ingestion:** If conscious, give plenty of water. If discomfort or other symptoms develop, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms & effects (acute & delayed): No data available

Indication of need for immediate medical attention: None

Special treatment needs: None

5 FIRE FIGHTING MEASURES

- Flash Point:** None
- Flash Point Method:** Pensky Martens Closed cup
- Burning Rate:** No data available
- Autoignition Temp:** No data available
- LEL:** Not applicable
- UEL:** Not determined.

Extinguishing Media:

Suitable: Use extinguishing media suitable for surrounding fire.

Unsuitable: No information available

Hazardous combustion products: In the event of combustion, nitrogen, bromine, hydrobromic acid vapors or gases may be formed.

Unusual Fire or Explosion Hazards: Material is a strong oxidizer. May combine with various metals (at decomposition) to form further flammable mixtures.

Special protective equipment/precautions: Wear self-contained breathing apparatus

BIOTROL 407

6 ACCIDENTAL RELEASE MEASURES

Spill/Leak procedures:

Small Spill: Wear appropriate personal protective equipment. Contain with absorbent material such as clay or inert absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Follow all Federal, State and local regulations. See Section 13 for disposal considerations.

Large Spill: Dike to prevent further movement. Recover by pumping or by using a suitable absorbent. Reclaim into recovery or salvage drums. This product can be neutralized of its halogen (active ingredient) components by sprinkling sodium metabisulfite or sodium sulfite on the spilled material. Wash site of spillage thoroughly with water. Follow all Federal, State and local regulations. See Section 13 for disposal considerations.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120)

7 HANDLING AND STORAGE

Handling Precautions: Avoid contact with eyes, skin, or clothing. Do not taste or swallow. Do not inhale vapor or mist. Use with adequate ventilation. For industrial use only!

Storage Requirements: Keep away from children. Store in closed containers away from temperature extremes and incompatible materials.
Store in properly labeled containers in accordance with all local, state and federal guidelines.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Provide local exhaust ventilation as needed to control misting.
Personal Protective Equipment: HMIS PP, D | Face Shield and Eye Protection, Gloves, Apron

Respiratory protection: If needed use MSHA/NIOSH approved respirator for dusts and mists. Seek professional advice prior to respirator selection and use. Follow all requirements of OSHA respirator regulations (29 CFR 1910.134)

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

General Hygiene: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, using the toilet, or applying cosmetics.

PPE recommendation is advisory only and based on typical use conditions. An industrial hygienist or safety officer familiar with the specific situation of anticipated use must determine actual PPE required when using this product (29 CFR 1910.132)

Exposure Limits:
OSHA (TWA)/PEL:

(Sodium Hypochlorite) OSHA/PEL 1.5 mg/m³
(Sodium Hydroxide) NIOSH/REL 2 mg/m³, OSHA/PEL
TWA 2 mg/m³

ACGIH (TWA/TLV): Not Established

BIOTROL 407

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Golden	Odor:	No appreciable odor
Physical State:	Liquid	Solubility:	Complete in water
Odor Threshold:	Not determined	Freezing/Melting Pt.:	<32°F
Spec Grav./Density:	10.68-11.01 lb/gal	Flash Point:	None
Viscosity:	Not determined	Vapor Density:	Similar to water
Boiling Point:	Not determined	Auto-Ignition Temp:	Not determined
Partition Coefficient:	Not determined	UFL/LFL:	Not determined
Vapor Pressure:	Similar to water		
pH:	>13		
Evap. Rate:	Not determined		
Decomp Temp:	Not determined		

10 STABILITY AND REACTIVITY

Reactivity:	Reactive with oxidizing agents, reducing agents, organic materials, metals, acids, and alkalis.
Chemical Stability:	Product is stable under normal storage and use conditions. Stable for up to 1 year stored under normal conditions
Conditions to Avoid:	Avoid contact with strong acids and oxidizers, incompatible materials and cold temperatures
Materials to Avoid:	Strong reducing agents such as sulfite and metabisulfite, strong acids and bases. Never mix this product with undiluted sodium hypochlorite bleach. The mixture will result in a violent exothermic reaction that produces a great deal of heat and nitrogen gas bubbles. perchlorates, concentrated oxygen, permanganates) which can generate heat, fire, explosions, and the release of toxic fumes.
Hazardous Decomposition:	Nitrogen oxides, bromine and hydrobromic acid vapors
Hazardous Polymerization:	Will not occur.

11 TOXICOLOGICAL INFORMATION

Acute Toxicity:	
Oral LD ₅₀ (albino rats):	>5,000 mg/kg
Dermal LD ₅₀ (albino rats):	>2,000 mg/kg
Inhalation LC ₅₀ (rats):	>2.13 mg/L
Skin Corrosion/Irritation:	Irritant
Serious eye damage/irritation:	Acute Irritant
Respiratory or skin sensitization:	No data available
Specific target organ toxicity (single exposure):	No data available
Specific target organ toxicity (repeated exposure):	No data available
Aspiration hazard:	No data available
Carcinogenicity:	No carcinogenic effects are known for the components of this product
Germ Cell Mutagenicity:	No mutagenic effects are known for the components of this product
Teratogenicity:	No teratogenic effects are known for the components of this product

BIOTROL 407

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ECOLOGICAL INFORMATION

Aquatic Toxicity- Results below are based on the active product (reported as Cl2).

Avian Exposure

Upland Game Birds:

Acute oral LD₅₀: > 2,510 mg/kg

Subacute Dietary LC₅₀: > 5,000 mg/kg

Aquatic Data

Cold Water Fish, acute toxicity, LC₅₀: 1.35 ppm (max- 96hr)

Warm Water Fish, acute toxicity, LC₅₀: 2.1 ppm (max-96 hr)

Invertebrate (D. magna), acute toxicity, LC₅₀: 2.3 ppm (max-48 hr)

Elimination (persistence & degradability): No data available

Bioaccumulative potential: No data available

Mobility in soil: No data available

Other adverse effects: No data available Inhalation

13

DISPOSAL CONSIDERATIONS

Dispose of in accordance with local regulations.

This material should be fully characterized for toxicity and possible reactivity prior to disposal (40 CFR 261). Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. Along with properly characterizing all waste materials, consult state and local regulations regarding the proper disposal of this material.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

14

TRANSPORT INFORMATION

UN1760, Corrosive liquids, n.o.s., 8, PGIII, (Sodium Hydroxide, Sodium Bromide)

DOT Transportation data (49 CFR 172.101)

See section 15 of SDS for information on Reportable Quantity chemicals (RQ)

15

REGULATORY INFORMATION

Component (CAS#) [%] - CODES

RQ(1000LBS), Sodium hydroxide (1310-73-2) [1-5%] CERCLA, CSWHS, MASS, OSHAWAC, PA, TSCA, TXAIR

Regulatory CODE Descriptions

RQ = Reportable Quantity

CERCLA = Superfund clean up substance

CSWHS = Clean Water Act Hazardous substances

MASS = MA Massachusetts Hazardous Substances List

OSHA WAC = OSHA Workplace Air Contaminants

PA = PA Right-To-Know List of Hazardous Substances

TSCA = Toxic Substances Control Act

BIOTROL 407

TXAIR = TX Air Contaminants with Health Effects Screening Level

TSCA: All components of this product are listed (or are not required to be listed) in the TSCA inventory

EPA / CERCLA / SARA TITLE III:

Toxic Chemical List (SARA 313): This product does not contain any chemicals subject to routine annual toxic chemical release reporting.

Extremely Hazardous Substance (SARA 302/304): This product does not contain any extremely hazardous substances subject to emergency planning requirements.

SARA 312: Acute

RCRA: Corrosive, D002

California Proposition 65: This product does not contain any proposition 65 chemicals.

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OTHER INFORMATION

HMIS III: Health = 2, Fire = 0, Physical Hazard = 0

HMIS PPE: D - Face Shield and Eye Protection, Gloves, Apron

HMIS	
HEALTH	2
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	D

Author: U.S. Water Services

Revision Notes: Updated to GHS format

Disclaimer:

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s). The above information is not claiming characteristics of the product in term of legal claims of performance / guarantee. This information only describes safety measures and no liability may arise from the use or application of the product described herein. This information is given in good faith and based on our current knowledge of the product.

TOWER MP 636

1 PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: TOWER MP 636
Common Name: Mixture
SDS Number: 0218
Product Code: CT0086
Revision Date: 4/10/2015
Version: 2
Product Use: Water Treatment
Supplier Details: U. S. Water Services
12270 43rd St. NE
St. Michael, MN 55376

Contact: Non-emergency #: 866-663-7632
Email: SDS@uswaterservices.com
Web: www.uswaterservices.com

EMERGENCY RESPONSE: (ChemTel)
US & Canada: 800-255-3924
International: +01-813-248-0585

2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):

Health, Skin corrosion/irritation, 2
Health, Serious Eye Damage/Eye Irritation, 2 B
Health, Skin corrosion/irritation, 1 C
Health, Acute toxicity, 5 Inhalation

GHS Label elements, including precautionary statements

GHS Signal Word: **DANGER**

GHS Hazard Pictograms:



GHS Hazard Statements:

H315 - Causes skin irritation
H320 - Causes eye irritation
H314 - Causes severe skin burns and eye damage
H333 - May be harmful if inhaled

GHS Precautionary Statements:

P102 - Keep out of reach of children.
P281 - Use personal protective equipment as required.
P302+352 - IF ON SKIN: Wash with soap and water.
P305+351+338 - IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if

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present and easy to do. Continue rinsing.

Hazards not otherwise classified (HNOC) or not covered by GHS

PPE recommendation is advisory only and based on typical use conditions. An industrial hygienist or safety officer familiar with the specific situation of anticipated use must determine actual PPE required when using this product (29 CFR 1910.132)

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

Cas#	%	Chemical Name
1310-73-2	12.5	Sodium hydroxide
97953-25-8	10-15	2-Propenoic acid, telomer with 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid monosodium salt and sodium hydrogen sulfite, sodium salt
37971-36-1	5-10	1,2,4-Butanetricarboxylic acid, 2-phosphono-
64665-57-2	5-10	1H-Benzotriazole, 4(or 5)-methyl-, sodium salt
2809-21-4	4-8	Phosphonic acid, (1-Hydroxyethylidene) Bis-(HEDP)

4 FIRST AID MEASURES

- Inhalation:** Remove from contamination. If person has stopped breathing administer artificial respiration. Seek medical attention.
- Skin Contact:** Wash off with soap and plenty of water. Remove contaminated garments and wash or destroy. Seek medical attention if irritation develops. Consult a physician if irritation develops.
- Eye Contact:** Flush eyes with plenty of running water for several minutes. Seek medical attention.
- Ingestion:** If conscious, give plenty of water. If discomfort or other symptoms develop, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms & effects (acute & delayed): No data available

Indication of need for immediate medical attention: No data available

Special treatment needs: No data available

5 FIRE FIGHTING MEASURES

- Flammability:** Not flammable
- Flash Point:** None
- Flash Point Method:** Pensky Martens Closed cup
- Burning Rate:** No data available
- Autoignition Temp:** No data available
- LEL:** Not applicable
- UEL:** Not applicable

Extinguishing Media:

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Suitable: Use extinguishing media suitable for surrounding fire.

Unsuitable: No information available

Hazardous combustion products: Hazardous decomposition products formed under fire conditions- Carbon oxides, and other hazardous compounds

Unusual Fire or Explosion Hazards: None known

Special protective equipment/precautions: Wear self-contained breathing apparatus

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective equipment, emergency procedures: Avoid contact with the material. See section 8 for PPE recommendations

Environmental Precautions: Keep runoff from entering drains or waterways

Spill/Leak procedures: Contain spill or leak. Dike area if necessary to prevent spill from spreading or entering sewers and waterways. Recover as much as possible then absorb remainder with inert material. Place into closed container for disposal.

Regulatory Requirements: Dispose of recovered material in accordance with all applicable state and federal regulations.

7 HANDLING AND STORAGE

Handling Precautions: Avoid contact with eyes, skin, or clothing. Do not taste or swallow. Do not inhale vapor or mist. Use with adequate ventilation. For industrial use only!

Storage Requirements: Keep away from children. Store in closed containers away from temperature extremes and incompatible materials.

Store in properly labeled containers in accordance with all local, state and federal guidelines.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Provide local exhaust ventilation as needed to control misting.

Personal Protective Equipment: HMIS PP, C | Safety Glasses, Gloves, Apron

Respiratory protection: Not required under normal use conditions. If needed use MSHA/NIOSH approved respirator for dusts and mists. Seek professional advice prior to respirator selection and use. Follow all requirements of OSHA respirator regulations (29 CFR 1910.134)

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

General Hygiene: Never eat, drink, or smoke in work areas. Practice good personal

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hygiene after using this material, especially before eating, drinking, using the toilet, or applying cosmetics.

PPE recommendation is advisory only and based on typical use conditions. An industrial hygienist or safety officer familiar with the specific situation of anticipated use must determine actual PPE required when using this product (29 CFR 1910.132)

Exposure Limits:

USA OSHA (TWA5)/PEL: Sodium Hydroxide 2 mg/m³

NIOSH (REL): Sodium Hydroxide 2 mg/m³ (C)

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Amber	Odor:	Acridic
Physical State:	Liquid	Solubility:	Complete in water
Odor Threshold:	Not determined	Freezing/Melting Pt.:	18°F
Spec Grav./Density:	10.5 lb/gal	Flash Point:	None
Viscosity:	Not determined	Vapor Density:	Not determined
Boiling Point:	Similar to water	Auto-Ignition Temp:	Not determined
Partition Coefficient:	Not determined	UFL/LFL:	Not determined
Vapor Pressure:	Not determined		
pH:	12-13		
Evap. Rate:	Not determined		
Decomp Temp:	Not determined		

10 STABILITY AND REACTIVITY

Stability:	Product is stable under normal storage and use conditions.
Conditions to Avoid:	Avoid temperature extremes. Protect from freezing
Materials to Avoid:	Strong Oxidizing Agents may cause exothermic reaction, Strong Acids
Hazardous Decomposition:	Thermal decomposition may produce carbon oxides and other toxic compounds.
Hazardous Polymerization:	Will not occur.

11 TOXICOLOGICAL INFORMATION

Acute Toxicity: No data available
Skin Corrosion/Irritation: No data available
Serious eye damage/irritation: No data available
Respiratory or skin sensitization: No data available
Specific target organ toxicity (single exposure): No data available
Specific target organ toxicity (repeated exposure): No data available
Aspiration hazard: No data available
Carcinogenicity: No carcinogenic effects are known for the components of this product
Germ Cell Mutagenicity: No mutagenic effects are known for the components of this product
Teratogenicity: No teratogenic effects are known for the components of this product

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12**ECOLOGICAL INFORMATION**

Aquatic Toxicity No data available

Elimination (persistence & degradability): No data available

Bioaccumulative potential: No data available

Mobility in soil: No data available

Other adverse effects: No data available

13**DISPOSAL CONSIDERATIONS**

Dispose of in accordance with local regulations.

This material should be fully characterized for toxicity and possible reactivity prior to disposal (40 CFR 261). Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. Along with properly characterizing all waste materials, consult state and local regulations regarding the proper disposal of this material.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

14**TRANSPORT INFORMATION**

UN1760, Corrosive liquids, n.o.s., 8, PGIII, (Sodium Hydroxide)

DOT Transportation data (49 CFR 172.101)

See section 15 of SDS for information on Reportable Quantity chemicals (RQ)

15**REGULATORY INFORMATION**

Component (CAS#) [%] - CODES

RQ(1000LBS), Sodium hydroxide (1310-73-2) [12.5] CERCLA, CSWHS, MASS, OSHAWAC, PA, TSCA, TXAIR

2-Propenoic acid, telomer with 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid monosodium salt and sodium hydrogen sulfite, sodium salt (97953-25-8) [10-15] TSCA

1,2,4-Butanetricarboxylic acid, 2-phosphono- (37971-36-1) [5-10] TSCA

1H-Benzotriazole, 4(or 5)-methyl-, sodium salt (64665-57-2) [5-10] TSCA

Phosphonic acid, (1-Hydroxyethylidene) Bis-(HEDP) (2809-21-4) [4-8] TSCA

Regulatory CODE Descriptions

RQ = Reportable Quantity

CERCLA = Superfund clean up substance

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CSWHS = Clean Water Act Hazardous substances

MASS = MA Massachusetts Hazardous Substances List

OSHA WAC = OSHA Workplace Air Contaminants

PA = PA Right-To-Know List of Hazardous Substances

TSCA = Toxic Substances Control Act

TXAIR = TX Air Contaminants with Health Effects Screening Level

TSCA: All components of this product are listed (or are not required to be listed) in the TSCA inventory

EPA / CERCLA / SARA TITLE III:

Toxic Chemical List (SARA 313): This product does not contain any chemicals subject to routine annual toxic chemical release reporting.

Extremely Hazardous Substance (SARA 302/304): This product does not contain any extremely hazardous substances subject to emergency planning requirements.

SARA 312: No data available

RCRA: No data available

16**OTHER INFORMATION**

HMIS III: Health = 2, Fire = 0, Physical Hazard = 0

HMIS PPE: C - Safety Glasses, Gloves, Apron

HMIS	
HEALTH	2
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	C

Author: U.S. Water Services

Revision Notes: Updated to GHS format

Disclaimer:

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s). The above information is not claiming characteristics of the product in term of legal claims of performance / guarantee. This information only describes safety measures and no liability may arise from the use or application of the product described herein. This information is given in good faith and based on our current knowledge of the product.

TOWERCLEAN 819**1 PRODUCT AND COMPANY IDENTIFICATION**

Product Identifier: TOWERCLEAN 819
Common Name: MIXTURE
SDS Number: 0436
Revision Date: 4/29/2015
Version: 2
Internal ID: 200C
Product Use: WATER TREATMENT
Supplier Details: U. S. Water Services
12270 43rd St. NE
St. Michael, MN 55376

Contact: Non-emergency #: 866-663-7632
Email: SDS@uswaterservices.com
Web: www.uswaterservices.com

EMERGENCY RESPONSE: (ChemTel)
US & Canada: 800-255-3924
International: +01-813-248-0585

2 HAZARDS IDENTIFICATION**Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):**

Health, Acute toxicity, 4 Oral
Health, Acute toxicity, 5 Inhalation
Health, Skin corrosion/irritation, 1 B
Health, Specific target organ toxicity - Single exposure, 3

GHS Label elements, including precautionary statements

GHS Signal Word: **DANGER**

GHS Hazard Pictograms:**GHS Hazard Statements:**

H302 - Harmful if swallowed
H333 - May be harmful if inhaled
H314 - Causes severe skin burns and eye damage
H335 - May cause respiratory irritation

GHS Precautionary Statements:

P281 - Use personal protective equipment as required.
P302+352 - IF ON SKIN: Wash with soap and water.
P305+351+338 - IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

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P301+330+331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P315 - Get immediate medical advice/attention.

Hazards not otherwise classified (HNOC) or not covered by GHS

PPE recommendation is advisory only and based on typical use conditions. An industrial hygienist or safety officer familiar with the specific situation of anticipated use must determine actual PPE required when using this product (29 CFR 1910.132)

3 COMPOSITION/INFORMATION ON INGREDIENTS**Ingredients:**

Cas#	%	Chemical Name
10101-89-0	6%	Trisodium Phosphate Dodecahydrate
64665-57-2	10-20%	1H-Benzotriazole, 4(or 5)-methyl-, sodium salt

4 FIRST AID MEASURES

Inhalation: Remove from contamination. If symptoms persist, seek medical attention.

Skin Contact: Wash off with soap and plenty of water. Consult a physician if irritation develops.

Eye Contact: Flush eyes with plenty of running water at least 15 minutes. Seek immediate medical attention.

Ingestion: Drink several glasses of water. Seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms & effects (acute & delayed): No data available

Indication of need for immediate medical attention: No data available

Special treatment needs: No data available

5 FIRE FIGHTING MEASURES

Flammability: Nonflammable

Flash Point: Nonflammable

Flash Point Method: Pensky Martens Closed cup

Burning Rate: No data available

Autoignition Temp: No data available

LEL: Not applicable

UEL: Not applicable

Extinguishing Media:

Suitable: Use extinguishing media suitable for surrounding fire.

Unsuitable: No information available

Hazardous combustion products: Hazardous decomposition products formed under fire conditions- Carbon oxides, and other hazardous compounds

Unusual Fire or Explosion Hazards: None known

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Special protective equipment/precautions: Wear self-contained breathing apparatus

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective equipment, emergency procedures: Avoid contact with the material. See section 8 of SDS for PPE recommendations

Environmental Precautions: Keep runoff from entering drains or waterways

Spill/Leak procedures: Spill may be slippery. Contain spill or leak. Dike area if necessary to prevent spill from spreading or entering sewers and waterways. Recover as much as possible then absorb remainder with inert material. Place into closed container for disposal.

Regulatory Requirements: Dispose of recovered material in accordance with all applicable state and federal regulations.

7 HANDLING AND STORAGE

Handling Precautions: Avoid contact with eyes, skin, or clothing. Do not taste or swallow. Do not inhale vapor or mist. Use with adequate ventilation. For industrial use only!

Storage Requirements: Store in closed containers away from temperature extremes and incompatible materials. Store in properly labeled containers in accordance with all local, state and federal guidelines.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Provide local exhaust ventilation as needed to control misting.

Personal Protective Equipment: HMIS PP, C | Safety Glasses, Gloves, Apron

Respiratory protection: Not required under normal use conditions. If needed use MSHA/NIOSH approved respirator. Seek professional advice prior to respirator selection and use. Follow all requirements of OSHA respirator regulations (29 CFR 1910.134)

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

General Hygiene: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, using the toilet, or applying cosmetics.

PPE recommendation is advisory only and based on typical use conditions. An industrial hygienist or safety officer familiar with the specific situation of anticipated use must determine actual PPE required when using this product (29 CFR 1910.132)

Exposure Limits:

OSHA (TWA)/PEL: Not Established

ACGIH (TWA/TLV): Not Established

TOWERCLEAN 819**9 PHYSICAL AND CHEMICAL PROPERTIES**

Appearance:	Clear to yellow	Odor:	Sweet odor
Physical State:	Liquid	Solubility:	Complete in water
Odor Threshold:	No data available	Freezing/Melting Pt.:	22°F
Particle Size:	No data available	Flash Point:	No data available
Spec Grav./Density:	9.84 lb/gal	Vapor Density:	Same as water
Viscosity:	No data available	Auto-Ignition Temp:	No data available
Boiling Point:	No data available	UFL/LFL:	No data available
Partition Coefficient:	No data available		
Vapor Pressure:	Same as water		
pH:	11.5-12.5		
Evap. Rate:	Not Determined		
Decomp Temp:	No data available		

10 STABILITY AND REACTIVITY

Stability:	Product is stable under normal storage and use conditions.
Conditions to Avoid:	Avoid temperature extremes. Protect from freezing
Materials to Avoid:	Strong Oxidizing Agents may cause exothermic reaction
Hazardous Decomposition:	Thermal decomposition may produce carbon oxides and other toxic compounds.
Hazardous Polymerization:	Will not occur.

11 TOXICOLOGICAL INFORMATION

Acute Toxicity: No data available
Skin Corrosion/Irritation: No data available
Serious eye damage/irritation: No data available
Respiratory or skin sensitization: No data available
Germ cell mutagenicity: No data available
Carcinogenicity: No components listed as a carcinogen
Reproductive Toxicity: No data available
Specific target organ toxicity (single exposure): No data available
Specific target organ toxicity (repeated exposure): No data available
Aspiration hazard: No data available

12 ECOLOGICAL INFORMATION**Aquatic Toxicity**

Ceriodaphnia (Water Flea) Acute LC₅₀ 24 hr >1000 mg/L; Acute LC₅₀ 48 hr >1000 mg/L; Acute NOEC 48 hr 1000 mg/L

Fathead Minnow Acute LC₅₀ 24 hr >1000 mg/L; Acute LC₅₀ 48 hr >1000 mg/L; Acute LC₅₀ 72 hr >1000 mg/L; Acute LC₅₀ 96 hr >1000 mg/L; Acute NOEC 96 hr 1000 mg/L

Elimination (persistence & degradability): No data available

Bioaccumulative potential: No data available

Mobility in soil: No data available

Other adverse effects: No data available

TOWERCLEAN 819**13 DISPOSAL CONSIDERATIONS**

Dispose of in accordance with local regulations.

This material should be fully characterized for toxicity and possible reactivity prior to disposal (40 CFR 261). Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. Along with properly characterizing all waste materials, consult state and local regulations regarding the proper disposal of this material.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

14 TRANSPORT INFORMATION

UN1760, Corrosive liquids, n.o.s., 8, PGII, (Trisodium Phosphate, Sodium Tolytriazole)

DOT Transportation data (49 CFR 172.101)

See section 15 of SDS for information on Reportable Quantity chemicals (RQ)

15 REGULATORY INFORMATION**Component (CAS#) [%] - CODES**

RQ(5000LBS), Trisodium Phosphate Dodecahydrate (10101-89-0) [6] CERCLA

1H-Benzotriazole, 4(or 5)-methyl-, sodium salt (64665-57-2) [10-20] TSCA

Regulatory CODE Descriptions

RQ = Reportable Quantity

CERCLA = Superfund clean up substance

TSCA = Toxic Substances Control Act

TSCA: All components of this product are listed (or are not required to be listed) in the TSCA inventory

EPA / CERCLA / SARA TITLE III:

Toxic Chemical List (SARA 313): This product does not contain any chemicals subject to routine annual toxic chemical release reporting.

Extremely Hazardous Substance (SARA 302/304): This product does not contain any extremely hazardous substances subject to emergency planning requirements.

SARA 312: Acute

RCRA: Corrosive, D002

TOWERCLEAN 819**16****OTHER INFORMATION**

HMIS III: Health = 2, Fire = 0, Physical Hazard = 0

HMIS PPE: C - Safety Glasses, Gloves, Apron

HMIS		
HEALTH	<input type="checkbox"/>	2
FLAMMABILITY		0
PHYSICAL HAZARD		0
PERSONAL PROTECTION	<input type="checkbox"/>	C

Author: U.S. Water Services**Revision Notes:** Updated to GHS format**Disclaimer:**

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TOWERCLEAN 820**1 PRODUCT AND COMPANY IDENTIFICATION**

Product Identifier: TOWERCLEAN 820
Common Name: MIXTURE
SDS Number: 0592
Revision Date: 5/6/2015
Version: 1
Internal ID: 200C
Product Use: WATER TREATMENT
Supplier Details: U. S. Water Services
12270 43rd St. NE
St. Michael, MN 55376

Contact: Non-emergency #: 866-663-7632
Email: SDS@uswaterservices.com
Web: www.uswaterservices.com

EMERGENCY RESPONSE: (ChemTel)
US & Canada: 800-255-3924
International: +01-813-248-0585

2 HAZARDS IDENTIFICATION**Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):**

Health, Acute toxicity, 4 Oral
Health, Acute toxicity, 5 Inhalation
Health, Serious Eye Damage/Eye Irritation, 2 A
Health, Skin corrosion/irritation, 2

GHS Label elements, including precautionary statements

GHS Signal Word: **WARNING**

GHS Hazard Pictograms:**GHS Hazard Statements:**

H302 - Harmful if swallowed
H333 - May be harmful if inhaled
H319 - Causes serious eye irritation
H315 - Causes skin irritation

GHS Precautionary Statements:

P281 - Use personal protective equipment as required.
P302+352 - IF ON SKIN: Wash with soap and water.
P305+351+338 - IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

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P301+330+331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P315 - Get immediate medical advice/attention.

Hazards not otherwise classified (HNOC) or not covered by GHS

PPE recommendation is advisory only and based on typical use conditions. An industrial hygienist or safety officer familiar with the specific situation of anticipated use must determine actual PPE required when using this product (29 CFR 1910.132)

3 COMPOSITION/INFORMATION ON INGREDIENTS**Ingredients:**

Cas#	%	Chemical Name
10101-89-0	4-7%	Trisodium Phosphate Dodecahydrate
7320-34-5	10-15%	Diphosphoric acid, tetrapotassium salt
97953-25-8	<3%	2-Propenoic acid, telomer with
		2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid monosodium salt and sodium hydrogen sulfite, sodium salt

4 FIRST AID MEASURES

- Inhalation:** Remove from contamination. If person has stopped breathing give artificial respiration. Seek medical attention.
- Skin Contact:** Flush affected area with running water. Continue rinsing until slippery feeling is gone. Remove contaminated garments and wash or destroy. If irritation or redness persists seek medical attention.
- Eye Contact:** Flush eyes with plenty of running water at least 15 minutes. Seek immediate medical attention.
- Ingestion:** Drink several glasses of water. Seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms & effects (acute & delayed): No data available

Indication of need for immediate medical attention: No data available

Special treatment needs: No data available

5 FIRE FIGHTING MEASURES

- Flammability:** Nonflammable
- Flash Point:** None
- Burning Rate:** No data available
- Autoignition Temp:** No data available
- LEL:** Not applicable
- UEL:** Not applicable

Extinguishing Media:

Suitable: Use extinguishing media suitable for surrounding fire.

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Unsuitable: No information available

Hazardous combustion products: Thermal decomposition as in fire conditions may produce carbon monoxide, carbon dioxide, oxides of sulfur and/or nitrogen, acrylic monomers.

Unusual Fire or Explosion Hazards: None known

Special protective equipment/precautions: Wear self-contained breathing apparatus

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective equipment, emergency procedures: Avoid contact with the material. See section 8 of SDS for PPE recommendations

Environmental Precautions: Keep runoff from entering drains or waterways

Spill/Leak procedures: Spill may be slippery. Contain spill or leak. Dike area if necessary to prevent spill from spreading or entering sewers and waterways. Recover as much as possible then absorb remainder with inert material. Place into closed container for disposal.

Regulatory Requirements: Dispose of recovered material in accordance with all applicable state and federal regulations.

7 HANDLING AND STORAGE

Handling Precautions: Avoid contact with eyes, skin, or clothing. Do not taste or swallow. Do not inhale vapor or mist. Use with adequate ventilation. For industrial use only!

Storage Requirements: Store in closed containers away from temperature extremes and incompatible materials. Store in properly labeled containers in accordance with all local, state and federal guidelines.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Provide local exhaust ventilation as needed to control misting.

Personal Protective Equipment: HMIS PP, C | Safety Glasses, Gloves, Apron

Respiratory protection: If needed use MSHA/NIOSH approved respirator. Seek professional advice prior to respirator selection and use. Follow all requirements of OSHA respirator regulations (29 CFR 1910.134)

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

General Hygiene: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, using the toilet, or applying cosmetics.

PPE recommendation is advisory only and based on typical use conditions. An industrial hygienist or safety officer familiar with the specific situation of anticipated use must determine actual PPE required when using this product (29 CFR 1910.132)

Exposure Limits:	Tetrapotassium Pyrophosphate	Trisodium Phosphate
OSHA (TWA) PEL:	15 mg/m ³	15 mg/m ³
ACGIH (TWA) TLV:	10 mg/m ³	10 mg/m ³

TOWERCLEAN 820**9 PHYSICAL AND CHEMICAL PROPERTIES**

Appearance:	Clear, colorless to light yellow	Odor:	Sweet
Physical State:	Liquid	Solubility:	Complete in water
Odor Threshold:	No data available	Freezing/Melting Pt.:	28°F
Spec Grav./Density:	9.84 lb/gal	Flash Point:	None
Viscosity:	No data available	Vapor Density:	Same as water
Boiling Point:	Not determined	Auto-Ignition Temp:	No data available
Partition Coefficient:	No data available	UFL/LFL:	No data available
Vapor Pressure:	Same as water		
pH:	11-12		
Evap. Rate:	Not Determined		
Decomp Temp:	No data available		

10 STABILITY AND REACTIVITY

Stability:	Product is stable under normal storage and use conditions.
Conditions to Avoid:	Avoid temperature extremes. Protect from freezing
Materials to Avoid:	Strong acids.
Hazardous Decomposition:	Thermal decomposition as in fire conditions may produce carbon monoxide, carbon dioxide, oxides of sulfur and/or nitrogen, acrylic monomers.
Hazardous Polymerization:	Will not occur.

11 TOXICOLOGICAL INFORMATION

Acute Toxicity: No data available
Skin Corrosion/Irritation: No data available
Serious eye damage/irritation: No data available
Respiratory or skin sensitization: No data available
Germ cell mutagenicity: No data available
Carcinogenicity: No components listed as a carcinogen
Reproductive Toxicity: No data available
Specific target organ toxicity (single exposure): No data available
Specific target organ toxicity (repeated exposure): No data available
Aspiration hazard: No data available

12 ECOLOGICAL INFORMATION

Aquatic Toxicity:

Ceriodaphnia (Water Flea)	Acute LC ₅₀ 24 hr	>1000 mg/L
	Acute LC ₅₀ 48 hr	>1000 mg/L
	Acute NOEC 48 hr	1000 mg/L
Fathead Minnow	Acute LC ₅₀ 24 hr	>1000 mg/L
	Acute LC ₅₀ 96 hr	>1000 mg/L
	Acute NOEC 96 hr	1000 mg/L

Elimination (persistence & degradability): No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available

TOWERCLEAN 820

Other adverse effects: No data available

13 DISPOSAL CONSIDERATIONS

Dispose of in accordance with local regulations.

This material should be fully characterized for toxicity and possible reactivity prior to disposal (40 CFR 261). Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. Along with properly characterizing all waste materials, consult state and local regulations regarding the proper disposal of this material.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

14 TRANSPORT INFORMATION

UN1760, Corrosive liquids, n.o.s., 8, PGIII, (Trisodium phosphate, Tetrapotassium pyrophosphate)

DOT Transportation data (49 CFR 172.101)

See section 15 of SDS for information on Reportable Quantity chemicals (RQ)

15 REGULATORY INFORMATION**Component (CAS#) [%] - CODES**

RQ(5000LBS), Trisodium Phosphate Dodecahydrate (10101-89-0) [4-7%] CERCLA

Diphosphoric acid, tetrapotassium salt (7320-34-5) [10-15%] TSCA

2-Propenoic acid, telomer with 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid monosodium salt and sodium hydrogen sulfite, sodium salt (97953-25-8) [<3%] TSCA

Regulatory CODE Descriptions

CERCLA = Superfund clean up substance

TSCA = Toxic Substances Control Act

TSCA: All components of this product are listed (or are not required to be listed) in the TSCA inventory

EPA / CERCLA / SARA TITLE III:

Toxic Chemical List (SARA 313): This product does not contain any chemicals subject to routine annual toxic chemical release reporting.

Extremely Hazardous Substance (SARA 302/304): This product does not contain any extremely hazardous substances subject to emergency planning requirements.

SARA 312: Acute

California Proposition 65: This product does not contain any chemicals known to the state of California to cause cancer, birth defects, or any other reproductive harm.

RCRA: Corrosive, D002

TOWERCLEAN 820**16****OTHER INFORMATION**

HMIS III: Health = 2, Fire = 0, Physical Hazard = 0
HMIS PPE: C - Safety Glasses, Gloves, Apron

HMIS	
HEALTH	2
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	C

Author: U.S. Water Services

Revision Notes: Updated to GHS format

Disclaimer:

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s). The above information is not claiming characteristics of the product in term of legal claims of performance / guarantee. This information only describes safety measures and no liability may arise from the use or application of the product described herein. This information is given in good faith and based on our current knowledge of the product.

Victaulic® Lubricant MSDS (Material Safety Data Sheet)

ANSI/NSF Standard 61

SECTION I – PRODUCT IDENTIFICATION

Trade Name: Vic Lube

CAS Number: N/A

Technical Contact: 1-610-559-3300

CHEMTREC Emergency (US Only): 1-800-262-8200

SECTION II – COMPOSITION

Hazardous Components (Specific Chemical Identity; Common Name(s))	CAS#	OSHA PEL	NIOSH REL	%
Soap Blend	61790-44-1	None established	None established	>1%
Mineral Filler	12001-26-2	TWA 20 mppcf	TWA 3 mg/m3 (resp)	>1%
Glycol	57-55-6	None established	None established	1-6

SECTION III – HAZARDS IDENTIFICATION

Overview*

Primary Entry Routes: Not hazardous

Carcinogenicity: IARC, NTP, and OSHA do not list the ingredients in this product as carcinogens

Health Rankings

	HMIS	NFPA
Health Hazard	1	1
Fire Hazard	0	0
Reactivity	0	0

SECTION IV – FIRST AID MEASURES

Take proper precautions to ensure your own health and safety before attempting to rescue or provide first aid.

Eye Contact: Flush with water for 15 minutes while holding eyelids open

Skin Contact: Wash with water
If irritation persists, call a physician

JOB/OWNER

System No. _____

Location _____

CONTRACTOR

Submitted By _____

Date _____

ENGINEER

Spec Sect _____ Para _____

Approved _____

Date _____

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Victaulic® Lubricant MSDS (Material Safety Data Sheet)

SECTION V – FIRE FIGHTING MEASURES

NFPA Flammability Classification: 0

Flash Point: >220°F; > 104°C

Method Used: N/A contains water

Flammable Limits

LEL: N/A

UEL: N/A

Extinguishing Media: Water, fog, alcohol foam, carbon dioxide or dry chemical are all suitable.

Special Fire Fighting Procedures: Do not release runoff from fire control methods to sewers or waterways.

Fire Fighting Equipment : Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode.

SECTION VI – ACCIDENTAL RELEASE MEASURES

Spill/Leak Procedures: This product is a biodegradable soap.

Containment: For large spills, dyke far ahead of spill for later disposal

Cleanup: Follow all applicable local, state and federal regulations.

Regulatory Requirements: Follow applicable OSHA regulations

SECTION VII – HANDLING & STORAGE

Handling: No special precautions are required.

Storage: No special precautions are required.

SECTION VIII – EXPOSURE CONTROLS & PERSONAL PROTECTION

Personal Protective Equipment

Eye Protection: Wear protective safety glasses or chemical safety goggles per 29 CFR 1910.133

Hand Protection: Wear chemically protective gloves

Respiratory Protection: If respirators are used follow all OSHA regulations

Ventilation: Provide general or local exhaust ventilation systems

General Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material.

Victaulic® Lubricant MSDS (Material Safety Data Sheet)

SECTION IX – PHYSICAL & CHEMICAL PROPERTIES

Boiling Point: >220°F; >104°C

Vapor Pressure (mm Hg.): N/A

Vapor Density (AIR = 1): N/A

Specific Gravity (H₂O = 1): 1.0

Melting Point: <32°F; < 0°C

Evaporation Rate (Butyl Acetate = 1): N/A

Solubility in Water: Completely

Appearance and Odor: Amber paste, bland odor

SECTION X – STABILITY & REACTIVITY

Stability: Stable

Conditions to Avoid:

Incompatibility (Materials to Avoid):: Strong oxidizing agents

Hazardous Decomposition or Byproducts: Oxides of carbon and nitrogen

Hazardous Polymerization: Will Not Occur

SECTION XI – TOXICOLOGICAL INFORMATION

Eye Effects: Eye irritant

Skin Effects: Slight skin irritant if allowed to remain in contact

For other health related information refer to Section III Hazard Identification.

SECTION XII – ECOLOGICAL INFORMATION

Ecotoxicity: N/A

Environmental Fate: N/A

Victaulic® Lubricant MSDS (Material Safety Data Sheet)

SECTION XIII – DISPOSAL CONSIDERATIONS Hazard characteristics and regulatory waste stream classification can change with product use. Accordingly, it is the responsibility of the user to determine proper storage, transportation, treatment and/or disposal methodologies for spent materials and residues at the time of disposition.

SECTION XIV – TRANSPORT INFORMATION The user must check with all local, state and federal regulatory requirements.
IMDG Classification (International Maritime Dangerous Goods [transportation]): This product is not regulated by IMDG.
ICAO (International Civil Aviation Organization)/IATA (International Air Transport Association) Classification: This product is not regulated by the ICAO/IATA.
Not hazardous under US-DOT (Department of Transportation [USA]) regulations

SECTION XV – REGULATORY INFORMATION **TSCA Inventory:** The user must check with all regulatory requirements.

SECTION XVI – OTHER INFORMATION

Revision Information

Version Number: 05.02 Rev. E

Revision Date: May 27, 2008

Previous Revision: 05.02 Rev. D – 2005

Abbreviations

>: Greater Than

<: Less Than

ACGIH: American Conference of Industrial Hygienists

AIHA: American Industrial Hygiene Association

AP: Approximately

EPA: US Environmental Protection Agency

EQ: Equal

HMIS: Hazardous Materials Information System

IARC: International Agency for Research on Cancer

NA: Not Applicable

ND: No Data

NE: Not Established

NFPA: National Fire Protection Association

NIOSH: National Institute of Occupational Safety & Health

NPCA: National Paint and Coatings Association

NTP: National Toxicology Program

OSHA: Occupational Safety & Health Administration

TSCA: Toxic Substances Control Act

References

*American Foundry Association (Section III Overview) NIOSH Pocket Guide to Chemical Hazards

Disclaimer of Liability

The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied regarding its correctness. Some information presented and conclusions drawn herein may be from sources other than direct test data on the substance itself. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable. Users should make their own investigations to determine the suitability of the information or products for their particular purpose.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with handling, storage, use or disposal of the product.

For complete contact information, visit www.victaulic.com

05.02 1941 REV F UPDATED 6/2010

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05.02





VI·JON®

Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name: Alcohol 70% Isopropyl
Item Number: 810AA

Other means of identification

Synonyms: None

Recommended use of the chemical and restrictions on use

Recommended Use: First Aid
Uses advised against: No information available

Details of the supplier of the safety data sheet

Supplier Address

Vi-Jon Inc.
8800 Page Avenue
Saint Louis
MO
63114
US
Phone: 314-427-1000 (M-F 8am-4pm CST)
Fax: 314-427-1010

Emergency telephone number Chemtrec: 1-800-424-9300 (24-Hour)

Product Number: 810AA
Issuing Date: November 4, 2014

Revision Date: None

Product Name: Alcohol 70% Isopropyl
Revision Number: 0

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC)

Not Applicable

Unknown Toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity

Other information

Prolonged or repeated contact may dry skin and cause irritation

Interactions with Other Chemicals

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %	Trade Secret
70% Isopropyl Alcohol by volume	67-63-0	50-100	*
Water	7732-18-5	10-50	*

* The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if applicable, and continue flushing. If symptoms persist, call a physician.

Skin Contact

In the case of skin irritation or allergic reactions see a physician.

Inhalation

Move to fresh air. If symptoms persist, call a physician.

Ingestion

Do NOT induce vomiting. Clean mouth with water and afterwards drink plenty of water. Never give anything by mouth to an unconscious person. Consult a physician.

Protection of First-aiders

Use personal protective equipment. Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. For personal protection see Section 8.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms/Effects Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Dry chemical. Carbon dioxide (CO₂). Water spray. Alcohol-resistant foam.

Unsuitable Extinguishing Media

Do not use a solid water stream as it may scatter and spread fire.

Specific Hazards Arising from the Chemical

Keep product and empty container away from heat and sources of ignition. Risk of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations

Uniform Fire Code

Flammable Liquid: I-B
Irritant: Liquid

Hazardous Combustion Products

Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact No

Sensitivity to Static Discharge Yes

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Move containers from fire area if you can do it without risk.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions

Ensure adequate ventilation. Use personal protective equipment. Evacuate personnel to safe areas. Refer to Section 8 Avoid contact with skin, eyes and clothing. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.

Other Information

Refer to protective measures listed in Sections 7 and 8. Ventilate the area.

Environmental precautions

Environmental Precautions

Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for Containment

Prevent further leakage or spillage if safe to do so. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoff water. Stop spill from entering drains, sewers, streams, or waterways.

Methods for Cleaning Up

Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Take precautionary measures against static discharges.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling

Handle in accordance with good industrial hygiene and safety practice. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Keep away from heat, sparks and open flame. No smoking.

Conditions for safe storage, including any incompatibilities

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations.

Incompatible Products

Strong oxidizing agents. Acids. Chlorinated compounds.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Isopropyl Alcohol 67-63-0	STEL: 400 ppm TWA: 200 ppm	TWA: 400 ppm TWA: 980 mg/m ³ (vacated) TWA: 400 ppm (vacated) TWA: 980 mg/m ³ (vacated) STEL: 500 ppm (vacated) STEL: 1225 mg/m ³	IDLH: 2000 ppm 10% LEL TWA: 980 mg/m ³ TWA: 400 ppm STEL: 500 ppm STEL: 1225 mg/m ³

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value. OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits. NIOSH IDLH: Immediately Dangerous to Life or Health.

Other Exposure Guidelines

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992). See section 15 for national exposure control parameters.

Appropriate engineering controls

Engineering Measures

Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection

Tightly fitting safety goggles.

Skin and Body Protection

Wear protective gloves/clothing. Long sleeved clothing. Chemical resistant apron. Impervious gloves. Antistatic boots

Respiratory Protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Provide regular cleaning of equipment, work area and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical State	Water thin liquid	Odor	Alcohol
Appearance	Clear, Colorless, Water thin liquid	Odor Threshold	No information available
Color	No information available		
<u>Property</u>	<u>Values</u>	<u>Remarks/ Method</u>	
pH	No data available	None known	
Melting/freezing point	No data available	None known	
Boiling Point/Range	No data available	None known	
Flash Point	22C / 72F	None known	
Evaporation rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	
Flammability Limits in Air			
Upper flammability limit	No data available		
Lower flammability limit	No data available		
Vapor pressure	No data available	None known	
Vapor density	No data available	None known	
Specific Gravity	No data available	None known	
Water Solubility	Miscible with water	None known	
Solubility in other solvents	No data available	None known	
Partition coefficient: n-octanol/water		None known	
Autoignition temperature	No data available	None known	
Decomposition temperature	No data available	None known	
Kinematic viscosity	No data available	None known	
Dynamic viscosity		None known	
Explosive Properties	No data available		
Oxidizing Properties	No data available		
<u>Other Information</u>			
Softening Point	No data available		
VOC Content (%)	No data available		
Particle Size	No data available		
Particle Size Distribution	No data available		

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

Heat, flames and sparks.

Incompatible materials

Strong oxidizing agents. Acids. Chlorinated compounds.

Hazardous Decomposition Products

Carbon oxides.

When used in accordance with the directions.

11. TOXICOLOGICAL INFORMATION

There is no data for this product. The information included in this section describes the potential hazards of the individual ingredients.

Information on likely routes of exposure

Product Information

Inhalation	May cause drowsiness and dizziness. May cause irritation of respiratory tract.
Eye Contact	May cause redness, itching, and pain. May cause temporary eye irritation.
Skin Contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Isopropyl Alcohol 67-63-0	= 4396 mg/kg (Rat)	= 12800 mg/kg (Rabbit)	= 16000 ppm (Rat) 8 h

Information on toxicological effects

Symptoms Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.

Mutagenic Effects No information available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Isopropyl Alcohol 67-63-0		Group 3		X

*IARC: (International Agency for Research on Cancer)
Group 3 - Not Classifiable as to Carcinogenicity in Humans
OSHA: (Occupational Safety & Health Administration)
X - Present*

Reproductive Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Chronic Toxicity	None known.
Target Organ Effects	Eyes. Respiratory system. Skin. Central nervous system (CNS).
Aspiration Hazard	No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)

7,020.00 mg/kg

ATEmix (dermal)

20,440.00 mg/kg (ATE)

ATEmix (inhalation-vapor)

88.81 ATEmix

Product Number: 810AA
Issuing Date: November 4, 2014

Revision Date: None

Product Name: Alcohol 70% Isopropyl
Revision Number: 0

12. ECOLOGICAL INFORMATION

There is no ecological data on the Product. The Product ingredients are expected to be safe for the environment at concentrations predicted under normal use and accidental spill scenarios. Packaging components are compatible with the conventional solid waste management practices.

Ecotoxicity

No information available.

Persistence and Degradability

No information available.

Bioaccumulation

No information available.

Other Adverse Effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste Disposal Methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261).

Contaminated Packaging

Dispose of in accordance with local regulations.

US EPA Waste Number

D001

California Hazardous Waste Codes

331

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Isopropyl Alcohol 67-63-0	Toxic Ignitable

Product Number: 810AA
Issuing Date: November 4, 2014

Revision Date: None

Product Name: Alcohol 70% Isopropyl
Revision Number: 0

14. TRANSPORT INFORMATION

DOT
Proper Shipping Name CONSUMER COMMODITY
Hazard Class ORM-D
Description CONSUMER COMMODITY,ORM-D
Emergency Response Guide Number 129

TDG
UN-No UN1219
Proper Shipping Name ISOPROPANOL
Hazard Class 3
Packing Group II
Description UN1219,ISOPROPANOL,3,PG II

MEX
UN-No UN1219
Proper Shipping Name ISOPROPANOL
Hazard Class 3
Packing Group II
Description UN1219 ISOPROPANOL,3,II

ICAO
UN-No UN1219
Proper Shipping Name ISOPROPYL ALCOHOL
Hazard Class 3
Packing Group II
Description UN1219,ISOPROPYL ALCOHOL,3,PG II

IATA
UN-No UN1219
Proper Shipping Name ISOPROPANOL
Hazard Class 3
Packing Group II
Description UN1219,ISOPROPYL ALCOHOL,3,PG II

IMDG/IMO
UN-No UN1219
Proper Shipping Name ISOPROPANOL
Hazard Class 3
Packing Group II
EmS No. F-E, S-D
Description UN1219, ISOPROPANOL,3,PG II

RID
UN-No UN1219
Proper Shipping Name ISOPROPANOL
Hazard Class 3
Packing Group II
Classification Code F1
Description UN1219 ISOPROPANOL,3,II

ADR
UN-No UN1219
Proper Shipping Name ISOPROPANOL
Hazard Class 3
Packing Group II
Classification Code F1
Description UN1219 ISOPROPANOL,3,II

ADN
UN-No UN1219
Proper Shipping Name ISOPROPANOL
Hazard Class 3
Packing Group II
Classification Code F1
Special Provisions 601
Description UN1219 ISOPROPANOL,3,II
Limited Quantity 3
Ventilation LQ4

Product Number: 810AA
Issuing Date: November 4, 2014

Revision Date: None

Product Name: Alcohol 70% Isopropyl
Revision Number: 0

15. REGULATORY INFORMATION

International Inventories

TSCA Exempt
DSL All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
Isopropyl Alcohol	67-63-0	50-100	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any ingredients regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any ingredients regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

U.S. State Regulations

California Proposition 65 - NONE

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Isopropyl Alcohol 67-63-0	X	X	X	X	

International Regulations

Mexico - Grade No information available.

National occupational exposure limits

Chemical Name	Carcinogen Status	Exposure Limits
Isopropyl Alcohol		Mexico: TWA 400 ppm Mexico: TWA 980 mg/m ³ Mexico: STEL 500 ppm Mexico: STEL 1225 mg/m ³

Canada

WHMIS Hazard Class

B2
D2B



Product Number: 810AA
Issuing Date: November 4, 2014

Revision Date: None

Product Name: Alcohol 70% Isopropyl
Revision Number: 0

16. OTHER INFORMATION

NFPA	Health Hazard 2	Flammability 3	Instability 0	Physical and Chemical Hazards - None
HMIS	Health Hazard 2	Flammability 3	Physical Hazard 0	Personal Protection X

Prepared By WERCS Professional Services, LLC
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Issuing Date November 4, 2014

Revision Date None

Revision Note None

General Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Approved and Updated by Vi-Jon, Inc.

Disclaimer:

The information and recommendations contained in the Safety Data Sheet (SDS) are supplied pursuant to 29 CFR 1910.1200 of the Occupational Safety and Health Standards Hazard Communication Rule. The information and recommendations set forth herein are presented in good faith and believed to be correct as of this date hereof.

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End of Safety Data Sheet



Safety Data Sheet

1 - Identification

Product Name: WD-40 Multi-Use Product Aerosol NOT FOR SALE IN CALIFORNIA	Manufacturer: WD-40 Company Address: 1061 Cudahy Place (92110) P.O. Box 80607 San Diego, California, USA 92138 -0607
Product Use: Lubricant, Penetrant, Drives Out Moisture, Removes and Protects Surfaces From Corrosion	Telephone: Emergency only: 1-888-324-7596 (PROSAR) Information: 1-888-324-7596 Chemical Spills: 1-800-424-9300 (Chemtrec) 1-703-527-3887 (International Calls)
Restrictions on Use: None identified	
SDS Date Of Preparation: 07/20/2014	

2 – Hazards Identification

Hazcom 2012/GHS Classification:

Flammable Aerosol Category 1

Gas Under Pressure: Compressed Gas

Aspiration Toxicity Category 1

Note: This product is a consumer product and is labeled in accordance with the US Consumer Product Safety Commission regulations which take precedence over OSHA Hazard Communication labeling. The actual container label will not include the label elements below. The labeling below applies to industrial/professional products.

Label Elements:



DANGER!

Extremely Flammable Aerosol.

Contains gas under pressure; may explode if heated.

May be fatal if swallowed and enters airways.

Prevention

Keep away from heat, sparks, open flames, hot surfaces – No smoking.

Do not spray on an open flame or other ignition source.

Pressurized container: Do not pierce or burn, even after use.

Response

IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.

Storage

Store locked up.

Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Store in a well-ventilated place.

Disposal

Dispose of contents and container in accordance with local and national regulations.

3 - Composition/Information on Ingredients

Ingredient	CAS #	Weight Percent	US Hazcom 2012/ GHS Classification
Aliphatic Hydrocarbon	64742-47-8	45-50	Flammable Liquid Category 3

			Aspiration Toxicity Category 1
Petroleum Base Oil	64742-56-9 64742-65-0 64742-53-6 64742-54-7 64742-71-8	<25	Not Hazardous
LVP Aliphatic Hydrocarbon	64742-47-8	12-18	Aspiration Toxicity Category 1
Carbon Dioxide	124-38-9	2-3	Simple Asphyxiant Gas Under Pressure, Compressed Gas
Non-Hazardous Ingredients	Mixture	<10	Not Hazardous

Note: The exact percentages are a trade secret.

4 – First Aid Measures

Ingestion (Swallowed): Aspiration Hazard. DO NOT induce vomiting. Call physician, poison control center or the WD-40 Safety Hotline at 1-888-324-7596 immediately.

Eye Contact: Flush thoroughly with water. Remove contact lenses if present after the first 5 minutes and continue flushing for several more minutes. Get medical attention if irritation persists.

Skin Contact: Wash with soap and water. If irritation develops and persists, get medical attention.

Inhalation (Breathing): If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.

Signs and Symptoms of Exposure: May cause eye and respiratory irritation. Inhalation may cause coughing, headache and dizziness. Skin contact may cause drying of the skin.

Indication of Immediate Medical Attention/Special Treatment Needed: Immediate medical attention is needed for ingestion.

5 – Fire Fighting Measures

Suitable (and unsuitable) Extinguishing Media: Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet or flooding amounts of water. Burning product will float on the surface and spread fire.

Specific Hazards Arising from the Chemical: Contents under pressure. Keep away from ignition sources and open flames. Exposure of containers to extreme heat and flames can cause them to rupture often with violent force. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back. Combustion will produce oxides of carbon and hydrocarbons.

Special Protective Equipment and Precautions for Fire-Fighters: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water. Use shielding to protect against bursting containers.

6 – Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area.

Methods and Materials for Containment/Cleanup: Leaking cans should be placed in a plastic bag or open pail until the pressure has dissipated. Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly. Report spills to authorities as required.

7 – Handling and Storage

Precautions for Safe Handling: Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Use only with adequate ventilation. Keep away from heat, sparks, pilot lights, hot surfaces and open flames. Unplug electrical tools, motors and appliances before spraying or bringing the can near any source of electricity. Electricity can burn a hole in the can and cause contents to burst into flames. To avoid serious burn injury, do not let the can touch battery terminals, electrical connections on motors or appliances or any other source of electricity. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep out of the reach of children. Do not puncture, crush or incinerate containers, even when empty.

Conditions for Safe Storage: Store in a cool, well-ventilated area, away from incompatible materials Do not store above 120°F or in direct sunlight. U.F.C (NFPA 30B) Level 3 Aerosol. Store away from oxidizers.

8 – Exposure Controls/Personal Protection

Chemical	Occupational Exposure Limits
Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Petroleum Base Oil	5 mg/m3 TWA, 10 mg/m3 STEL ACGIH TLV 5 mg/m3 TWA OSHA PEL
LVP Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Carbon Dioxide	5000 ppm TWA (OSHA/ACGIH), 30,000 ppm STEL (ACGIH)
Non-Hazardous Ingredients	None Established

The Following Controls are Recommended for Normal Consumer Use of this Product

Appropriate Engineering Controls: Use in a well-ventilated area.

Personal Protection:

Eye Protection: Avoid eye contact. Always spray away from your face.

Skin Protection: Avoid prolonged skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.

Respiratory Protection: None needed for normal use with adequate ventilation.

For Bulk Processing or Workplace Use the Following Controls are Recommended

Appropriate Engineering Controls: Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.

Personal Protection:

Eye Protection: Safety goggles recommended where eye contact is possible.

Skin Protection: Wear chemical resistant gloves.

Respiratory Protection: None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.

Work/Hygiene Practices: Wash with soap and water after handling.

9 – Physical and Chemical Properties

Appearance:	Light amber liquid	Flammable Limits: (Solvent Portion)	LEL: 0.6% UEL: 8%
Odor:	Mild petroleum odor	Vapor Pressure:	95-115 PSI @ 70°F
Odor Threshold:	Not established	Vapor Density:	Greater than 1 (air=1)
pH:	Not Applicable	Relative Density:	0.8 – 0.82 @ 60°F
Melting/Freezing Point	Not established	Solubilities:	Insoluble in water
Boiling Point/Range:	361 - 369°F (183 - 187°C)	Partition Coefficient; n-octanol/water:	Not established
Flash Point:	122°F (49°C) Tag Closed Cup (concentrate)	Autoignition Temperature:	Not established
Evaporation Rate:	Not established	Decomposition Temperature:	Not established
Flammability (solid, gas)	Flammable Aerosol	Viscosity:	2.79-2.96 cSt @ 100°F
VOC:	412 grams/liter (49.5%)	Pour Point:	-63°C (-81.4°F) ASTM D-97

10 – Stability and Reactivity

Reactivity: Not reactive under normal conditions

Chemical Stability: Stable

Possibility of Hazardous Reactions: May react with strong oxidizers generating heat.

Conditions to Avoid: Avoid heat, sparks, flames and other sources of ignition. Do not puncture or incinerate containers.

Incompatible Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide and carbon dioxide.

11 – Toxicological Information

Symptoms of Overexposure:

Inhalation: High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. Intentional abuse may be harmful or fatal.

Skin Contact: Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis.

Eye Contact: Contact may be irritating to eyes. May cause redness and tearing.

Ingestion: This product has low oral toxicity. Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhea. This product is an aspiration hazard. If swallowed, can enter the lungs and may cause chemical pneumonitis, severe lung damage and death.

Chronic Effects: None expected.

Carcinogen Status: None of the components are listed as a carcinogen or suspect carcinogen by IARC, NTP, ACGIH or OSHA.

Reproductive Toxicity: None of the components is considered a reproductive hazard.

Numerical Measures of Toxicity:

The oral toxicity of this product is estimated to be greater than 5,000 mg/kg and the dermal toxicity greater than 2,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard.

12 – Ecological Information

Ecotoxicity: No specific aquatic toxicity data is currently available, however components of this product are not expected to be harmful to aquatic organisms

Persistence and Degradability: Component are readily biodegradable.

Bioaccumulative Potential: Bioaccumulation is not expected based on an assessment of the ingredients.

Mobility in Soil: No data available

Other Adverse Effects: None known

13 - Disposal Considerations

If this product becomes a waste, it would be expected to meet the criteria of a RCRA ignitable hazardous waste (D001). However, it is the responsibility of the generator to determine at the time of disposal the proper classification and method of disposal. Do not puncture or incinerate containers, even empty. Dispose in accordance with federal, state, and local regulations.

14 – Transportation Information

DOT Surface Shipping Description:

UN1950, Aerosols, 2.1 Ltd. Qty (Note: Shipping Papers are not required for Limited Quantities unless transported by air or vessel – each package must be marked with the Limited Quantity Mark)

IMDG Shipping Description: Un1950, Aerosols, 2.1, LTD QTY

ICAO Shipping Description: UN1950, Aerosols, flammable, 2.1 NOTE: WD-40 does not test aerosol cans to assure that they meet the pressure and other requirements for transport by air. We do not recommend that our aerosol products be transported by air.

15 – Regulatory Information

U.S. Federal Regulations:

CERCLA 103 Reportable Quantity: This product is not subject to CERCLA reporting requirements, however, oil spills are reportable to the National Response Center under the Clean Water Act and many

states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

SARA TITLE III:

Hazard Category For Section 311/312: Acute Health, Fire Hazard, Sudden Release of Pressure

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III

Section 313 Reporting requirements: None

Section 302 Extremely Hazardous Substances (TPQ): None

EPA Toxic Substances Control Act (TSCA) Status: All of the components of this product are listed on the TSCA inventory.

VOC Regulations: This product complies with the consumer product VOC limits of the US EPA and states adopting the OTC VOC rules but does not comply with CARB.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): This product does not contain chemicals regulated under California Proposition 65.

Canadian Environmental Protection Act: One of the components is listed on the NDSL. All of the other ingredients are listed on the Canadian Domestic Substances List or exempt from notification.

Canadian WHMIS Classification: Class A (Compressed gas), Class B-5 (Flammable Aerosol)

This MSDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

16 – Other Information:

HMIS Hazard Rating:

Health – 1 (slight hazard), Fire Hazard – 4 (severe hazard), Reactivity – 0 (minimal hazard)

Revision Date: July 20, 2014

Supersedes: May 23, 2014

Revision Summary: Convert to Hazcom 2012. Changes in all sections.

Prepared by: Industrial Health & Safety Consultants, Inc. Shelton, CT, USA

APPROVED By: I. Kowalski

Regulatory Affairs Dept.

5049000/No.0015205



GHS SAFETY DATA SHEET

WELD-ON® 711™ Low VOC PVC Plastic Pipe Cements

Date Revised: JUL 2015

Supersedes: APR 2015

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: WELD-ON® 711™ Low VOC PVC Plastic Pipe Cements

PRODUCT USE: Low VOC Solvent Cement for PVC Plastic Pipe

SUPPLIER:

MANUFACTURER: IPS Corporation
17109 South Main Street, Gardena, CA 90248-3127
P.O. Box 379, Gardena, CA 90247-0379
Tel. 1-310-898-3300

EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

Medical: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health	Environmental	Physical
Acute Toxicity: Category 4 Skin Irritation: Category 3 Skin Sensitization: NO Eye: Category 2	Acute Toxicity: None Known Chronic Toxicity: None Known	Flammable Liquid Category 2

GHS LABEL:



Signal Word:
Danger

WHMIS CLASSIFICATION: CLASS B, DIVISION 2
CLASS D, DIVISION 1B

Hazard Statements	Precautionary Statements
H225: Highly flammable liquid and vapor H319: Causes serious eye irritation H332: Harmful if inhaled H335: May cause respiratory irritation H336: May cause drowsiness or dizziness H351: Suspected of causing cancer EUH019: May form explosive peroxides	P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking P261: Avoid breathing dust/fume/gas/mist/vapors/spray P280: Wear protective gloves/protective clothing/eye protection/face protection P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing P403+P233: Store in a well ventilated place. Keep container tightly closed P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Tetrahydrofuran (THF)	109-99-9	203-726-8	05-2116297729-22-0000	40 - 50
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	5 - 15
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	9 - 18
Acetone	67-64-1	200-662-2	05-2116297713-35-0000	3 - 11

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.

* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes:	Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact:	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation:	Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion:	Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.
Likely Routes of Exposure:	Inhalation, Eye and Skin Contact
Acute symptoms and effects:	
Inhalation:	Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact:	Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact:	Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion:	May cause nausea, vomiting, diarrhea and mental sluggishness.
Chronic (long-term) effects:	Category 2 Carcinogen
Chronic (long-term) effects (MEK):	Low level chronic exposure has been shown to cause decreased memory and impairment of the central nervous system.

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media:	Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.	HMIS	NFPA	0-Minimal
Unsuitable Extinguishing Media:	Water spray or stream.	Health	2	1-Slight
Exposure Hazards:	Inhalation and dermal contact	Flammability	3	2-Moderate
Combustion Products:	Oxides of carbon, hydrogen chloride and smoke	Reactivity	0	3-Serious
		PPE	B	4-Severe
Protection for Firefighters:	Self-contained breathing apparatus or full-face positive pressure airline masks.			

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions:	Keep away from heat, sparks and open flame. Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment. Prevent contact with skin or eyes (see section 8).
Environmental Precautions:	Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up:	Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up:	Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling:	Avoid breathing of vapor, avoid contact with eyes, skin and clothing. Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods. Do not eat, drink or smoke while handling.
Storage:	Store in ventilated room or shade below 44°C (110°F) and away from direct sunlight. Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates. Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:	Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL	OSHA PEL-Ceiling	CAL/OSHA PEL	CAL/OSHA Ceiling	CAL/OSHA STEL
	Tetrahydrofuran (THF)	50 ppm	100 ppm	200 ppm	N/E	N/E	200 ppm	N/E	250 ppm
	Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	N/E	N/E	200 ppm	N/E	300 ppm
	Cyclohexanone	20 ppm	50 ppm	50 ppm	N/E	N/E	25 ppm	N/E	N/E
	Acetone	500 ppm	750 ppm	1000 ppm	N/E	N/E	500 ppm	3000 ppm	750 ppm

Engineering Controls: Use local exhaust as needed.

Monitoring: Maintain breathing zone airborne concentrations below exposure limits.

Personal Protective Equipment (PPE):

Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.

Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.

Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above.
With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.



GHS SAFETY DATA SHEET

WELD-ON® 711™ Low VOC PVC Plastic Pipe Cements

Date Revised: JUL 2015

Supersedes: APR 2015

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Gray, heavy syrupy liquid	Odor Threshold:	0.88 ppm (Cyclohexanone)
Odor:	Ketone	Boiling Range:	56°C (133°F) to 156°C (313°F)
pH:	Not Applicable	Evaporation Rate:	> 1.0 (BUAC = 1)
Melting/Freezing Point:	-108.5°C (-163.3°F) Based on first melting component: THF	Flammability:	Category 2
Boiling Point:	56°C (133°F) Based on first boiling component: Acetone	Flammability Limits:	LEL: 1.1% based on Cyclohexanone UEL: 12.8% based on Acetone
Flash Point:	-20°C (-4°F) TCC based on Acetone	Vapor Pressure:	190 mm Hg @ 20°C (68°F) Acetone
Specific Gravity:	0.966 @ 23°C (73°F)	Vapor Density:	>2.0 (Air = 1)
Solubility:	Solvent portion soluble in water. Resin portion separates out.	Other Data: Viscosity:	Heavy bodied
Partition Coefficient n-octanol/water:	Not Available		
Auto-ignition Temperature:	321°C (610°F) based on THF		
Decomposition Temperature:	Not Applicable		
VOC Content:	When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 510 g/l.		

SECTION 10 - STABILITY AND REACTIVITY

Stability:	Stable
Hazardous decomposition products:	None in normal use. When forced to burn, this product gives off oxides of carbon, hydrogen chloride and smoke.
Conditions to avoid:	Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials:	Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Toxicity:	LD ₅₀	LC ₅₀	Target Organs
Tetrahydrofuran (THF)	Oral: 2842 mg/kg (rat)	Inhalation 3 hrs. 21,000 mg/m ³ (rat)	STOT SE3
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m ³ (rat)	STOT SE3
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)	
Acetone	Oral: 5800 mg/kg (rat)	Inhalation 50,100 mg/m ³ (rat)	STOT SE3

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	None Known
Mobility:	In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 510 g/l.
Degradability:	Not readily biodegradable
Bioaccumulation:	Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name:	Adhesives	<div>EXCEPTION for Ground Shipping</div> <div>DOT Limited Quantity: Up to 5L per inner packaging, 30 kg gross weight per package.</div> <div>Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D" .</div>						
Hazard Class:	3							
Secondary Risk:	None	<div>TDG INFORMATION</div> <table><tr><td>TDG CLASS:</td><td>FLAMMABLE LIQUID 3</td></tr><tr><td>SHIPPING NAME:</td><td>ADHESIVES</td></tr><tr><td>UN NUMBER/PACKING GROUP:</td><td>UN 1133, PG II</td></tr></table>	TDG CLASS:	FLAMMABLE LIQUID 3	SHIPPING NAME:	ADHESIVES	UN NUMBER/PACKING GROUP:	UN 1133, PG II
TDG CLASS:	FLAMMABLE LIQUID 3							
SHIPPING NAME:	ADHESIVES							
UN NUMBER/PACKING GROUP:	UN 1133, PG II							
Identification Number:	UN 1133							
Packing Group:	PG II							
Label Required:	Class 3 Flammable Liquid							
Marine Pollutant:	NO							

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information:	Highly Flammable, Irritant, Carc. Cat. 2	Ingredient Listings:	USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)
Symbols:	F, Xi	R66:	Repeated exposure may cause skin dryness or cracking
Risk Phrases:	R11: Highly flammable. R20-Harmful by inhalation. R36/37: Irritating to eyes and respiratory system.	R67:	Vapors may cause drowsiness and dizziness
Safety Phrases:	S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking. S25: Avoid contact with eyes.	S26:	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
		S33:	Take precautionary measures against static discharges.
		S46:	If swallowed, seek medical advice immediately and show this container or label.

SECTION 16 - OTHER INFORMATION

Specification Information:		
Department issuing data sheet:	IPS, Safety Health & Environmental Affairs	All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances).
E-mail address:	<EHSinfo@ipscorp.com>	
Training necessary:	Yes, training in practices and procedures contained in product literature.	
Reissue date / reason for reissue:	7/15/2015 / Updated GHS Standard Format	
Intended Use of Product:	Solvent Cement for PVC Plastic Pipe	

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.



GHS SAFETY DATA SHEET

WELD-ON® 714™ Low VOC Cement for CPVC Plastic Pipe

Date Revised: APR 2015

Supersedes: NOV 2014

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: WELD-ON® 714™ Low VOC Cement for CPVC Plastic Pipe

PRODUCT USE: Low VOC Solvent Cement for CPVC Plastic Pipe

SUPPLIER:

MANUFACTURER: IPS Corporation
17109 South Main Street, Gardena, CA 90248-3127
P.O. Box 379, Gardena, CA 90247-0379
Tel. 1-310-898-3300

EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

Medical: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health	Environmental	Physical
Acute Toxicity: Category 4 Skin Irritation: Category 3 Skin Sensitization: NO Eye: Category 2	Acute Toxicity: None Known Chronic Toxicity: None Known	Flammable Liquid Category 2

GHS LABEL:



Signal Word:
Danger

WHMIS CLASSIFICATION: CLASS B, DIVISION 2
CLASS D, DIVISION 2B

Hazard Statements	Precautionary Statements
H225: Highly flammable liquid and vapor H319: Causes serious eye irritation H332: Harmful if inhaled H335: May cause respiratory irritation H336: May cause drowsiness or dizziness H351: Suspected of causing cancer EUH019: May form explosive peroxides EUH066: Repeated exposure may cause skin dryness or cracking	P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking P261: Avoid breathing dust/fume/gas/mist/vapors/spray P280: Wear protective gloves/protective clothing/eye protection/face protection P337+P313: Get medical advice/attention P403+P233: Store in a well ventilated place. Keep container tightly closed P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Tetrahydrofuran (THF)	109-99-9	203-726-8	05-2116297728-22-0000	30 - 60
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	5 - 25
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	5 - 20

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.

* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes:	Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact:	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation:	Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion:	Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.
Likely Routes of Exposure:	Inhalation, Eye and Skin Contact
Acute symptoms and effects:	
Inhalation:	Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact:	Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact:	Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion:	May cause nausea, vomiting, diarrhea and mental sluggishness.
Chronic (long-term) effects:	Category 2 Carcinogen

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media:	Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.	HMIS	NFPA	0-Minimal
Unsuitable Extinguishing Media:	Water spray or stream.	Health	2	1-Slight
Exposure Hazards:	Inhalation and dermal contact	Flammability	3	2-Moderate
Combustion Products:	Oxides of carbon, hydrogen chloride and smoke	Reactivity	0	3-Serious
		PPE	B	4-Severe
Protection for Firefighters:	Self-contained breathing apparatus or full-face positive pressure airline masks.			

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions:	Keep away from heat, sparks and open flame. Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment. Prevent contact with skin or eyes (see section 8).
Environmental Precautions:	Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up:	Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up:	Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling:	Avoid breathing of vapor, avoid contact with eyes, skin and clothing. Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods. Do not eat, drink or smoke while handling.
Storage:	Store in ventilated room or shade below 33°C (90°F) and away from direct sunlight. Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates. Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:	Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL	OSHA PEL-Ceiling	CAL/OSHA PEL	CAL/OSHA Ceiling	CAL/OSHA STEL
	Tetrahydrofuran (THF)	50 ppm	100 ppm	200 ppm	N/E	N/E	200 ppm	N/E	250 ppm
	Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	N/E	N/E	200 ppm	N/E	300 ppm
	Cyclohexanone	20 ppm	50 ppm	50 ppm	N/E	N/E	25 ppm	N/E	N/E

Engineering Controls: Use local exhaust as needed.

Monitoring: Maintain breathing zone airborne concentrations below exposure limits.

Personal Protective Equipment (PPE):

Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.

Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.

Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.

Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above. With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.



GHS SAFETY DATA SHEET

WELD-ON® 714™ Low VOC Cement for CPVC Plastic Pipe

Date Revised: APR 2015

Supersedes: NOV 2014

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Orange or gray, heavy syrupy liquid	Odor Threshold:	0.88 ppm (Cyclohexanone)
Odor:	Ketone		
pH:	Not Applicable		
Melting/Freezing Point:	-108.5°C (-163.3°F) Based on first melting component: THF	Boiling Range:	66°C (151°F) to 156°C (313°F)
Boiling Point:	66°C (151°F) Based on first boiling component: THF	Evaporation Rate:	> 1.0 (BUAC = 1)
Flash Point:	-20°C (-4°F) TCC based on THF	Flammability:	Category 2
Specific Gravity:	0.995 @23°C (73°F)	Flammability Limits:	LEL: 1.1% based on Cyclohexanone UEL: 11.8% based on THF
Solubility:	Solvent portion soluble in water. Resin portion separates out.	Vapor Pressure:	129 mm Hg @ 20°C (68°F) based on THF
Partition Coefficient n-octanol/water:	Not Available	Vapor Density:	>2 (Air = 1)
Auto-ignition Temperature:	321°C (610°F) based on THF	Other Data: Viscosity:	Heavy bodied
Decomposition Temperature:	Not Applicable		
VOC Content:	When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 490 g/l.		

SECTION 10 - STABILITY AND REACTIVITY

Stability:	Stable
Hazardous decomposition products:	None in normal use. When forced to burn, this product gives off oxides of carbon, hydrogen chloride and smoke.
Conditions to avoid:	Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials:	Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Toxicity:	LD ₅₀	LC ₅₀	Target Organs
Tetrahydrofuran (THF)	Oral: 2842 mg/kg (rat)	Inhalation 3 hrs. 21,000 mg/m ³ (rat)	STOT SE3
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m ³ (rat)	STOT SE3
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)	

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	None Known
Mobility:	In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 490 g/l.
Degradability:	Not readily biodegradable
Bioaccumulation:	Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name:	Adhesives
Hazard Class:	3
Secondary Risk:	None
Identification Number:	UN 1133
Packing Group:	PG II
Label Required:	Class 3 Flammable Liquid
Marine Pollutant:	NO

EXCEPTION for Ground Shipping

DOT Limited Quantity: Up to 5L per inner packaging, 30 kg gross weight per package.
Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D".

TDG INFORMATION

TDG CLASS:	FLAMMABLE LIQUID 3
SHIPPING NAME:	ADHESIVES
UN NUMBER/PACKING GROUP:	UN 1133, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information:	Highly Flammable, Irritant, Carc. Cat. 2	Ingredient Listings:	USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)
Symbols:	F, Xi		
Risk Phrases:	R11: Highly flammable. R36/37: Irritating to eyes and respiratory system.	R66:	Repeated exposure may cause skin dryness or cracking
		R67:	Vapors may cause drowsiness and dizziness
Safety Phrases:	S2: Keep out of the reach of children S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking.	S25:	Avoid contact with eyes.
		S26:	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
		S33:	Take precautionary measures against static discharges.

SECTION 16 - OTHER INFORMATION

Specification Information:		
Department issuing data sheet:	IPS, Safety Health & Environmental Affairs	All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances).
E-mail address:	<EHSinfo@ipscorp.com>	
Training necessary:	Yes, training in practices and procedures contained in product literature.	
Reissue date / reason for reissue:	4/8/2015 / Updated GHS Standard Format	
Intended Use of Product:	Solvent Cement for CPVC Plastic Pipe	

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.



GHS SAFETY DATA SHEET

WELD-ON® 717™ Low VOC Cements for PVC Plastic Pipe

Date Revised: **APR 2015**Supersedes: **NOV 2014**

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: WELD-ON® 717™ Low VOC Cements for PVC Plastic Pipe**PRODUCT USE:** Low VOC Solvent Cement for PVC Plastic Pipe**SUPPLIER:****MANUFACTURER:** IPS Corporation

17109 South Main Street, Gardena, CA 90248-3127

P.O. Box 379, Gardena, CA 90247-0379

Tel. 1-310-898-3300

EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)**Medical:** CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health	Environmental	Physical
Acute Toxicity: Category 4	Acute Toxicity: None Known	Flammable Liquid Category 2
Skin Irritation: Category 3	Chronic Toxicity: None Known	
Skin Sensitization: NO		
Eye: Category 2		

GHS LABEL:



Signal Word:

Danger

WHMIS CLASSIFICATION: CLASS B, DIVISION 2

CLASS D, DIVISION 1B

Hazard Statements

H225: Highly flammable liquid and vapor

H319: Causes serious eye irritation

H332: Harmful if inhaled

H335: May cause respiratory irritation

H336: May cause drowsiness or dizziness

H351: Suspected of causing cancer

EUH019: May form explosive peroxides

Precautionary Statements

P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking

P261: Avoid breathing dust/fume/gas/mist/vapors/spray

P280: Wear protective gloves/protective clothing/eye protection/face protection

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

P403+P233: Store in a well ventilated place. Keep container tightly closed

P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Tetrahydrofuran (THF)	109-99-9	203-726-8	05-2116297729-22-0000	25 - 70
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	5 - 36
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	10 - 25

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.

* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

Indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.**Skin contact:** Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.**Inhalation:** Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.**Ingestion:** Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.**Likely Routes of Exposure:** Inhalation, Eye and Skin Contact

Acute symptoms and effects:

Inhalation: Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.**Eye Contact:** Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.**Skin Contact:** Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.**Ingestion:** May cause nausea, vomiting, diarrhea and mental sluggishness.**Chronic (long-term) effects:** Category 2 Carcinogen

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.**Unsuitable Extinguishing Media:** Water spray or stream.**Exposure Hazards:** Inhalation and dermal contact**Combustion Products:** Oxides of carbon, hydrogen chloride and smoke

	HMIS	NFPA	
Health	2	2	1-Slight
Flammability	3	3	2-Moderate
Reactivity	0	0	3-Serious
PPE	B		4-Severe

Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.

Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.

Prevent contact with skin or eyes (see section 8).

Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.**Methods for Cleaning up:** Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.**Materials not to be used for clean up:** Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.

Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.

Do not eat, drink or smoke while handling.

Storage: Store in ventilated room or shade below 44°C (110°F) and away from direct sunlight.

Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.

Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:	Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL	OSHA PEL-Ceiling	CAL/OSHA PEL	CAL/OSHA Ceiling	CAL/OSHA STEL
	Tetrahydrofuran (THF)	50 ppm	100 ppm	200 ppm	N/E	N/E	200 ppm	N/E	250 ppm
	Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	N/E	N/E	200 ppm	N/E	300 ppm
	Cyclohexanone	20 ppm	50 ppm	50 ppm	N/E	N/E	25 ppm	N/E	N/E

Engineering Controls: Use local exhaust as needed.**Monitoring:** Maintain breathing zone airborne concentrations below exposure limits.

Personal Protective Equipment (PPE):

Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.**Skin Protection:** Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion. Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.**Respiratory Protection:** Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above. With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.



GHS SAFETY DATA SHEET

WELD-ON® 717™ Low VOC Cements for PVC Plastic Pipe

Date Revised: APR 2015

Supersedes: NOV 2014

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Gray or clear, heavy syrupy liquid	Odor Threshold:	0.88 ppm (Cyclohexanone)
Odor:	Ketone	Boiling Range:	66°C (151°F) to 156°C (313°F)
pH:	Not Applicable	Evaporation Rate:	> 1.0 (BUAC = 1)
Melting/Freezing Point:	-108.5°C (-163.3°F) Based on first melting component: THF	Flammability:	Category 2
Boiling Point:	66°C (151°F) Based on first boiling component: THF	Flammability Limits:	LEL: 1.1% based on Cyclohexanone UEL: 11.8% based on THF
Flash Point:	-20°C (-4°F) TCC based on THF	Vapor Pressure:	129 mm Hg @ 20°C (68°F) based on THF
Specific Gravity:	0.963 @23°C (73°F)	Vapor Density:	>2 (Air = 1)
Solubility:	Solvent portion soluble in water. Resin portion separates out.	Other Data: Viscosity:	Heavy bodied
Partition Coefficient n-octanol/water:	Not Available		
Auto-ignition Temperature:	321°C (610°F) based on THF		
Decomposition Temperature:	Not Applicable		
VOC Content:	When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 510 g/l.		

SECTION 10 - STABILITY AND REACTIVITY

Stability:	Stable
Hazardous decomposition products:	None in normal use. When forced to burn, this product gives off oxides of carbon, hydrogen chloride and smoke.
Conditions to avoid:	Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials:	Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Toxicity:	LD ₅₀	LC ₅₀	Target Organs
Tetrahydrofuran (THF)	Oral: 2842 mg/kg (rat)	Inhalation 3 hrs. 21,000 mg/m ³ (rat)	STOT SE3
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m ³ (rat)	STOT SE3
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)	

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	None Known
Mobility:	In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 510 g/l.
Degradability:	Not readily biodegradable
Bioaccumulation:	Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name:	Adhesives
Hazard Class:	3
Secondary Risk:	None
Identification Number:	UN 1133
Packing Group:	PG II
Label Required:	Class 3 Flammable Liquid
Marine Pollutant:	NO

EXCEPTION for Ground Shipping

DOT Limited Quantity: Up to 5L per inner packaging, 30 kg gross weight per package.

Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D".

TDG INFORMATION

TDG CLASS:	FLAMMABLE LIQUID 3
SHIPPING NAME:	ADHESIVES
UN NUMBER/PACKING GROUP:	UN 1133, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information:	Highly Flammable, Irritant, Carc. Cat. 2	Ingredient Listings:	USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)
Symbols:	F, Xi		
Risk Phrases:	R11: Highly flammable. R20: Harmful by inhalation. R36/37: Irritating to eyes and respiratory system.	Safety Phrases:	S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S33: Take precautionary measures against static discharges. S46: If swallowed, seek medical advice immediately and show this container or label.
			R66: Repeated exposure may cause skin dryness or cracking R67: Vapors may cause drowsiness and dizziness

SECTION 16 - OTHER INFORMATION

Specification Information:		
Department issuing data sheet:	IPS, Safety Health & Environmental Affairs	All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances).
E-mail address:	<EHSinfo@ipscorp.com>	
Training necessary:	Yes, training in practices and procedures contained in product literature.	
Reissue date / reason for reissue:	4/20/2015 / Updated GHS Standard Format	
Intended Use of Product:	Solvent Cement for PVC Plastic Pipe	

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.



GHS SAFETY DATA SHEET

WELD-ON® 727™ Hot 'R Cold™ Low VOC Cement for Plastic Pipe

Date Revised: APR 2015

Supersedes: NOV 2014

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: WELD-ON® 727™ Hot 'R Cold™ Low VOC Cement for Plastic Pipe

PRODUCT USE: Low VOC Solvent Cement for PVC Plastic Pipe

SUPPLIER:

MANUFACTURER: IPS Corporation
17109 South Main Street, Gardena, CA 90248-3127
P.O. Box 379, Gardena, CA 90247-0379
Tel. 1-310-898-3300

EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

Medical: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health	Environmental	Physical
Acute Toxicity: Category 4 Skin Irritation: Category 3 Skin Sensitization: NO Eye: Category 2	Acute Toxicity: None Known Chronic Toxicity: None Known	Flammable Liquid Category 2

GHS LABEL:



Signal Word:
Danger

WHMIS CLASSIFICATION: CLASS B, DIVISION 2
CLASS D, DIVISION 1B

Hazard Statements	Precautionary Statements
H225: Highly flammable liquid and vapor H319: Causes serious eye irritation H335: May cause respiratory irritation H336: May cause drowsiness or dizziness H351: Suspected of causing cancer EUH019: May form explosive peroxides	P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking P261: Avoid breathing dust/fume/gas/mist/vapors/spray P280: Wear protective gloves/protective clothing/eye protection/face protection P337+P313: Get medical advice/attention P403+P233: Store in a well ventilated place. Keep container tightly closed P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Tetrahydrofuran (THF)	109-99-9	203-726-8	05-2116297729-22-0000	30 - 50
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	4 - 15
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	8 - 17
Acetone	67-64-1	200-662-2	05-2116297713-35-0000	5 - 15

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.

* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

Likely Routes of Exposure: Inhalation, Eye and Skin Contact

Acute symptoms and effects:
Inhalation: Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact: Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact: Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion: May cause nausea, vomiting, diarrhea and mental sluggishness.

Chronic (long-term) effects: Category 2 Carcinogen

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.
Unsuitable Extinguishing Media: Water spray or stream.
Exposure Hazards: Inhalation and dermal contact
Combustion Products: Oxides of carbon, hydrogen chloride and smoke

Health	2	NFPA	0-Minimal
Flammability	3		1-Slight
Reactivity	0		2-Moderate
PPE	B		3-Serious
			4-Severe

Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.
Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.
Prevent contact with skin or eyes (see section 8).

Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.

Methods for Cleaning up: Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.

Materials not to be used for clean up: Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
Do not eat, drink or smoke while handling.

Storage: Store in ventilated room or shade below 44°C (110°F) and away from direct sunlight.
Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:	Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL	OSHA PEL-Ceiling	CAL/OSHA PEL	CAL/OSHA Ceiling	CAL/OSHA STEL
	Tetrahydrofuran (THF)	50 ppm	100 ppm	200 ppm	N/E	N/E	200 ppm	N/E	250 ppm
	Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	N/E	N/E	200 ppm	N/E	300 ppm
	Cyclohexanone	20 ppm	50 ppm	50 ppm	N/E	N/E	25 ppm	N/E	N/E
	Acetone	500 ppm	750 ppm	1000 ppm	N/E	N/E	500 ppm	3000 ppm	750 ppm

Engineering Controls: Use local exhaust as needed.

Monitoring: Maintain breathing zone airborne concentrations below exposure limits.

Personal Protective Equipment (PPE):

Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.

Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.

Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above.
With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.



GHS SAFETY DATA SHEET

WELD-ON® 727™ Hot 'R Cold™ Low VOC Cement for Plastic Pipe

Date Revised: APR 2015

Supersedes: NOV 2014

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, medium syrupy liquid	Odor Threshold:	0.88 ppm (Cyclohexanone)
Odor:	Ketone	Boiling Range:	56°C (133°F) to 156°C (313°F)
pH:	Not Applicable	Evaporation Rate:	> 1.0 (BUAC = 1)
Melting/Freezing Point:	-108.5°C (-163.3°F) Based on first melting component: THF	Flammability:	Category 2
Boiling Point:	56°C (133°F) Based on first boiling component: Acetone	Flammability Limits:	LEL: 1.1% based on Cyclohexanone UEL: 12.8% based on Acetone
Flash Point:	-20°C (-4°F) TCC based on Acetone	Vapor Pressure:	190 mm Hg @ 20°C (68°F) Acetone
Specific Gravity :	0.934 @23°C (73°F)	Vapor Density:	>2.0 (Air = 1)
Solubility:	Solvent portion soluble in water. Resin portion separates out.	Other Data: Viscosity:	Medium bodied
Partition Coefficient n-octanol/water:	Not Available		
Auto-ignition Temperature:	321°C (610°F) based on THF		
Decomposition Temperature:	Not Applicable		
VOC Content:	When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 510 g/L.		

SECTION 10 - STABILITY AND REACTIVITY

Stability:	Stable
Hazardous decomposition products:	None in normal use. When forced to burn, this product gives off oxides of carbon, hydrogen chloride and smoke.
Conditions to avoid:	Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials:	Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Toxicity:	LD ₅₀	LC ₅₀	Target Organs
Tetrahydrofuran (THF)	Oral: 2842 mg/kg (rat)	Inhalation 3 hrs. 21,000 mg/m ³ (rat)	STOT SE3
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m ³ (rat)	STOT SE3
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)	
Acetone	Oral: 5800 mg/kg (rat)	Inhalation 50,100 mg/m ³ (rat)	STOT SE3

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	None Known
Mobility:	In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 510 g/L.
Degradability:	Not readily biodegradable
Bioaccumulation:	Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name:	Adhesives	EXCEPTION for Ground Shipping DOT Limited Quantity: Up to 5L per inner packaging, 30 kg gross weight per package. Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D" .
Hazard Class:	3	
Secondary Risk:	None	
Identification Number:	UN 1133	
Packing Group:	PG II	
Label Required:	Class 3 Flammable Liquid	
Marine Pollutant:	NO	
TDG INFORMATION		
TDG CLASS:		FLAMMABLE LIQUID 3
SHIPPING NAME:		ADHESIVES
UN NUMBER/PACKING GROUP:		UN 1133, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information:	Highly Flammable, Irritant, Carc. Cat. 2	Ingredient Listings:	USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)
Symbols:	F, Xi	R66:	Repeated exposure may cause skin dryness or cracking
Risk Phrases:	R11: Highly flammable. R36/37: Irritating to eyes and respiratory system.	R67:	Vapors may cause drowsiness and dizziness
Safety Phrases:	S2: Keep out of the reach of children S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking.	S25:	Avoid contact with eyes.
		S26:	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
		S33:	Take precautionary measures against static discharges.

SECTION 16 - OTHER INFORMATION

Specification Information:		
Department issuing data sheet:	IPS, Safety Health & Environmental Affairs	All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances).
E-mail address:	<EHSinfo@ipscorp.com>	
Training necessary:	Yes, training in practices and procedures contained in product literature.	
Reissue date / reason for reissue:	4/21/2015 / Updated GHS Standard Format	
Intended Use of Product:	Solvent Cement for PVC Plastic Pipe	

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.



GHS SAFETY DATA SHEET

WELD-ON® C-65™ Low VOC Cleaner for Plastic Pipe

Date Revised: APR 2015

Supersedes: NOV 2014

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: WELD-ON® C-65™ Low VOC Cleaner for Plastic Pipe

PRODUCT USE: Low VOC Cleaner for Plastic Pipe (PVC, CPVC, ABS and Styrene)

SUPPLIER:

MANUFACTURER:

IPS Corporation
17109 South Main Street, Gardena, CA 90248-3127
P.O. Box 379, Gardena, CA 90247-0379
Tel. 1-310-898-3300

EMERGENCY: Transportation: CHEMTEL Tel. 800-255-3924, +1 813-248-0585 (International)

Medical: CHEMTEL Tel. 800-255-3924, +1 813-248-0585 (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health	Environmental	Physical
Acute Toxicity: Category 4 Skin Irritation: Category 3 Skin Sensitization: NO Eye: Category 2B	Acute Toxicity: None Known Chronic Toxicity: None Known	Flammable Liquid Category 2

GHS LABEL:



Signal Word:
Danger

WHMIS CLASSIFICATION: CLASS B, DIVISION 2

Hazard Statements	Precautionary Statements
H225: Highly flammable liquid and vapor H319: Causes serious eye irritation H336: May cause drowsiness or dizziness EUH 066: Repeated exposure may cause skin dryness or cracking.	P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking P261: Avoid breathing dust/fume/gas/mist/vapors/spray P280: Wear protective gloves/protective clothing/eye protection/face protection P337+P313: Get medical advice/attention P403+P233: Store in a well ventilated place. Keep container tightly closed P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Acetone	67-64-1	200-662-2	05-2116297713-35-0000	75 - 100
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	2 - 15

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.

* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

Indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes:	Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact:	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation:	Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion:	Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.
Likely Routes of Exposure:	Inhalation, Eye and Skin Contact
Acute symptoms and effects:	
Inhalation:	Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact:	Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact:	Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion:	May cause nausea, vomiting, diarrhea and mental sluggishness.
Chronic (long-term) effects:	Defatting dermatitis with prolonged use. In humans, passes the placental barrier, detected in maternal milk. (Based on Acetone)

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media:	Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.	HMIS	NFPA	0-Minimal
Unsuitable Extinguishing Media:	Water spray or stream.	Health	2	1-Slight
Exposure Hazards:	Inhalation and dermal contact	Flammability	3	2-Moderate
Combustion Products:	Oxides of carbon and smoke	Reactivity	0	3-Serious
		PPE	B	4-Severe
Protection for Firefighters:	Self-contained breathing apparatus or full-face positive pressure airline masks.			

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions:	Keep away from heat, sparks and open flame. Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment. Prevent contact with skin or eyes (see section 8).
Environmental Precautions:	Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up:	Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up:	Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling:	Avoid breathing of vapor, avoid contact with eyes, skin and clothing. Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods. Do not eat, drink or smoke while handling.
Storage:	Store in ventilated room or shade below 44°C (110°F) and away from direct sunlight. Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates. Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:	Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL	OSHA PEL-Ceiling	CAL/OSHA PEL	CAL/OSHA Ceiling	CAL/OSHA STEL
	Acetone	500 ppm	750 ppm	1000 ppm	N/E	N/E	500 ppm	3000 ppm	750 ppm
	Cyclohexanone	20 ppm	50 ppm	50 ppm	N/E	N/E	25 ppm	N/E	N/E
Engineering Controls:	Use local exhaust as needed.								
Monitoring:	Maintain breathing zone airborne concentrations below exposure limits.								
Personal Protective Equipment (PPE):									
Eye Protection:	Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.								
Skin Protection:	Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion. Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.								
Respiratory Protection:	Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above. With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.								



GHS SAFETY DATA SHEET

WELD-ON® C-65™ Low VOC Cleaner for Plastic Pipe

Date Revised: APR 2015

Supersedes: NOV 2014

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, thin liquid	Odor Threshold:	0.88 ppm (Cyclohexanone)
Odor:	Ketone	Boiling Range:	56°C (133°F) to 156°C (313°F)
pH:	Not Applicable	Evaporation Rate:	> 1.0 (BUAC = 1)
Melting/Freezing Point:	-95°C (-139°F) Based on first melting component: Acetone	Flammability:	Category 2
Boiling Point:	56°C (133°F) Based on first boiling component: Acetone	Flammability Limits:	LEL: 1.1% based on Cyclohexanone UEL: 12.8% based on Acetone
Flash Point:	-20°C (-4°F) T.C.C. based on Acetone	Vapor Pressure:	190 mm Hg @ 20°C (68°F): Acetone
Specific Gravity:	0.794 @23°C (73°F)	Vapor Density:	>2.0 (Air = 1)
Solubility:	Solvent portion soluble in water.	Other Data: Viscosity:	Water-thin
Partition Coefficient n-octanol/water:	Not Available		
Auto-ignition Temperature:	465°C (869°F): Acetone		
Decomposition Temperature:	Not Applicable		
VOC Content:	When applied as directed, per SCAQMD Rule 1171, VOC content is: ≤ 25 g/l.		

SECTION 10 - STABILITY AND REACTIVITY

Stability:	Stable
Hazardous decomposition products:	None in normal use. When forced to burn, this product gives off oxides of carbon and smoke.
Conditions to avoid:	Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials:	Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Toxicity:		LD ₅₀	LC ₅₀		
Acetone	Oral: 5800 mg/kg (rat)	Inhalation 50,100 mg/m3 (rat)			
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)			
<u>Reproductive Effects</u>	<u>Teratogenicity</u>	<u>Mutagenicity</u>	<u>Embryotoxicity</u>	<u>Sensitization to Product</u>	<u>Synergistic Products</u>
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	None Known
Mobility:	In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 25 g/l.
Degradability:	Readily Biodegradable
Bioaccumulation:	Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name:	Flammable Liquid, n.o.s. (Acetone)
Hazard Class:	3
Secondary Risk:	None
Identification Number:	UN 1993
Packing Group:	PG II
Label Required:	Class 3 Flammable Liquid
Marine Pollutant:	NO
EXCEPTION for Ground Shipping	
DOT Limited Quantity: Up to 1L per inner packaging, 30 kg gross weight per package.	
Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D".	
TDG INFORMATION	
TDG CLASS:	FLAMMABLE LIQUID 3
SHIPPING NAME:	Flammable Liquid, n.o.s. (Acetone)
UN NUMBER/PACKING GROUP:	UN 1993, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information:	Highly Flammable, Irritant	Ingredient Listings:	USA TSCA, Europe EINECS, Canada DSL, Australia
Symbols:	F, Xi		AICS, Korea ECL/TCCL, Japan MITI (ENCS)
Risk Phrases:	R11: Highly flammable. R36/37: Irritating to eyes and respiratory system.	R66: Repeated exposure may cause skin dryness or cracking R67: Vapors may cause drowsiness and dizziness	
Safety Phrases:	S2: Keep out of the reach of children S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking.	S25: Avoid contact with eyes. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S33: Take precautionary measures against static discharges.	

SECTION 16 - OTHER INFORMATION

Specification Information:		
Department issuing data sheet:	IPS, Safety Health & Environmental Affairs	All ingredients are compliant with the requirements of the European
E-mail address:	<EHSinfo@ipscorp.com>	Directive on RoHS (Restriction of Hazardous Substances).
Training necessary:	Yes, training in practices and procedures contained in product literature.	
Reissue date / reason for reissue:	4/7/2015 / Updated GHS Standard Format	
Intended Use of Product:	Cleaner for Plastic Pipe (PVC, CPVC, ABS and Styrene)	

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.



GHS SAFETY DATA SHEET

WELD-ON FLOWGUARD GOLD® Low VOC Cement for CPVC Plastic Pipe

Date Revised: APR 2015

Supersedes: NOV 2014

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: WELD-ON FLOWGUARD GOLD® Low VOC Cement for CPVC Plastic Pipe**PRODUCT USE:** Low VOC Solvent Cement for CPVC Plastic Pipe**SUPPLIER:****MANUFACTURER:** IPS Corporation
17109 South Main Street, Gardena, CA 90248-3127
P.O. Box 379, Gardena, CA 90247-0379
Tel. 1-310-898-3300**EMERGENCY:** Transportation: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)**Medical:** CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health	Environmental	Physical
Acute Toxicity: Category 4 Skin Irritation: Category 3 Skin Sensitization: NO Eye: Category 2	Acute Toxicity: None Known Chronic Toxicity: None Known	Flammable Liquid Category 2

GHS LABEL:**Signal Word:**
Danger**WHMIS CLASSIFICATION:** CLASS B, DIVISION 2
CLASS D, DIVISION 2B

Hazard Statements	Precautionary Statements
H225: Highly flammable liquid and vapor H319: Causes serious eye irritation H226: Flammable liquid and vapour H332: Harmful if inhaled H335: May cause respiratory irritation H336: May cause drowsiness or dizziness H351: Suspected of causing cancer EUH019: May form explosive peroxides EUH066: Repeated exposure may cause skin dryness or cracking	P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking P261: Avoid breathing dust/fume/gas/mist/vapors/spray P280: Wear protective gloves/protective clothing/eye protection/face protection P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing P337+P313: Get medical advice/attention P403+P233: Store in a well ventilated place. Keep container tightly closed P403+P233: Store in a well ventilated place. Keep container tightly closed P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Tetrahydrofuran (THF)	109-99-9	203-726-8	05-2116297729-22-0000	30 - 40
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	15 - 25
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	10 - 18

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.

* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

Indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes:	Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin Contact:	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation:	Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion:	Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.
Likely Routes of Exposure:	Inhalation, Eye and Skin Contact
Acute symptoms and effects:	
Inhalation:	Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact:	Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact:	Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion:	May cause nausea, vomiting, diarrhea and mental sluggishness.
Chronic (long-term) effects:	Category 2 Carcinogen

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media:	Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.	HMIS	NFPA	0-Minimal
Unsuitable Extinguishing Media:	Water spray or stream.	Health	2	1-Slight
Exposure Hazards:	Inhalation and dermal contact	Flammability	3	2-Moderate
Combustion Products:	Oxides of carbon, hydrogen chloride and smoke	Reactivity	0	3-Serious
		PPE	B	4-Severe

Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions:	Keep away from heat, sparks and open flame. Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment. Prevent contact with skin or eyes (see section 8).
Environmental Precautions:	Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up:	Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up:	Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling:	Avoid breathing of vapor, avoid contact with eyes, skin and clothing. Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods. Do not eat, drink or smoke while handling.
Storage:	Store in ventilated room or shade below 33°C (90°F) and away from direct sunlight. Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates. Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:	Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL	OSHA PEL-Ceiling	CAL/OSHA PEL	CAL/OSHA Ceiling	CAL/OSHA STEL
	Tetrahydrofuran (THF)	50 ppm	100 ppm	200 ppm	N/E	N/E	200 ppm	N/E	250 ppm
	Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	N/E	N/E	200 ppm	N/E	300 ppm
	Cyclohexanone	20 ppm	50 ppm	50 ppm	N/E	N/E	25 ppm	N/E	N/E

Engineering Controls: Use local exhaust as needed.**Monitoring:** Maintain breathing zone airborne concentrations below exposure limits.**Personal Protective Equipment (PPE):****Eye Protection:** Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.**Skin Protection:** Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.**Respiratory Protection:** Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above.
With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.



GHS SAFETY DATA SHEET

WELD-ON FLOWGUARD GOLD® Low VOC Cement for CPVC Plastic Pipe

Date Revised: APR 2015

Supersedes: NOV 2014

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Yellow, medium syrupy liquid	Odor Threshold:	0.88 ppm (Cyclohexanone)
Odor:	Ketone	Boiling Range:	66°C (151°F) to 156°C (313°F)
pH:	Not Applicable	Evaporation Rate:	> 1.0 (BUAC = 1)
Melting/Freezing Point:	-108.5°C (-163.3°F) Based on first melting component: THF	Flammability:	Category 2
Boiling Point:	66°C (151°F) Based on first boiling component: THF	Flammability Limits:	LEL: 1.1% based on Cyclohexanone UEL: 11.8% based on THF
Flash Point:	-20°C (-4°F) TCC based on THF	Vapor Pressure:	129 mm Hg @ 20°C (68°F) based on THF
Specific Gravity:	0.986 @ 23°C (73°F)	Vapor Density:	>2 (Air = 1)
Solubility:	Solvent portion soluble in water. Resin portion separates out.	Other Data: Viscosity:	Medium bodied
Partition Coefficient n-octanol/water:	Not Available		
Auto-ignition Temperature:	321°C (610°F) based on THF		
Decomposition Temperature:	Not Applicable		
VOC Content:	When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 490 g/l.		

SECTION 10 - STABILITY AND REACTIVITY

Stability:	Stable
Hazardous decomposition products:	None in normal use. When forced to burn, this product gives off oxides of carbon, hydrogen chloride and smoke.
Conditions to avoid:	Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials:	Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Toxicity:	LD ₅₀	LC ₅₀	Target Organs
Tetrahydrofuran (THF)	Oral: 2842 mg/kg (rat)	Inhalation 3 hrs. 21,000 mg/m ³ (rat)	STOT SE3
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m ³ (rat)	STOT SE3
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)	

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	None Known
Mobility:	In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 490 g/l.
Degradability:	Not readily biodegradable
Bioaccumulation:	Minimal to none

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name:	Adhesives
Hazard Class:	3
Secondary Risk:	None
Identification Number:	UN 1133
Packing Group:	PG II
Label Required:	Class 3 Flammable Liquid
Marine Pollutant:	NO

EXCEPTION for Ground Shipping

DOT Limited Quantity: Up to 5L per inner packaging, 30 kg gross weight per package.
Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D".

TDG INFORMATION

TDG CLASS:	FLAMMABLE LIQUID 3
SHIPPING NAME:	ADHESIVES
UN NUMBER/PACKING GROUP:	UN 1133, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information:	Highly Flammable, Irritant, Carc. Cat. 2	Ingredient Listings:	USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)
Symbols:	F, Xi		
Risk Phrases:	R11: Highly flammable. R19: May form explosive peroxide R20: Harmful by inhalation.	R36/37: Irritating to eyes and respiratory system. R66: Repeated exposure may cause skin dryness or cracking R67: Vapors may cause drowsiness and dizziness	
Safety Phrases:	S2: Keep out of the reach of children S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking. S25: Avoid contact with eyes.	S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S29: Do not empty into drains. S33: Take precautionary measures against static discharges. S46: If swallowed, seek medical advice immediately and show this container or label.	

SECTION 16 - OTHER INFORMATION

Specification Information:		
Department issuing data sheet:	IPS, Safety Health & Environmental Affairs	All ingredients are compliant with the requirements of the European
E-mail address:	<EHSinfo@ipscorp.com>	Directive on RoHS (Restriction of Hazardous Substances).
Training necessary:	Yes, training in practices and procedures contained in product literature.	
Reissue date / reason for reissue:	4/8/2015 / Updated GHS Standard Format	
Intended Use of Product:	Solvent Cement for CPVC Plastic Pipe	

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.



GHS SAFETY DATA SHEET

WELD-ON® P-68™ Low VOC Primer for PVC and CPVC Plastic Pipe

Date Revised: APR 2015

Supersedes: NOV 2014

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: WELD-ON® P-68™ Low VOC Primer for PVC and CPVC Plastic Pipe

PRODUCT USE: Low VOC Primer for PVC and CPVC Plastic Pipe

SUPPLIER:

MANUFACTURER: IPS Corporation
17109 South Main Street, Gardena, CA 90248-3127
P.O. Box 379, Gardena, CA 90247-0379
Tel. 1-310-898-3300

EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

Medical: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health	Environmental	Physical
Acute Toxicity: Category 4 Skin Irritation: Category 3 Skin Sensitization: NO Eye: Category 2	Acute Toxicity: None Known Chronic Toxicity: None Known	Flammable Liquid Category 2

GHS LABEL:



Signal Word:

Danger

WHMIS CLASSIFICATION:

CLASS B, DIVISION 2

CLASS D, DIVISION 2B

Hazard Statements	Precautionary Statements
H225: Highly flammable liquid and vapor H319: Causes serious eye irritation H332: Harmful if inhaled H335: May cause respiratory irritation H336: May cause drowsiness or dizziness H351: Suspected of causing cancer EUH019: May form explosive peroxides	P210: Keep away from heat/sparks/open flames/hot surfaces - No smoking P261: Avoid breathing dust/fume/gas/mist/vapors/spray P280: Wear protective gloves/protective clothing/eye protection/face protection P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing P403+P233: Store in a well ventilated place. Keep container tightly closed P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Tetrahydrofuran (THF)	109-99-9	203-726-8	05-2116297729-22-0000	20 - 35
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	15 - 25
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	10 - 30
Acetone	67-64-1	200-662-2	05-2116297713-35-0000	25 - 40

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.
* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes:	Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact:	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation:	Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion:	Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.
Likely Routes of Exposure:	Inhalation, Eye and Skin Contact
Acute symptoms and effects:	
Inhalation:	Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact:	Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact:	Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion:	May cause nausea, vomiting, diarrhea and mental sluggishness.
Chronic (long-term) effects:	Category 2 Carcinogen

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media:	Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.	HMIS	NFPA	0-Minimal
Unsuitable Extinguishing Media:	Water spray or stream.	Health	2	1-Slight
Exposure Hazards:	Inhalation and dermal contact	Flammability	3	2-Moderate
Combustion Products:	Oxides of carbon and smoke	Reactivity	0	3-Serious
		PPE	B	4-Severe
Protection for Firefighters:	Self-contained breathing apparatus or full-face positive pressure airline masks.			

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions:	Keep away from heat, sparks and open flame. Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment. Prevent contact with skin or eyes (see section 8).
Environmental Precautions:	Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up:	Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up:	Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling:	Avoid breathing of vapor, avoid contact with eyes, skin and clothing. Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods. Do not eat, drink or smoke while handling.
Storage:	Store in ventilated room or shade below 44°C (110°F) and away from direct sunlight. Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates. Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:	Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL	OSHA PEL-Ceiling	CAL/OSHA PEL	CAL/OSHA Ceiling	CAL/OSHA STEL
	Tetrahydrofuran (THF)	50 ppm	100 ppm	200 ppm	N/E	N/E	200 ppm	N/E	250 ppm
	Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	N/E	N/E	200 ppm	N/E	300 ppm
	Cyclohexanone	20 ppm	50 ppm	50 ppm	N/E	N/E	25 ppm	N/E	N/E
	Acetone	500 ppm	750 ppm	1000 ppm	N/E	N/E	500 ppm	3000 ppm	750 ppm

Engineering Controls: Use local exhaust as needed.

Monitoring: Maintain breathing zone airborne concentrations below exposure limits.

Personal Protective Equipment (PPE):

Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.

Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.

Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.

Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above. With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.



GHS SAFETY DATA SHEET

WELD-ON® P-68™ Low VOC Primer for PVC and CPVC Plastic Pipe

Date Revised: APR 2015

Supersedes: NOV 2014

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear or purple, thin liquid	Odor Threshold:	0.88 ppm (Cyclohexanone)
Odor:	Ethereal	Boiling Range:	56°C (133°F) to 156°C (313°F)
pH:	Not Applicable	Evaporation Rate:	> 1.0 (BUAC = 1)
Melting/Freezing Point:	-108.5°C (-163.3°F) Based on first melting component: THF	Flammability:	Category 2
Boiling Point:	56°C (133°F) Based on first boiling component: Acetone	Flammability Limits:	LEL: 1.1% based on Cyclohexanone
Flash Point:	-20°C (-4°F) TCC based on Acetone		UEL: 12.8% based on Acetone
Specific Gravity:	0.842 @23°C (73°F)	Vapor Pressure:	190 mm Hg @ 20°C (68°F) Acetone
Solubility:	Solvent portion soluble in water. Resin portion separates out.	Vapor Density:	>2.0 (Air = 1)
Partition Coefficient n-octanol/water:	Not Available	Other Data: Viscosity:	Water-thin
Auto-ignition Temperature:	321°C (610°F) based on THF		
Decomposition Temperature:	Not Applicable		
VOC Content:	When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 550 g/l.		

SECTION 10 - STABILITY AND REACTIVITY

Stability:	Stable
Hazardous decomposition products:	None in normal use. When forced to burn, this product gives off oxides of carbon and smoke.
Conditions to avoid:	Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials:	Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Toxicity:	LD ₅₀	LC ₅₀	Target Organs
Tetrahydrofuran (THF)	Oral: 2842 mg/kg (rat)	Inhalation 3 hrs. 21,000 mg/m ³ (rat)	STOT SE3
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m ³ (rat)	STOT SE3
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)	
Acetone	Oral: 5800 mg/kg (rat)	Inhalation 50,100 mg/m ³ (rat)	STOT SE3

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	None Known
Mobility:	In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 550 g/l.
Degradability:	Not available
Bioaccumulation:	Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name:	Flammable Liquid, n.o.s. (Acetone, Tetrahydrofuran)
Hazard Class:	3
Secondary Risk:	None
Identification Number:	UN 1993
Packing Group:	PG II
Label Required:	Class 3 Flammable Liquid
Marine Pollutant:	NO

EXCEPTION for Ground Shipping	
DOT Limited Quantity:	Up to 1L per inner packaging, 30 kg gross weight per package.
Consumer Commodity:	Depending on packaging, these quantities may qualify under DOT as "ORM-D" .

TDG INFORMATION	
TDG CLASS:	FLAMMABLE LIQUID 3
SHIPPING NAME:	Flammable Liquid, n.o.s. (Acetone, Tetrahydrofuran)
UN NUMBER/PACKING GROUP:	UN 1993, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information:	Highly Flammable, Irritant, Carc. Cat. 2	Ingredient Listings:	USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)
Symbols:	F, Xi		
Risk Phrases:	R11: Highly flammable. R20: Harmful by inhalation. R36/37: Irritating to eyes and respiratory system.	R66: Repeated exposure may cause skin dryness or cracking R67: Vapors may cause drowsiness and dizziness	
Safety Phrases:	S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking. S25: Avoid contact with eyes.	S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S33: Take precautionary measures against static discharges. S46: If swallowed, seek medical advice immediately and show this container or label.	

SECTION 16 - OTHER INFORMATION

Specification Information:		
Department issuing data sheet:	IPS, Safety Health & Environmental Affairs	All ingredients are compliant with the requirements of the European
E-mail address:	<EHSinfo@ipscorp.com>	Directive on RoHS (Restriction of Hazardous Substances).
Training necessary:	Yes, training in practices and procedures contained in product literature.	
Reissue date / reason for reissue:	4/17/2015 / Updated GHS Standard Format	
Intended Use of Product:	Primer for PVC and CPVC Plastic Pipe	

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.



GHS SAFETY DATA SHEET

WELD-ON® P-70™ Low VOC Primer for PVC and CPVC Plastic Pipe

Date Revised: MAY 2016

Supersedes: APR 2015

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: WELD-ON® P-70™ Low VOC Primer for PVC and CPVC Plastic Pipe

PRODUCT USE: Low VOC Primer for PVC and CPVC Plastic Pipe

SUPPLIER:

MANUFACTURER: IPS Corporation
17109 South Main Street, Gardena, CA 90248-3127
P.O. Box 379, Gardena, CA 90247-0379
Tel. 1-310-898-3300

EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

Medical: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health	Environmental	Physical
Acute Toxicity: Category 4 Skin Irritation: Category 3 Skin Sensitization: NO Eye: Category 2	Acute Toxicity: None Known Chronic Toxicity: None Known	Flammable Liquid Category 2

GHS LABEL:



Signal Word:

Danger

WHMIS CLASSIFICATION:

CLASS B, DIVISION 2

CLASS D, DIVISION 2B

Hazard Statements	Precautionary Statements
H225: Highly flammable liquid and vapor H319: Causes serious eye irritation H332: Harmful if inhaled H335: May cause respiratory irritation H336: May cause drowsiness or dizziness H351: Suspected of causing cancer EUH019: May form explosive peroxides	P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking P261: Avoid breathing dust/fume/gas/mist/vapors/spray P280: Wear protective gloves/protective clothing/eye protection/face protection P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing P403+P233: Store in a well ventilated place. Keep container tightly closed P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Tetrahydrofuran (THF)	109-99-9	203-726-8	05-2116297729-22-0000	45 - 59
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	19 - 29
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	5 - 15
Acetone	67-64-1	200-662-2	05-2116297713-35-0000	5 - 20

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.

* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

Indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes:	Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact:	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation:	Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion:	Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.
Likely Routes of Exposure:	Inhalation; Eye and Skin Contact
Acute symptoms and effects:	
Inhalation:	Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact:	Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact:	Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion:	May cause nausea, vomiting, diarrhea and mental sluggishness.
Chronic (long-term) effects:	Category 2 Carcinogen

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media:	Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.	HMIS	NFPA	0-Minimal
Unsuitable Extinguishing Media:	Water spray or stream.	Health	2	1-Slight
Exposure Hazards:	Inhalation and dermal contact	Flammability	3	2-Moderate
Combustion Products:	Oxides of carbon and smoke	Reactivity	0	3-Serious
		PPE	B	4-Severe
Protection for Firefighters:	Self-contained breathing apparatus or full-face positive pressure airline masks.			

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions:	Keep away from heat, sparks and open flame. Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment. Prevent contact with skin or eyes (see section 8).
Environmental Precautions:	Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up:	Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up:	Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling:	Avoid breathing of vapor, avoid contact with eyes, skin and clothing. Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods. Do not eat, drink or smoke while handling.
Storage:	Store in ventilated room or shade below 44°C (110°F) and away from direct sunlight. Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates. Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:	Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL	OSHA PEL-Ceiling	CAL/OSHA PEL	CAL/OSHA Ceiling	CAL/OSHA STEL
	Tetrahydrofuran (THF)	50 ppm	100 ppm	200 ppm	N/E	N/E	200 ppm	N/E	250 ppm
	Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	N/E	N/E	200 ppm	N/E	300 ppm
	Cyclohexanone	20 ppm	50 ppm	50 ppm	N/E	N/E	25 ppm	N/E	N/E
	Acetone	500 ppm	750 ppm	1000 ppm	N/E	N/E	500 ppm	3000 ppm	750 ppm
Engineering Controls:	Use local exhaust as needed.								
Monitoring:	Maintain breathing zone airborne concentrations below exposure limits.								
Personal Protective Equipment (PPE):									
Eye Protection:	Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.								
Skin Protection:	Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion. Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.								
Respiratory Protection:	Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above. With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.								



GHS SAFETY DATA SHEET

WELD-ON® P-70™ Low VOC Primer for PVC and CPVC Plastic Pipe

Date Revised: MAY 2016

Supersedes: APR 2015

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear or purple, thin liquid	Odor Threshold:	0.88 ppm (Cyclohexanone)
Odor:	Ethereal	Boiling Range:	56°C (133°F) to 156°C (313°F)
pH:	Not Applicable	Evaporation Rate:	> 1.0 (BUAC = 1)
Melting/Freezing Point:	-108.5°C (-163.3°F) Based on first melting component: THF	Flammability:	Category 2
Boiling Point:	56°C (133°F) Based on first boiling component: Acetone	Flammability Limits:	LEL: 1.1% based on Cyclohexanone UEL: 12.8% based on Acetone
Flash Point:	-20°C (-4°F) TCC based on Acetone	Vapor Pressure:	190 mm Hg @ 20°C (68°F) Acetone
Specific Gravity:	0.858 @23°C (73°F)	Vapor Density:	>2.0 (Air = 1)
Solubility:	Solvent portion soluble in water.	Other Data: Viscosity:	Water-thin
Partition Coefficient n-octanol/water:	Not Available		
Auto-ignition Temperature:	321°C (610°F) based on THF		
Decomposition Temperature:	Not Applicable		
VOC Content:	When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 550 g/l.		

SECTION 10 - STABILITY AND REACTIVITY

Stability:	Stable
Hazardous decomposition products:	None in normal use. When forced to burn, this product gives off oxides of carbon and smoke.
Conditions to avoid:	Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials:	Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Toxicity:	LD ₅₀	LC ₅₀	Target Organs
Tetrahydrofuran (THF)	Oral: 2842 mg/kg (rat)	Inhalation 3 hrs. 21,000 mg/m ³ (rat)	STOT SE3
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m ³ (rat)	STOT SE3
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)	
Acetone	Oral: 5800 mg/kg (rat)	Inhalation 50,100 mg/m ³ (rat)	STOT SE3

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	None Known
Mobility:	In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 550 g/l.
Degradability:	Not available
Bioaccumulation:	Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name:	Flammable Liquid, n.o.s. (Acetone, Tetrahydrofuran)
Hazard Class:	3
Secondary Risk:	None
Identification Number:	UN 1993
Packing Group:	PG II
Label Required:	Class 3 Flammable Liquid
Marine Pollutant:	NO

EXCEPTION for Ground Shipping
DOT Limited Quantity: Up to 1L per inner packaging, 30 kg gross weight per package.
Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D" .

TDG INFORMATION	
TDG CLASS:	FLAMMABLE LIQUID 3
SHIPPING NAME:	Flammable Liquid, n.o.s. (Acetone, Tetrahydrofuran)
UN NUMBER/PACKING GROUP:	UN 1993, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information:	Highly Flammable, Irritant, Carc. Cat. 2	Ingredient Listings:	USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)
Symbols:	F, Xi		
Risk Phrases:	R11: Highly flammable. R20: Harmful by inhalation. R36/37: Irritating to eyes and respiratory system.	R66: Repeated exposure may cause skin dryness or cracking R67: Vapors may cause drowsiness and dizziness	
Safety Phrases:	S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking. S25: Avoid contact with eyes.	S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S33: Take precautionary measures against static discharges. S46: If swallowed, seek medical advice immediately and show this container or label.	

SECTION 16 - OTHER INFORMATION

Specification Information:		
Department issuing data sheet:	IPS, Safety Health & Environmental Affairs	All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances).
E-mail address:	<EHSinfo@ipscorp.com>	
Training necessary:	Yes, training in practices and procedures contained in product literature.	
Reissue date / reason for reissue:	5/24/2016 / Updated GHS Standard Format	
Intended Use of Product:	Primer for PVC and CPVC Plastic Pipe	

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.



GHS SAFETY DATA SHEET

Date Revised: APR 2012

Supersedes:

Weld-On® 780™ Plumbing Clear Low VOC Cement for PVC Plastic Pipe

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Weld-On® 780™ Plumbing Clear Low VOC Cement for PVC Plastic Pipe**PRODUCT USE:** Low VOC Solvent Cement for PVC Plastic Pipe**SUPPLIER:****MANUFACTURER:** IPS Corporation

17109 South Main Street, Gardena, CA 90248-3127

P.O. Box 379, Gardena, CA 90247-0379

Tel. 1-310-898-3300

EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, 813-248-0585 (International)**Medical:** Tel. 800.451.8346, 760.602.8703 3E Company (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health		Environmental		Physical	
Acute Toxicity:	Category 4	Acute Toxicity:	None Known	Flammable Liquid	Category 2
Skin Irritation:	Category 3	Chronic Toxicity:	None Known		
Skin Sensitization:	NO				
Eye:	Category 2B				

GHS LABEL:



OR

**Signal Word:**
Danger**WHMIS CLASSIFICATION:** CLASS B, DIVISION 2

Hazard Statements

H225: Highly flammable liquid and vapor
H319: Causes serious eye irritation
H335: May cause respiratory irritation
H336: May cause drowsiness or dizziness
EUH019: May form explosive peroxides

Precautionary Statements

P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
P261: Avoid breathing dust/fume/gas/mist/vapors/spray
P280: Wear protective gloves/protective clothing/eye protection/face protection
P337+P313: Get medical advice/attention
P403+P233: Store in a well ventilated place. Keep container tightly closed
P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Tetrahydrofuran (THF)	109-99-9	203-726-8	05-2116297729-22-0000	10 - 30
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	25 - 40
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	20 - 30
Acetone	67-64-1	200-662-2	05-2116297713-35-0000	5 - 15

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.

* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.
Unsuitable Extinguishing Media: Water spray or stream.
Exposure Hazards: Inhalation and dermal contact
Combustion Products: Oxides of carbon, hydrogen chloride and smoke

HMIS	NFPA	
Health	2	0-Minimal
Flammability	3	1-Slight
Reactivity	0	2-Moderate
PPE	0	3-Serious
	B	4-Severe

Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.
Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
Do not eat, drink or smoke while handling.
Storage: Store in ventilated room or shade below 44°C (110°F) and away from direct sunlight.
Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
Follow all precautionary information on container label, product bulletins and solvent cementing literature.

Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up: Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up: Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
Do not eat, drink or smoke while handling.
Storage: Store in ventilated room or shade below 44°C (110°F) and away from direct sunlight.
Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:	Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL:
	Tetrahydrofuran (THF)	50 ppm	100 ppm	200 ppm	
	Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	
	Cyclohexanone	20 ppm	50 ppm	50 ppm	
	Acetone	500 ppm	750 ppm	1000 ppm	

Engineering Controls: Use local exhaust as needed.

Monitoring: Maintain breathing zone airborne concentrations below exposure limits.

Personal Protective Equipment (PPE):

Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.

Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.

Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above.
With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.



GHS SAFETY DATA SHEET

Weld-On® 780™ Plumbing Clear Low VOC Cement for PVC Plastic Pipe

Date Revised: APR 2012

Supersedes:

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, regular syrupy liquid	Odor Threshold:	0.88 ppm (Cyclohexanone)
Odor:	Ketone	Boiling Range:	56 °C (133 °F) to 156 °C (313 °F)
pH:	Not Applicable	Evaporation Rate:	> 1.0 (BUAC = 1)
Melting/Freezing Point:	-108.5 °C (-163.3 °F) Based on first melting component: THF	Flammability:	Category 2
Boiling Point:	56 °C (133 °F) Based on first boiling component: Acetone	Flammability Limits:	LEL: 1.1% based on Cyclohexanone UEL: 12.8% based on Acetone
Flash Point:	-20 °C (-4 °F) TCC based on Acetone	Vapor Pressure:	190 mm Hg @ 20 °C (68 °F) Acetone
Specific Gravity:	0.907 @23 °C (73 °F)	Vapor Density:	>2.0 (Air = 1)
Solubility:	Solvent portion soluble in water. Resin portion separates out.	Other Data: Viscosity:	Regular bodied
Partition Coefficient n-octanol/water:	Not Available		
Auto-ignition Temperature:	321 °C (610 °F) based on THF		
Decomposition Temperature:	Not Applicable		
VOC Content:	When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 510 g/l.		

SECTION 10 - STABILITY AND REACTIVITY

Stability:	Stable
Hazardous decomposition products:	None in normal use. When forced to burn, this product gives off oxides of carbon, hydrogen chloride and smoke.
Conditions to avoid:	Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials:	Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, Eye and Skin Contact

Acute symptoms and effects:

Inhalation:	Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact:	Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact:	Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion:	May cause nausea, vomiting, diarrhea and mental sluggishness.

Chronic (long-term) effects:

None known to humans

Toxicity:	LD ₅₀	LC ₅₀
Tetrahydrofuran (THF)	Oral: 2842 mg/kg (rat)	Inhalation 3 hrs. 21,000 mg/m ³ (rat)
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m ³ (rat)
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)
Acetone	Oral: 5800 mg/kg (rat)	Inhalation 50,100 mg/m ³ (rat)

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	None Known
Mobility:	In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 510 g/l.
Degradability:	Biodegradable
Bioaccumulation:	Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name:	Adhesives
Hazard Class:	3
Secondary Risk:	None
Identification Number:	UN 1133
Packing Group:	PG II
Label Required:	Class 3 Flammable Liquid
Marine Pollutant:	NO

EXCEPTION for Ground Shipping

DOT Limited Quantity: Up to 5L per inner packaging, 30 kg gross weight per package.
Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D".

TDG INFORMATION

TDG CLASS:	FLAMMABLE LIQUID 3
SHIPPING NAME:	ADHESIVES
UN NUMBER/PACKING GROUP:	UN 1133, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information:	Highly Flammable, Irritant	Ingredient Listings:	USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)
Symbols:	F, Xi		
Risk Phrases:	R11: Highly flammable. R36/37: Irritating to eyes and respiratory system.	R66: Repeated exposure may cause skin dryness or cracking R67: Vapors may cause drowsiness and dizziness	
Safety Phrases:	S2: Keep out of the reach of children S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking.	S25: Avoid contact with eyes. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S33: Take precautionary measures against static discharges.	

SECTION 16 - OTHER INFORMATION

Specification Information:		
Department issuing data sheet:	IPS, Safety Health & Environmental Affairs	All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances).
E-mail address:	<EHSinfo@ipscorp.com>	
Training necessary:	Yes, training in practices and procedures contained in product literature.	
Reissue date / reason for reissue:	6/15/2012 / Updated GHS Standard Format	
Intended Use of Product:	Solvent Cement for PVC Plastic Pipe	

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.



Safety Data Sheet

24 Hour Emergency Phone Numbers

Medical/Poison Control:

In U.S.: Call 1-800-222-1222

Outside U.S.: Call your local poison control center

Transportation/National Response Center:

1-800-535-5053

1-352-323-3500

NOTE: The National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

IMPORTANT: Provide this information to employees, customers, and users of this product. Read this SDS before handling or disposing of this product. This product is covered by the OSHA Hazard Communication Standard and this document has been prepared in accordance with requirements of this standard. All abbreviated terms used in this MSDS are further described in Section 16.

1. Identification

This Safety Data Sheet is available in American Spanish upon request.
Los Datos de Seguridad pueden obtenerse en Espanol si lo requiere.

Product Name:	Kwik Seal Plus - Clear	Revision Date:	6/19/2015
Product UPC Number:	18546, 18516	Supersedes Date:	New SDS
Product Use/Class:	Caulking Compound	SDS No:	00077314001
Manufacturer:	DAP Products Inc. 2400 Boston Street Suite 200 Baltimore, MD 21224-4723 888-327-8477 (non - emergency matters)		
Preparer:	Regulatory Department		

2. Hazards Identification

EMERGENCY OVERVIEW: Under normal use conditions, this product is not expected to cause adverse health effects.

GHS Classification

Not a hazardous substance or mixture.

Symbol(s) of Product

None

Signal Word

Not a hazardous substance or mixture.

3. Composition/Information on Ingredients

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>Wt. %</u>	<u>GHS Symbols</u>	<u>GHS Statements</u>
Texanol	25265-77-4	1.0-2.5	GHS03	H270

The text for GHS Hazard Statements shown above (if any) is given in the "Other information" Section.

4. First-aid Measures

FIRST AID - INHALATION: Material is not likely to present an inhalation hazard at ambient conditions. If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical attention immediately.

FIRST AID - SKIN CONTACT: No health hazards are known to exist. In case of contact, wash skin immediately with soap and water.

FIRST AID - EYE CONTACT: In case of contact, immediately flush eyes with large quantities of water for at least 15 minutes until irritation subsides. Get medical attention immediately.

FIRST AID - INGESTION: If swallowed, DO NOT INDUCE VOMITING. Get medical attention immediately.

5. Fire-fighting Measures

UNUSUAL FIRE AND EXPLOSION HAZARDS: 465 <undefined>

SPECIAL FIREFIGHTING PROCEDURES: Wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear. Use water spray to cool exposed surfaces.

EXTINGUISHING MEDIA: Carbon Dioxide, Dry Chemical, Foam, Water Fog

6. Accidental Release Measures

ENVIRONMENTAL MEASURES: No Information

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Contain spilled material and remove with inert absorbent. Dispose of contaminated absorbent, container and unused contents in accordance with local, state and federal regulations. Scrape up dried material and place into containers. Use personal protective equipment as necessary. In case of spillage, absorb with inert material and dispose of in accordance with applicable regulations.

7. Handling and Storage

HANDLING: KEEP OUT OF REACH OF CHILDREN! DO NOT TAKE INTERNALLY. Use only with adequate ventilation. Ensure fresh air entry during application and drying. Wash thoroughly after handling.

STORAGE: Avoid excessive heat and freezing. Do not store at temperatures above 120 degrees F. Store away from caustics and oxidizers.

8. Exposure Controls/Personal Protection

Ingredients with Occupational Exposure Limits

<u>Chemical Name</u>	<u>ACGIH TLV-TWA</u>	<u>ACGIH-TLV STEL</u>	<u>OSHA PEL-TWA</u>	<u>OSHA PEL-CEILING</u>
Texanol	N.E.	N.E.	N.E.	N.E.

Further Advice: MEL = Maximum Exposure Limit OES = Occupational Exposure Standard SUP = Supplier's Recommendation
Sk = Skin Sensitizer N.E. = Not Established

Personal Protection



RESPIRATORY PROTECTION: No personal respiratory protective equipment normally required.



SKIN PROTECTION: Rubber gloves.



EYE PROTECTION: Goggles or safety glasses with side shields.



OTHER PROTECTIVE EQUIPMENT: Not required under normal use.



HYGIENIC PRACTICES: Wash hands before breaks and at the end of workday. Remove and wash contaminated clothing before re-use.

9. Physical and Chemical Properties

Appearance:	White (changes to clear as it cures)	Physical State:	Paste
Odor:	Slight	Odor Threshold:	Not Established
Density, g/cm³:	1.05 - 1.05	pH:	Between 7.0 and 12.0
Freeze Point, °C:	Not Established	Viscosity (mPa.s):	Not Established
Solubility in Water:	Not Established	Partition Coeff., n-octanol/water:	Not Established
Decomposition Temperature, °C:	Not Established	Explosive Limits, %:	N.I. - N.I.
Boiling Range, °C:	N.I. - N.I.	Auto-Ignition Temperature, °C	Not Established
Minimum Flash Point, °C:	93.3	Vapor Pressure, mmHg:	No Information
Evaporation Rate:	Slower Than n-Butyl Acetate	Flash Method:	Seta Closed Cup
Vapor Density:	Heavier Than Air	Flammability:	No Information
Combustibility:	Does not support combustion		

(See "Other information" Section for abbreviation legend)

(If product is an aerosol, the flash point stated above is that of the propellant.)

10. Stability and Reactivity

STABILITY: Stable under recommended storage conditions.

CONDITIONS TO AVOID: Excessive heat and freezing.

INCOMPATIBILITY: Incompatible with strong bases and oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Normal decomposition products, i.e., CO_x, NO_x.

11. Toxicological Information

EFFECT OF OVEREXPOSURE - INHALATION: Under normal use conditions, this product is not expected to cause adverse health effects. Inhalation of vapors in high concentration may cause mild irritation of respiratory system (nose, mouth, mucous membranes).

EFFECT OF OVEREXPOSURE - SKIN CONTACT: Under normal use conditions, this product is not expected to cause adverse health effects. Prolonged or repeated contact with skin may cause mild irritation.

EFFECT OF OVEREXPOSURE - EYE CONTACT: Under normal use conditions, this product is not expected to cause adverse health effects. Direct eye contact may cause irritation.

EFFECT OF OVEREXPOSURE - INGESTION: Under normal use conditions, this product is not expected to cause adverse health effects. Single dose oral toxicity is very low. Amounts ingested incidental to industrial handling are not likely to cause injury; however, ingestion of large amounts may cause injury.

CARCINOGENICITY: No Information

EFFECT OF OVEREXPOSURE - CHRONIC HAZARDS: Repeated or prolonged exposure may cause irritation of eyes and skin.

PRIMARY ROUTE(S) OF ENTRY: Inhalation, Skin Contact

Acute Toxicity Values

The acute effects of this product have not been tested. Data on individual components are tabulated below

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Vapor LC50</u>
25265-77-4	Texanol	3200 mg/kg Rat	>15200 mg/kg Rat	N.I.

N.I. = No Information

12. Ecological Information

ECOLOGICAL INFORMATION: Ecological injuries are not known or expected under normal use.

13. Disposal Information

DISPOSAL INFORMATION: This product does not meet the definition of a hazardous waste according to U.S. EPA Hazardous Waste Management Regulation, 40 CFR Section 261. Dispose as hazardous waste according to all local, state, federal and provincial regulations. State and Local regulations/restrictions are complex and may differ from Federal regulations. Responsibility for proper waste disposal is with the owner of the waste.

14. Transport Information

SPECIAL TRANSPORT PRECAUTIONS: No Information

DOT UN/NA Number:	N.A.
DOT Proper Shipping Name:	Not Regulated.
DOT Technical Name:	N.A.
DOT Hazard Class:	N.A.
Hazard SubClass:	N.A.
Packing Group:	N.A.

15. Regulatory Information**U.S. Federal Regulations:****CERCLA - SARA Hazard Category**

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Acute Health Hazard, Chronic Health Hazard

SARA SECTION 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

No Sara 313 components exist in this product.

TOXIC SUBSTANCES CONTROL ACT:

All ingredients in this product are either on TSCA inventory list, or otherwise exempt.

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No TSCA 12(b) components exist in this product.

CALIFORNIA PROPOSITION 65 CARCINOGENS AND REPRODUCTIVE TOXINS

CALIFORNIA PROPOSITION 65: No Information

CANADIAN WHMIS:

WHMIS Class	Consumer Commodity
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Revision Date:	6/19/2015	Supersedes Date:	New MSDS
Reason for revision:	HazCom2012/GHS Conversion		
Datasheet produced by:	Regulatory Department		

Health:	1	Flammability:	0	Reactivity:	0	Personal Protection:	X
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DAP believes the data and statements contained herein are accurate as of the date hereof. They are offered in good faith as typical values and not as a product specification. NO WARRANTY OF MERCHANTABILITY, WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE WITH REGARD TO THE INFORMATION HEREIN PROVIDED OR THE PRODUCT TO WHICH THE INFORMATION REFERS. Since this document is intended only as a guide to the appropriate use and precautionary handling of the referenced product by a properly trained person, it is therefore the responsibility of the user to (i) review the recommendations with due consideration for the specific context of the intended use and (ii) determine if they are appropriate.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name. : X-PANDO PIPE JOINT COMPOUND

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Sealant for threaded and flanged pipe.

1.3. Details of the supplier of the safety data sheet

X-Pando Products Company
204 Stokes Avenue
Ewing, NJ 08638

1.4. Emergency telephone number

Emergency number : 609-394-0150

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

STOT SE 3 H335
STOT RE 2 H373

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H335 - May cause respiratory irritation
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary statements (GHS-US) :

P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
P271 - Use only outdoors or in a well-ventilated area
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P312 - Call a POISON CENTER/doctor/.../if you feel unwell
P314 - Get medical advice and attention if you feel unwell
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to ...

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Magnesium chloride, hexahydrate	(CAS No.) 7791-18-6	15 - 40	Not classified
Limestone	(CAS No.) 1317-65-3	15 - 40	Not classified
Magnesium oxide	(CAS No.) 1309-48-4	10 - 30	Not classified
Graphite	(CAS No.) 7782-42-5	7 - 13	Not classified
Dextrin	(CAS No.) 9004-53-9	1 - 5	Not classified

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Move victim to fresh air and treat symptomatically.

First-aid measures after skin contact : Wash the affected area with soap and water. Seek medical attention if irritation persists.

X-PANDO PIPE JOINT COMPOUND

Safety Data Sheet

First-aid measures after eye contact	: Irrigate eyes with large amounts of water for at least 15 minutes, while holding the eyelid(s) open. Seek medical attention if irritation persists.
First-aid measures after ingestion	: Contact local poison control center or physician IMMEDIATELY.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation	: May cause irritation to respiratory tract and lung damage if exposure is repeated or prolonged. Although unlikely, inhalation of fumes from heated material may cause metal fume fever, a flu-like illness characterized by delayed symptoms of cough, muscle pains chills and nausea.
Symptoms/injuries after skin contact	: This product may cause skin irritation.
Symptoms/injuries after eye contact	: May cause mechanical irritation if exposed to large amounts of the dust.
Symptoms/injuries after ingestion	: This product may cause gastrointestinal harm and nausea if it is swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	: None.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Fire produces oxides of magnesium, calcium and carbon.
Explosion hazard	: None known.

5.3. Advice for firefighters

Protection during firefighting	: Firefighters should wear full fire-fighting turn-out gear (full Bunker gear) including NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Avoid creating or spreading dust.
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6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

None.

6.3. Methods and material for containment and cleaning up

For containment	: If possible, stop flow of product.
Methods for cleaning up	: Vacuum or scoop spilled material and place in closed containers for disposal. Avoid dust generation. Dispose of waste in accordance with local, state and federal regulations.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Avoid generating dust.
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7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Store in a closed container in dry area.
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7.3. Specific end use(s)

Sealant for threaded and flanged pipe.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Magnesium oxide (1309-48-4)		
USA ACGIH	ACGIH TWA (mg/m³)	10 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³
Limestone (1317-65-3)		
USA OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³

X-PANDO PIPE JOINT COMPOUND

Safety Data Sheet

Graphite (7782-42-5)

USA ACGIH	ACGIH TWA (mg/m ³)	2 mg/m ³ (all forms except graphite fibers)
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³ (synthetic)

8.2. Exposure controls

Appropriate engineering controls	: Local exhaust and general ventilation must be adequate to meet exposure standards.
Hand protection	: Wear chemical resistant, impervious gloves for routine industrial use.
Eye protection	: Chemical splash goggles or safety glasses. Emergency eye wash stations and showers should be available within the work area.
Skin and body protection	: An apron or other impermeable body protection is suggested. Full-body chemical protective clothing is recommended for emergency response procedures.
Respiratory protection	: In case of insufficient ventilation, wear suitable respiratory equipment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Powder.
Colour	: Gray to black
Odour	: Odorless
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 2.56
Solubility	: Water: Appreciable
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

The product is stable at normal handling- and storage conditions.

10.3. Possibility of hazardous reactions

Will not occur.

10.4. Conditions to avoid

Dust generation.

10.5. Incompatible materials

Avoid contact with strong acids and strong bases.

X-PANDO PIPE JOINT COMPOUND

Safety Data Sheet

10.6. Hazardous decomposition products

Hazardous decomposition products such as hydrogen chloride, chlorine and magnesium oxide fumes may develop with exposure to high temperatures.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Magnesium chloride, hexahydrate (7791-18-6)	
LD50 oral rat	8100 mg/kg
ATE (oral)	8100 mg/kg
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: May cause respiratory irritation.
Specific target organ toxicity (repeated exposure)	: May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated skin contact may cause burns. Prolonged inhalation of dust may lead to lung damage (pneumoconiosis). Symptoms include coughing, difficulty breathing, and the production of black sputum. Symptoms may be delayed until after years of exposure.
Aspiration hazard	: Not classified

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

In accordance with DOT / ADR / RID / ADNR / IMDG / ICAO / IATA

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

Magnesium oxide (1309-48-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Limestone (1317-65-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Graphite (7782-42-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

X-PANDO PIPE JOINT COMPOUND

Safety Data Sheet

Dextrin (9004-53-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

X-PANDO PIPE JOINT COMPOUND

WHMIS Classification Class D Division 2 Subdivision B - Toxic material causing other toxic effects

Magnesium chloride, hexahydrate (7791-18-6)

WHMIS Classification Uncontrolled product according to WHMIS classification criteria

Magnesium oxide (1309-48-4)

Listed on the Canadian DSL (Domestic Substances List) inventory.

WHMIS Classification Uncontrolled product according to WHMIS classification criteria

Limestone (1317-65-3)

WHMIS Classification Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

Graphite (7782-42-5)

Listed on the Canadian DSL (Domestic Substances List) inventory.

WHMIS Classification Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

Dextrin (9004-53-9)

Listed on the Canadian DSL (Domestic Substances List) inventory.

WHMIS Classification Uncontrolled product according to WHMIS classification criteria

15.3. US State regulations

Magnesium oxide (1309-48-4)

U.S. - Massachusetts - Right To Know List
U.S. - Minnesota - Hazardous Substance List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Limestone (1317-65-3)

U.S. - Massachusetts - Right To Know List
U.S. - Minnesota - Hazardous Substance List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Graphite (7782-42-5)

U.S. - Massachusetts - Right To Know List
U.S. - Minnesota - Hazardous Substance List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Full text of H-phrases:

STOT RE 2	Specific target organ toxicity (repeated exposure) Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H335	May cause respiratory irritation
H373	May cause damage to organs through prolonged or repeated exposure

HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible
Flammability : 0 Minimal Hazard
Physical : 0 Minimal Hazard

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SAFETY DATA SHEET

1. Identification

Product identifier	ZRC Cold Galvanizing Compound
Other means of identification	
Product code	10001 - 10004
Recommended use	Corrosion protection of iron and steel.
Recommended restrictions	None known.
Manufacturer / Importer / Supplier / Distributor information	
Supplier/Manufacturer	ZRC Worldwide
Address	145 Enterprise Drive, Marshfield, MA 02050
Telephone	781-319-0400
Emergency telephone (CHEMTREC)	703-527-3887 CCN15781
Email	info@zrcworldwide.com
Company name	ZRC Worldwide
Address	Not available.
Telephone	Not available.
E-mail	Not available.
Emergency phone number	Not available.

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 3
Health hazards	Specific target organ toxicity, repeated exposure	Category 2 (Lung, Central nervous system)
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1
OSHA defined hazards	Not classified.	

Label elements



Signal word Warning

Hazard statement Flammable liquid and vapor. Very toxic to aquatic life with long lasting effects. Very toxic to aquatic life. May cause damage to organs (Central nervous system, Lung) through prolonged or repeated exposure.

Precautionary statement

Prevention	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment. Do not breathe mist/vapors/spray.
Response	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Collect spillage. Get medical advice/attention if you feel unwell.
Storage	Store in a well-ventilated place. Keep cool.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

Supplemental information

Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Zinc	7440-66-6	75 - 85
Solvent naphtha (petroleum), medium aliph.	64742-88-7	4 - 6
Distillates (petroleum), hydrotreated light	64742-47-8	4 - 5
Zinc oxide	1314-13-2	2 - 3
Solvent naphtha (petroleum), light aromatic	64742-95-6	0.5 - 0.9
Other components below reportable levels		7.3

4. First-aid measures

Inhalation	Move to fresh air. Get medical attention if any discomfort continues.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Rinse mouth. Get medical attention if any discomfort occurs.
Most important symptoms/effects, acute and delayed	May cause temporary irritation on skin or eye contact.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically.
General information	In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

5. Fire-fighting measures

Suitable extinguishing media	Dry chemical, CO2, water spray, fog, or foam.
Unsuitable extinguishing media	Do not use water jet.
Specific hazards arising from the chemical	By heating and fire, harmful vapors/gases may be formed. Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection.
Fire-fighting equipment/instructions	Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Use standard firefighting procedures and consider the hazards of other involved materials. In the event of fire, cool tanks with water spray. Move containers from fire area if you can do so without risk. In case of fire and/or explosion do not breathe fumes. Water runoff can cause environmental damage.
General fire hazards	Flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if you can do so without risk. Collect spillage. Scoop up used absorbent into drums or other appropriate container. Prevent entry into waterways, sewer, basements or confined areas. For waste disposal, see Section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Use non-sparking tools and explosion-proof equipment. Do not taste or swallow. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains.

Conditions for safe storage, including any incompatibilities

Keep away from heat, sparks and open flame. Keep container tightly closed. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. For further information, please refer to Section 10 of the SDS.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Zinc oxide (CAS 1314-13-2)	PEL	5 mg/m3	Fume.
		5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m3	Respirable fraction.
	TWA	2 mg/m3	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)	TWA	100 mg/m3	
Zinc oxide (CAS 1314-13-2)	Ceiling	15 mg/m3	Dust.
	STEL	10 mg/m3	Fume.
	TWA	5 mg/m3	Dust.
		5 mg/m3	Fume.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation.

Individual protection measures, such as personal protective equipment

Eye/face protection

Do not get in eyes. If contact is likely, safety glasses with side shields are recommended.

Skin protection

Hand protection

No protection is ordinarily required under normal conditions of use. Use protective gloves made of: Rubber (natural, latex).

Other

Wear suitable protective clothing. Use appropriate hand protection.

Respiratory protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Gray liquid.

Physical state

Liquid.

Form

Liquid.

Color

Gray.

Odor

Hydrocarbon.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

Not available.

Initial boiling point and boiling range

Not available.

Flash point

111.2 °F (44.0 °C) Setaflash

Evaporation rate	< 1 (n-Butyl acetate=1)
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	0.9 %
Flammability limit - upper (%)	7 %
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	0.8 kPa (25°C / 77°F)
Vapor density	> 1 (25°C / 77°F)
Relative density	2.88
Solubility(ies)	
Solubility (water)	Slightly soluble in water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	1800 mPa·s (25°C / 77°F)
Other information	
Bulk density	24 lb/gal
VOC (Weight %)	385 g/l

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. Avoid temperatures exceeding the flash point.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Carbon oxides. Zinc oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion	May cause discomfort if swallowed.
Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
Skin contact	Prolonged or repeated contact may dry skin and cause irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation. Prolonged or repeated contact may dry skin and cause irritation.
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Information on toxicological effects

Acute toxicity	Not classified.
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Components	Species	Test Results
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 5.28 mg/l, 4 hours
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg

Components	Species	Test Results
Solvent naphtha (petroleum), medium aliph. (CAS 64742-88-7)		
Acute		
Dermal		
LD50	Rabbit	3000 mg/kg
Oral		
LD50	Rat	> 5000 mg/kg
Skin corrosion/irritation	Not classified.	
Serious eye damage/eye irritation	Not classified.	
Respiratory or skin sensitization		
Respiratory sensitization	Not classified.	
Skin sensitization	Not classified.	
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. Not classifiable as to carcinogenicity to humans.	
Reproductive toxicity	Not classified.	
Specific target organ toxicity - single exposure	Not classified.	
Specific target organ toxicity - repeated exposure	May cause damage to the following organs through prolonged or repeated exposure: Central nervous system. Lung.	
Aspiration hazard	Not classified.	
Chronic effects	Prolonged exposure may cause chronic effects. Exposure over a long period of time may cause central nervous system effects. May cause lung damage.	

12. Ecological information

Ecotoxicity	Very toxic to aquatic life with long lasting effects.		
Components	Species		Test Results
Zinc (CAS 7440-66-6)			
Aquatic			
Crustacea	LC50	Daphnia magna	0.068 mg/l, 48 hours
Fish	LC50	Bony fish superclass (Osteichthyes)	0.52 - 3.59 mg/l, 96 hours
Zinc oxide (CAS 1314-13-2)			
Aquatic			
Crustacea	LC50	Water flea (Daphnia magna)	0.098 mg/l, 48 Hours
Persistence and degradability	No data is available on the degradability of this product.		
Bioaccumulative potential	Accumulation in aquatic organisms is expected.		
Mobility in soil	Not available.		
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.		

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 F The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number UN1263
UN proper shipping name Paint
Transport hazard class(es)
Class 3
Subsidiary risk -
Packing group III
Environmental hazards
Marine pollutant Yes
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
3

IATA

UN number UN1263
UN proper shipping name Paint
Transport hazard class(es)
Class 3
Subsidiary risk -
Label(s) 3
Packing group III
Environmental hazards Yes
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN1263
UN proper shipping name Paint
Transport hazard class(es)
Class 3
Subsidiary risk -
Packing group III
Environmental hazards
Marine pollutant Yes
EmS F-E, S-E
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Not available.

Annex II of MARPOL 73/78 and
the IBC Code

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Zinc (CAS 7440-66-6) LISTED

Zinc oxide (CAS 1314-13-2) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Zinc	7440-66-6	75 - 85
Zinc oxide	1314-13-2	2 - 3

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

Zinc (CAS 7440-66-6)

Zinc oxide (CAS 1314-13-2)

US. New Jersey Worker and Community Right-to-Know Act

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

Zinc (CAS 7440-66-6)

Zinc oxide (CAS 1314-13-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

Zinc (CAS 7440-66-6)

Zinc oxide (CAS 1314-13-2)

US. Rhode Island RTK

Zinc (CAS 7440-66-6)

Zinc oxide (CAS 1314-13-2)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

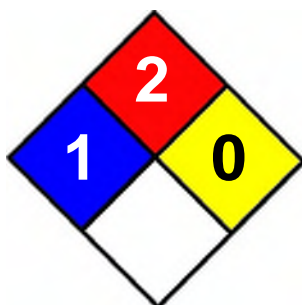
16. Other information, including date of preparation or last revision

Issue date 14-December-2013

Revision date 05-February-2014

Version # 05

NFPA Ratings



References

ESIS (European chemical Substances Information System)
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.