



Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier

3M™ Scotch-Brite™ Products, 7447, 7467, General Purpose Pads

1.2. Recommended use and restrictions on use

Recommended use

Abrasive Product, For industrial/occupational use only. Not for consumer sale or use.

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Abrasive Systems 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

Not classified as hazardous according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

2.2. Label elements

Signal word

Not applicable.

Symbols

Not applicable.

Pictograms

Not applicable.

26% of the mixture consists of ingredients of unknown acute oral toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Aluminum Oxide Mineral	1344-28-1	30 - 50 Trade Secret *

Nylon Fiber	Mixture	25 - 35 Trade Secret *
Cured Resin	Mixture	15 - 30 Trade Secret *
Filler	1317-65-3	5 - 10 Trade Secret *
Titanium Dioxide	13463-67-7	< 1.5 Trade Secret *
Quartz Silica	14808-60-7	< 0.2 Trade Secret *

*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:

Do not induce vomiting. Rinse mouth. If you feel unwell, get medical attention.

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

No critical symptoms or effects. 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

Amine Compounds
Carbon monoxide
Carbon dioxide
Hydrogen Cyanide
Ammonia
Oxides of Nitrogen

Condition

During Combustion
During Combustion
During Combustion
During Combustion
During Combustion
During Combustion

5.3. Special protective actions for fire-fighters

Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Observe precautions from other sections.

6.2. Environmental precautions

Not applicable.

6.3. Methods and material for containment and cleaning up

Not applicable.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

For industrial/occupational use only. Not for consumer sale or use. Avoid breathing of dust created by sanding, grinding or machining. Combustible dust may form by action of this product on another material (substrate). Dust generated from the substrate during use of this product may be explosive if in sufficient concentration with an ignition source. Dust deposits should not be allowed to accumulate on surfaces because of the potential for secondary explosions.

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
Filler	1317-65-3	OSHA	TWA(as total dust):15 mg/m ³ ;TWA(respirable fraction):5 mg/m ³	
Particles (insoluble or poorly soluble) not otherwise specified, inhalable particles	1317-65-3	ACGIH	TWA(inhalable particulates):10 mg/m ³	
Particles (insoluble or poorly soluble) not otherwise specified, respirable particles	1317-65-3	ACGIH	TWA(respirable particles):3 mg/m ³	
Aluminum Oxide Mineral	1344-28-1	OSHA	TWA(as total dust):15 mg/m ³ ;TWA(respirable fraction):5 mg/m ³	
Aluminum, insoluble compounds	1344-28-1	ACGIH	TWA(respirable fraction):1 mg/m ³	A4: Not class. as human carcin
Particles (insoluble or poorly soluble) not otherwise specified, inhalable particles	1344-28-1	ACGIH	TWA(inhalable particulates):10 mg/m ³	
Particles (insoluble or poorly soluble) not otherwise specified, respirable particles	1344-28-1	ACGIH	TWA(respirable particles):3 mg/m ³	
Titanium Dioxide	13463-67-7	ACGIH	TWA(Respirable nanoscale particles):0.2 mg/m ³ ;TWA(Respirable finescale particles):2.5 mg/m ³	A3: Confirmed animal carcin.
Titanium Dioxide	13463-67-7	OSHA	TWA(as total dust):15 mg/m ³	
Quartz Silica	14808-60-7	ACGIH	TWA(respirable fraction):0.025 mg/m ³	A2: Suspected human carcin.

Quartz Silica	14808-60-7	OSHA	TWA Table Z-1(respirable):0.05 mg/m3;TWA Table Z-3(respirable):0.1 mg/m3;TWA concentration(respirable):0.1 mg/m3(2.4 millions of particles/cu. ft.)	
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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

Provide appropriate local exhaust ventilation for sanding, grinding or machining. 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. Provide local exhaust at process emission sources to control exposure near the source and to prevent the escape of dust into the work area. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).

8.2.2. Personal protective equipment (PPE)

Eye/face protection

To minimize the risk of injury to face and eyes, always wear eye and face protection when working at sanding or grinding operations or when near such operations. 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:
 Safety Glasses with side shields

Skin/hand protection

Wear appropriate gloves to minimize risk of injury to skin from contact with dust or physical abrasion from grinding or sanding.

Respiratory protection

Assess exposure concentrations of all materials involved in the work process. Consider material being abraded when determining the appropriate respiratory protection. Select and use appropriate respirators to prevent inhalation overexposure.
 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

Appearance

Physical state	Solid
Color	Red

Odor	Slight Polymeric
Odor threshold	<i>Not Applicable</i>
pH	<i>Not Applicable</i>
Melting point	<i>Not Applicable</i>
Boiling Point	<i>Not Applicable</i>
Flash Point	<i>Not Applicable</i>
Evaporation rate	<i>Not Applicable</i>
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>
Vapor Pressure	<i>Not Applicable</i>
Vapor Density	<i>Not Applicable</i>
Specific Gravity	<i>Not Applicable</i>
Solubility in Water	<i>Not Applicable</i>
Solubility- non-water	<i>Not Applicable</i>
Partition coefficient: n-octanol/ water	<i>Not Applicable</i>
Autoignition temperature	<i>Not Applicable</i>
Decomposition temperature	<i>Not Applicable</i>
Viscosity	<i>Not Applicable</i>

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

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:

Dust from grinding, sanding or machining may cause irritation of the respiratory system. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin Contact:

Mechanical Skin irritation: Signs/symptoms may include abrasion, redness, pain, and itching.

Eye Contact:

Mechanical eye irritation: Signs/symptoms may include pain, redness, tearing and corneal abrasion.

Dust created by grinding, sanding, or machining may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Ingestion:

No health effects are expected.

Carcinogenicity:

Ingredient	CAS No.	Class Description	Regulation
Silica, Crystalline (Respirable Size)	14808-60-7	Known To Be Human Carcinogen.	National Toxicology Program Carcinogens
Silica dust, crystalline, in the form of quartz or cristobalite	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

Additional Information:

This document covers only the 3M product. For complete assessment, when determining the degree of hazard, the material being abraded must also be considered.

This product contains titanium dioxide and quartz (crystalline) silica. Cancer of the lungs has been associated with inhalation of high levels of titanium dioxide in animal studies, and occupational exposure to inhaled quartz silica has been associated with silicosis and lung cancer. No exposure to titanium dioxide or quartz silica is expected during the normal handling and use of this product. Titanium dioxide and quartz silica were not detected when air sampling was conducted during simulated use of similar products containing these substances. Therefore, the health effects associated with titanium dioxide and quartz (crystalline) silica are not expected during the normal use of this product.

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
Aluminum Oxide Mineral	Dermal		LD50 estimated to be > 5,000 mg/kg
Aluminum Oxide Mineral	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 2.3 mg/l
Aluminum Oxide Mineral	Ingestion	Rat	LD50 > 5,000 mg/kg
Filler	Dermal	Rat	LD50 > 2,000 mg/kg
Filler	Inhalation-Dust/Mist (4 hours)	Rat	LC50 3 mg/l
Filler	Ingestion	Rat	LD50 6,450 mg/kg
Titanium Dioxide	Dermal	Rabbit	LD50 > 10,000 mg/kg
Titanium Dioxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.82 mg/l

Titanium Dioxide	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
Aluminum Oxide Mineral	Rabbit	No significant irritation
Filler	Rabbit	No significant irritation
Titanium Dioxide	Rabbit	No significant irritation
Quartz Silica	Professional judgement	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Aluminum Oxide Mineral	Rabbit	No significant irritation
Filler	Rabbit	No significant irritation
Titanium Dioxide	Rabbit	No significant irritation

Skin Sensitization

Name	Species	Value
Titanium Dioxide	Human and animal	Not classified

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
Aluminum Oxide Mineral	In Vitro	Not mutagenic
Titanium Dioxide	In Vitro	Not mutagenic
Titanium Dioxide	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
Aluminum Oxide Mineral	Inhalation	Rat	Not carcinogenic
Titanium Dioxide	Ingestion	Multiple animal species	Not carcinogenic
Titanium Dioxide	Inhalation	Rat	Carcinogenic
Quartz Silica	Inhalation	Human and animal	Carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Filler	Ingestion	Not classified for development	Rat	NOAEL 625 mg/kg/day	prematuring & during

gestation

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

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Filler	Inhalation	respiratory system	Not classified	Rat	NOAEL 0.812 mg/l	90 minutes

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Aluminum Oxide Mineral	Inhalation	pneumoconiosis	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Aluminum Oxide Mineral	Inhalation	pulmonary fibrosis	Not classified	Human	NOAEL Not available	occupational exposure
Filler	Inhalation	respiratory system	Not classified	Human	NOAEL Not available	occupational exposure
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	Not classified	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**

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.

Prior to disposal, consult all applicable authorities and regulations to insure proper classification. The substrate that was abraded must be considered as a factor in the disposal method for this product. 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. If no other disposal options are available, waste product may be placed in a landfill properly designed for industrial waste.

SECTION 14: Transport Information

Not regulated per U.S. DOT, IATA or IMO.

These transportation classifications are provided as a customer service. As the shipper YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. 3M transportation classifications are based on product formulation, packaging, 3M policies and 3M understanding of applicable current regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and not the packaging, labeling, or marking requirements. The original 3M package is certified for U.S. ground shipment only. If you are shipping by air or ocean, the package may not meet applicable regulatory requirements.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

EPCRA 311/312 Hazard Classifications:

Physical Hazards

Not applicable

Health Hazards

Not applicable

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>
Aluminum Oxide Mineral	1344-28-1	Trade Secret 30 - 50
Aluminum Oxide Mineral (ALUMINUM OXIDE (FIBROUS FORMS ONLY))	1344-28-1	Trade Secret 30 - 50

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory listing requirements.

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: 0 **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: 03/09/2023

1. PRODUCT AND COMPANY IDENTIFICATION

Product name:	272 Threadlocker High Strength	IDH number:	88442
Product type/use:	Anaerobic Adhesive	Item number:	27240
Restriction of Use:	None identified	Region:	United States
Company address:	Contact information:		
Henkel Corporation	Telephone: +1 (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.henkeln.com		

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING: CAUSES SKIN IRRITATION.
MAY CAUSE AN ALLERGIC SKIN REACTION.
CAUSES SERIOUS EYE IRRITATION.
SUSPECTED OF CAUSING CANCER.
MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

HAZARD CLASS	HAZARD CATEGORY
SKIN IRRITATION	2
EYE IRRITATION	2A
SKIN SENSITIZATION	1
CARCINOGENICITY	2
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	2

PICTOGRAM(S)



Precautionary Statements

Prevention:	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe vapors, mist, or spray. Wash affected area thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves, clothing, eye and face protection.
Response:	IF ON SKIN: Wash with plenty of water. 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 attention. If skin irritation or rash occurs: Get medical attention. If eye irritation persists: Get medical attention. Take off contaminated clothing.
Storage:	Store locked up.
Disposal:	Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

3 % of the mixture consists of ingredient(s) of unknown acute toxicity.

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

IDH number: 88442

Page 1 of 6

Product name: 272 Threadlocker High Strength

Hazardous Component(s)	CAS Number	Percentage*
Maleimide resin	3006-93-7	10 - 30
Hydroxyalkyl methacrylate	27813-02-1	1 - 5
Cumene hydroperoxide	80-15-9	1 - 5
Silica, amorphous, fumed, cryst.-free	112945-52-5	1 - 5
1-Acetyl-2-phenylhydrazine	114-83-0	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:	Immediately flush skin with plenty of water (using soap, if available). Remove contaminated clothing and footwear. Wash clothing before reuse. Get medical attention.
Eye contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Ingestion:	DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.
Symptoms:	See Section 11.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Water spray (fog), 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:	Uncontrolled polymerization may occur at high temperatures resulting in explosions or rupture of storage containers.
Hazardous combustion products:	Oxides of nitrogen. Oxides of carbon. 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. Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment during clean-up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Scrape up as much material as possible. Store in a partly filled, closed container until disposal. Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up.

7. HANDLING AND STORAGE

Handling:	Use only with adequate ventilation. Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Keep container closed. Refer to Section 8.
Storage:	For safe storage, store at or below 38 °C (100.4 °F) Keep in a cool, well ventilated area away from heat, sparks and open flame. Keep container tightly closed until ready for use. Keep container dry.

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
Maleimide resin	None	None	None	None
Hydroxyalkyl methacrylate	None	None	None	1 ppm TWA 3 ppm STEL
Cumene hydroperoxide	None	None	1 ppm (6 mg/m ³) TWA (SKIN)	None
Silica, amorphous, fumed, cryst.-free	3 mg/m ³ TWA Respirable particles. 10 mg/m ³ TWA Inhalable particles.	20 MPPCF TWA 0.8 mg/m ³ TWA 50 MPPCF TWA Total dust. 5 mg/m ³ TWA Respirable fraction. 15 mg/m ³ TWA Total dust. 15 MPPCF TWA Respirable fraction.	None	None
1-Acetyl-2-phenylhydrazine	None	None	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:	Butyl rubber gloves. Use chemical resistant, impermeable clothing including gloves and either an apron or body suit to prevent skin contact. Natural rubber gloves. Neoprene gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	Red
Odor:	Mild
Odor threshold:	Not available.
pH:	Not applicable, Product is non-polar/aprotic.
Vapor pressure:	< 5 mm hg (80 °F (26.7 °C)) < 0.13 mbar (20 °C (68°F))
Boiling point/range:	> 150 °C (> 302°F)
Melting point/ range:	Not applicable, Product is a liquid
Specific gravity:	1.11
Vapor density:	> 1 20 °C
Flash point:	> 100.00 °C (> 212°F) Tagliabue closed cup; No flash point up to 100 °C 184 °C (363.2 °F) Cleveland open cup
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not available.
Flammability:	The product is not flammable.
Evaporation rate:	Not available.
Solubility in water:	Slight
Solubility in water:	Partially miscible
Partition coefficient (n-octanol/water):	Not available.
VOC content:	0.19 %; 2.08 g/l
Viscosity:	Not available.
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions of storage and use.
Hazardous reactions:	Hazardous polymerization may occur in the presence of excess peroxides and metals contamination.
Hazardous decomposition products:	Oxides of carbon. Oxides of nitrogen. Irritating vapors.
Incompatible materials:	Reducing agents. Strong alkalis. Strong acids and oxidizing agents. Other polymerization initiators. No data available.
Reactivity:	Not available.
Conditions to avoid:	Elevated temperatures. Heat, flames, sparks and other sources of ignition. Store away from incompatible materials.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation:	Inhalation of vapors or mists of the product may be irritating to the respiratory system.
Skin contact:	Causes skin irritation. May cause allergic skin reaction.
Eye contact:	Causes serious eye irritation.
Ingestion:	May cause gastrointestinal tract irritation if swallowed.

Acute inhalation product toxicity: The substance or mixture has no acute inhalation toxicity.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Maleimide resin	None	No Target Organs
Hydroxyalkyl methacrylate	None	Irritant, Allergen
Cumene hydroperoxide	None	Allergen, Central nervous system, Corrosive, Irritant, Mutagen
Silica, amorphous, fumed, cryst.-free	None	No Data
1-Acetyl-2-phenylhydrazine	Oral LD50 (Mouse) = 270 mg/kg	Allergen, Blood, Kidney, Mutagen, Some evidence of carcinogenicity

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Maleimide resin	No	No	No
Hydroxyalkyl methacrylate	No	No	No
Cumene hydroperoxide	No	No	No
Silica, amorphous, fumed, cryst.-free	No	No	No
1-Acetyl-2-phenylhydrazine	No	No	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.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any packaging.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: RQ, Environmentally hazardous substance, liquid, n.o.s.
Hazard class or division: 9
Identification number: UN 3082
Packing group: III
DOT Hazardous Substance(s): alpha,alpha-Dimethylbenzylhydroperoxide

International Air Transportation (ICAO/IATA)

Proper shipping name: RQ, Environmentally hazardous substance, liquid, n.o.s.
Hazard class or division: 9
Identification number: UN 3082
Packing group: III

Water Transportation (IMO/IMDG)

Proper shipping name: RQ, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Hazard class or division: 9
Identification number: UN 3082
Packing group: III

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed as active or are exempt from listing on the Toxic Substances Control Act (TSCA) 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: Immediate Health, Delayed Health
CERCLA/SARA Section 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). Cumene hydroperoxide (CAS# 80-15-9).
CERCLA Reportable quantity: Cumene hydroperoxide (CAS# 80-15-9) 10 lbs. (4.54 kg)
California Proposition 65: This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDSL 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: 2,3,8,9,11

Prepared by: Product Safety and Regulatory Affairs

Issue date: 03/09/2023

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SAFETY DATA SHEET

Creation Date 28-Apr-2009

Revision Date 13-Oct-2023

Revision Number 9

1. Identification

Product Name	Acetone
Cat No. :	A9-4; A9-20; A9-200; A11-1; A11-4; A11-20; A11-200; A11S-4; A13-20; A13-200; A16F-1GAL; A16P-1GAL; A16P-4; A16S-4; A16S-20; A18-1; A18-4; A18-20; A18-20LC; A18-200; A18-200LC; A18-500; A18CU1300; A18FB-19; A18FB-50; A18FB-115; A18FB-200; A18P-4; A18POP-19; A18POPB-50; A18RB-19; A18RB-50; A18RB-115; A18RB-200; A18RS-28; A18RS-50; A18RS-115; A18RS-200; A18S-4; A18SK-4; A18SS-19; A18SS-28; A18SS-50; A18SS-115; A18SS-200; A19-1; A19-4; A19RS-115; A19RS-200; A40-4; A928-4; A929-1; A929-4; A929-4LC; A929RS-19; A929RS-50; A929RS-200; A929SK-4; A929SS-28; A929SS-50; A929SS-115; A929SS-200; A946-4; A946-4LC; A946FB-200; A946RB-19; A946RB-50; A946RB-115; A946RB-200; A949-1; A949-4; A949-4LC; A949CU-50; A949N-119; A949N-219; A949POP-19; A949RS-28; A949RS-50; A949RS-115; A949SK-1; A949SK-4; A949SS-19; A949SS-28; A949SS-50; A949SS-115; A949SS-200; BP2403-1; BP2403-4; BP2403-20; BP2403-RS200; BP2404-1; BP2404-4; BP2404-SK1; BP2404-SK4; HC300-1GAL; S70091; 22050131; 22050295; XXA9ET200LI; NC2396838
CAS No	67-64-1
Synonyms	2-Propanone; Dimethyl ketone; (Certified ACS, HPLC, OPTIMA, Histological, Spectranalyzed, NF/FCC/EP, Pesticide, Electronic, GC Resolv, SAFE-COTE)
Recommended Use	Laboratory chemicals.
Uses advised against	Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number

CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Central nervous system (CNS).	
Specific target organ toxicity - (repeated exposure)	Category 2

Label Elements

Signal Word

Danger

Hazard Statements

Highly flammable liquid and vapor
 Causes serious eye irritation
 May cause drowsiness or dizziness
 May cause damage to organs through prolonged or repeated exposure



Precautionary Statements

Prevention

Wash face, hands and any exposed skin thoroughly after handling
 Do not breathe 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

Response

Get medical attention/advice if you feel unwell

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

Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

Eyes

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

Fire

In case of fire: Use CO2, dry chemical, or foam for extinction

Storage

Store in a well-ventilated place. Keep container tightly closed
 Store locked up

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Repeated exposure may cause skin dryness or cracking

3. Composition/Information on Ingredients

Component	CAS No	Weight %
Acetone	67-64-1	>95

4. First-aid measures

General Advice	If symptoms persist, call a physician.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
Ingestion	Clean mouth with water and drink afterwards plenty of water.
Most important symptoms and effects	Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: May cause pulmonary edema
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Water spray, carbon dioxide (CO ₂), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.
Unsuitable Extinguishing Media	Water may be ineffective
Flash Point	-20 °C / -4 °F
Method -	CC (closed cup)
Autoignition Temperature	465 °C / 869 °F
Explosion Limits	
Upper	12.8 vol %
Lower	2.5 vol %
Oxidizing Properties	Not oxidising
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical

Flammable. Risk of ignition. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO₂). Formaldehyde. Methanol.

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.

NFPA

Health	Flammability	Instability	Physical hazards
2	3	0	N/A

6. Accidental release measures

Personal Precautions Use personal protective equipment as required. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.

Environmental Precautions Should not be released into the environment.

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7. Handling and storage

Handling Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

Storage. Flammables area. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame. Incompatible Materials. Strong oxidizing agents. Strong reducing agents. Strong bases. Peroxides. Halogenated compounds. Alkali metals. Amines.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Acetone	TWA: 250 ppm STEL: 500 ppm	(Vacated) TWA: 750 ppm (Vacated) TWA: 1800 mg/m ³ (Vacated) STEL: 2400 mg/m ³ (Vacated) STEL: 1000 ppm TWA: 1000 ppm TWA: 2400 mg/m ³	IDLH: 2500 ppm TWA: 250 ppm TWA: 590 mg/m ³	TWA: 500 ppm STEL: 750 ppm

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting equipment.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard

EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended Filter type: low boiling organic solvent. Type AX. Brown. conforming to EN371.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Colorless
Odor	sweet
Odor Threshold	19.8 ppm
pH	7
Melting Point/Range	-95 °C / -139 °F
Boiling Point/Range	56 °C / 132.8 °F
Flash Point	-20 °C / -4 °F
Method -	CC (closed cup)
Evaporation Rate	5.6 (Butyl Acetate = 1.0)
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	12.8 vol %
Lower	2.5 vol %
Vapor Pressure	247 mbar @ 20 °C
Vapor Density	2.0
Specific Gravity	0.790
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	465 °C / 869 °F
Decomposition Temperature	> 4°C
Viscosity	0.32 mPa.s @ 20 °C
Molecular Formula	C3 H6 O
Molecular Weight	58.08
VOC Content(%)	100
Refractive index	1.358 - 1.359

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Heat, flames and sparks. Incompatible products. Keep away from open flames, hot surfaces and sources of ignition.
Incompatible Materials	Strong oxidizing agents, Strong reducing agents, Strong bases, Peroxides, Halogenated compounds, Alkali metals, Amines
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO ₂), Formaldehyde, Methanol
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
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Acetone	5800 mg/kg (Rat)	> 15800 mg/kg (rabbit) > 7400 mg/kg (rat)	76 mg/l, 4 h, (rat)
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Toxicologically Synergistic Products Carbon tetrachloride; Chloroform; Trichloroethylene; Bromodichloromethane; Dibromochloromethane; N-nitrosodimethylamine; 1,1,2-Trichloroethane; Styrene; Acetonitrile, 2,5-Hexanedione; Ethanol; 1,2-Dichlorobenzene

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Irritating to eyes

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Acetone	67-64-1	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Central nervous system (CNS)

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects, both acute and delayed Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting:
May cause pulmonary edema

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Acetone	NOEC = 430 mg/l (algae; 96 h)	Oncorhynchus mykiss: LC50 = 5540 mg/l 96h Alburnus alburnus: LC50 = 11000 mg/l 96h Leuciscus idus: LC50 = 11300 mg/L/48h Salmo gairdneri: LC50 = 6100 mg/L/24h	EC50 = 14500 mg/L/15 min	EC50 = 8800 mg/L/48h EC50 = 12700 mg/L/48h EC50 = 12600 mg/L/48h

Persistence and Degradability Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its volatility.

Component	log Pow
Acetone	-0.24

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Acetone - 67-64-1	U002	-

14. Transport information

DOT

UN-No UN1090
 Proper Shipping Name ACETONE
 Hazard Class 3
 Packing Group II

TDG

UN-No UN1090
 Proper Shipping Name ACETONE
 Hazard Class 3
 Packing Group II

IATA

UN-No UN1090
 Proper Shipping Name ACETONE
 Hazard Class 3
 Packing Group II

IMDG/IMO

UN-No UN1090
 Proper Shipping Name ACETONE
 Hazard Class 3
 Packing Group II

15. Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Acetone	67-64-1	X	ACTIVE	-

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
 X - Listed
 '-' - Not Listed

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT) Not applicable

TSCA 12(b) - Notices of Export Not applicable

International Inventories

Canada (DSL/NDL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Acetone	67-64-1	X	-	200-662-2	X	X	X	X	X	KE-29367

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

U.S. Federal Regulations

SARA 313 Not applicable

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA - Occupational Safety and Health Administration Not applicable

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)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Acetone	5000 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Acetone	X	X	X	-	X

U.S. Department of Transportation

Reportable Quantity (RQ): Y
 DOT Marine Pollutant N
 DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade Serious risk, Grade 3

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Acetone	67-64-1	-	Use restricted. See item 75. (see link for restriction details)	-

REACH links
<https://echa.europa.eu/substances-restricted-under-reach>

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Acetone	67-64-1	Listed	Not applicable	Not applicable	Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?
 Not applicable

Other International Regulations

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Acetone	67-64-1	Not applicable	Not applicable	Not applicable	Annex I - Y42

16. Other information

Prepared By	Regulatory Affairs Thermo Fisher Scientific Email: EMSDS.RA@thermofisher.com
Creation Date	28-Apr-2009
Revision Date	13-Oct-2023
Print Date	13-Oct-2023
Revision Summary	This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

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 SDS



MacDermid Enthone

Safety Data Sheet

Section 1. Identification

Product name : ARP 2
Product code : 113045
Product type : Liquid.
Uses advised against : Consumer, private households, general public
Date of issue/Date of revision : March 3 2023.

Manufacturer - Supplier	Telephone no.:	Emergency phone:
MacDermid, Inc. MacDermid Enthone Inc. 245 Freight Street Waterbury, CT 06702	Tel: (203) 575-5700	UNITED STATES AND CANADA: Tel: 202-464-2554
MacDermid de Mexico S.A. de C.V. Norte 59 No. 896 Col. Industrial Vallejo Mexico, D.F. 02300 Mexico	Tel: 52 55 5078 3904	Tel: 01 800 002 1400 Tel: (55) 5559 1588
Anion Química Industrial S.A. Rua Eli Valter Cesar, 110 - Jardim Alvorada, CEP: 06612-130, Jandira, SP Brasil	Tel: + 55 11 4789-8585	Tel: 0800 707 7022 Tel: 0800 172 020
RevestSul Produtos Químicos Ltda. Rua Antônio Rasteiro Filho, 500 Parque Industrial José Garcia Gimenes CEP: 86183-751, Cambé, PR Brasil	Tel.: +55 043 3223 3550	Tel: 0800 707 7022 Tel: 0800 172 020
MacDermid Performance Solutions Canada Inc. 4530 Eastgate Parkway Mississauga, Ontario L4W 3W6 Canada	Tel: (905) 624-1065	UNITED STATES AND CANADA: Tel: 202-464-2554

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 IRRITATION - Category 2
EYE IRRITATION - Category 2B
SKIN SENSITIZATION - Category 1
AQUATIC HAZARD (ACUTE) - Category 3
AQUATIC HAZARD (LONG-TERM) - Category 3

GHS label elements

Hazard pictograms



Signal word

: **Warning**

Continued on next page

Section 2. Hazards identification

- Hazard statements** : Causes skin and eye irritation.
May cause an allergic skin reaction.
Harmful to aquatic life with long lasting effects.
- Precautionary statements**
- Prevention** : Wear protective gloves. Avoid release to the environment. Avoid breathing vapor.
Wash thoroughly after handling.
- Response** : Take off contaminated clothing and wash it before reuse. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or 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 advice or attention.
- Storage** : Store locked up.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Hazards not otherwise classified** : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
Non-ionic. surfactant	10-20	-
2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	0.1-1.0	4719-04-4

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 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** : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 30 minutes, keeping eyelids open. 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 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 15 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. 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.

Continued on next page

Section 4. First aid measures

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : No known significant effects or critical hazards.

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. 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. This material is harmful to aquatic life with long lasting effects. 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

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.

Continued on next page

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). Water polluting material. May be harmful to the environment if released in large quantities.

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. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Avoid release to the environment. 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** : Storage temperature: 5 to 40°C (41 to 104°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. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

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. 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: 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.

- 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 and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

- Physical state** : Liquid.
- Color** : Water white to pale yellow
- Odor** : Mild.
- Odor threshold** : Not available.
- pH** : 7.5
- Melting point/freezing point** : 0°C (32°F)

Continued on next page

Section 9. Physical and chemical properties and safety characteristics

Boiling point, initial boiling point, and boiling range	: 100°C (212°F)
Flash point	: Not available.
Evaporation rate	: Not available.
Flammability	: Not available.
Lower and upper explosion limit/flammability limit	: Not available.
Vapor pressure	: <input checked="" type="checkbox"/> Not available.
Relative vapor density	: Not available.
Relative density	: 1.02
Solubility	: Not available.
VOC	: 1.6 g/l
Partition coefficient: n-octanol/water	: <input checked="" type="checkbox"/> Not applicable.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Not available.
Flow time (ISO 2431)	: <input checked="" type="checkbox"/> Not available.
Particle characteristics	
Median particle size	: <input checked="" type="checkbox"/> 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.
Incompatibility with various substances	: 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

Product/ingredient name	Result	Species	Dose	Exposure
Non-ionic. surfactant 2,2',2''-(hexahydro- 1,3,5-triazine-1,3,5-triyl) triethanol	LD50 Oral	Rat	1 g/kg	-
	LD50 Oral	Rat	763 mg/kg	-

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
Non-ionic. surfactant	Eyes - Severe irritant	Rabbit	-	24 hours 750 Micrograms	-
	Skin - Moderate irritant	Human	-	72 hours 6 milligrams	-
	Skin - Mild irritant	Rabbit	-	Intermittent 24 hours 500 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	Category 1	-	-

Aspiration hazard

Not available.

Information on the likely routes of exposure : Dermal contact. Eye contact.

Potential acute health effects

- Eye contact** : Causes eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation. 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** : 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

Continued on next page

Section 11. Toxicological information

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 : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	5000 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Non-ionic. surfactant 2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	Acute LC50 6460 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1500 µg/l Fresh water	Fish - Salmo salar - Parr	96 hours
	Acute EC50 26.1 mg/l	Daphnia	48 hours
	Acute LC50 39 ppm Fresh water	Fish - Lepomis macrochirus	96 hours

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	-2	-	low

Mobility in soil

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

Continued on next page

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. 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	UN	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.

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 15. Regulatory information

U.S. Federal regulations : TSCA 5(a)2 proposed significant new use rule (SNUR): No products were found.
TSCA 5(a)2 final significant new use rule (SNUR): No products were found.
TSCA 12(b) one-time export notification: No products were found.
TSCA 12(b) annual export notification: No products were found.

United States inventory (TSCA 8b) : All components are listed or exempted.

SARA 302/304

Composition/information on ingredients

No products were found.

Continued on next page

Section 15. Regulatory information

SARA 311/312

Classification : SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2B
SKIN SENSITIZATION - Category 1

California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

Canada

Canada inventory : All components are listed or exempted.

International regulations

Inventory list

Australia : All components are listed or exempted.
China : All components are listed or exempted.
Japan : All components are listed or exempted.
New Zealand : All components are listed or exempted.
Philippines : All components are listed or exempted.
Republic of Korea : All components are listed or exempted.
Taiwan : All components are listed or exempted.

Section 16. Other information

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

Health	1
Flammability	0
Physical hazards	0

Procedure used to derive the classification

Classification	Justification
SKIN IRRITATION - Category 2	Calculation method
EYE IRRITATION - Category 2B	Expert judgment
SKIN SENSITIZATION - Category 1	Calculation method
AQUATIC HAZARD (ACUTE) - Category 3	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 3	Calculation method

History

Date of issue/Date of revision : 3/3/2023
Date of previous issue : 1/28/2020
Version : 1.01

Regulatory Affairs Department
enthone.msds@macdermidenthone.com

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)

Continued on next page

Section 16. Other information

N/A = Not available
SGG = Segregation Group
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.

4.9.04b4933

MacDermid Enthone SDS GHS Americas



Issuing Date 04-Dec-2023

Revision Date 04-Dec-2023

Revision Number 12

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Assembly Fluid #1

Other means of identification

Product Code(s) AF1

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Lubricant

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Address

Ultrachem, Inc.
900 Centerpoint Blvd
New Castle, DE 19720
Telephone: 302-325-9880
Fax: 302-325-0335

Emergency telephone number

Chemtrec (US): 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Label elements

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS).

Appearance Oil

Physical state Liquid

Odor mild

Hazards not otherwise classified (HNOC)

Not applicable

Other Information

Not applicable

Unknown acute toxicity

<10% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS**Mixture**

Chemical name	CAS No	Weight-%
Distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified	64742-65-0	30 - 40
Distillates (petroleum), solvent-dewaxed light paraffinic; baseoil-unspecified	64742-56-9	20 - 30
Methyl methacrylate	80-62-6	0.1 - 1

4. FIRST AID MEASURES**Description of first aid measures****Inhalation**

Remove to fresh air. Call a physician.

Eye contact

Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact

Wash skin with soap and water. Take off contaminated clothing and wash before reuse.

Ingestion

Drink plenty of water. Do NOT induce vomiting. Consult a physician.

Most important symptoms and effects, both acute and delayed**Symptoms**

No information available.

Indication of any immediate medical attention and special treatment needed**Note to physicians**

Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**Carbon dioxide (CO₂). Dry chemical. Water spray, fog or regular foam.**Unsuitable extinguishing media**

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Explosion data**Sensitivity to Mechanical Impact** None.**Sensitivity to Static Discharge** None.**Special protective equipment for fire-fighters**

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation. Use personal protective equipment as required.

Environmental precautions

Environmental precautions Should not be released into the environment. 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 Soak up with inert absorbent material. Place in appropriate chemical waste container.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly while observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Incompatible with oxidizing agents. Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Methyl methacrylate 80-62-6	STEL: 100 ppm TWA: 50 ppm	TWA: 100 ppm TWA: 410 mg/m ³ (vacated) TWA: 100 ppm (vacated) TWA: 410 mg/m ³	IDLH: 1000 ppm TWA: 100 ppm TWA: 410 mg/m ³

Appropriate engineering controls

Engineering controls Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Hand Protection Protective gloves.

Skin and body protection Wear suitable protective clothing. Gloves.

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.
General hygiene considerations	Avoid contact with skin, eyes or clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Oil
Odor	mild
Color	amber
Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	
Melting point / freezing point	No data available	
Boiling point / boiling range	No data available	
Flash point °C	> 120	ASTM D-92
Pour point °C	< -5	ASTM D-97
Evaporation rate	No data available	
Vapor pressure	No data available	
Relative density	0.91	ASTM D-4052
Water solubility	No data available	
Autoignition temperature	No data available	
Kinematic viscosity (40 °C)	1,500 cSt	ASTM D-445

Other Information

VOC Content (%)	<0.1
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10. STABILITY AND REACTIVITY

Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Hazardous polymerization	None under normal processing.
Conditions to avoid	None known based on information supplied.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	May cause irritation of respiratory tract.
Eye contact	May cause slight eye irritation.
Skin contact	May cause irritation.

Ingestion May cause gastrointestinal discomfort if consumed in large amounts.

Information on toxicological effects

Symptoms No information available.

Numerical measures of toxicity

Acute toxicity No information available

The following values are calculated based on chapter 3.1 of the GHS document . mg/kg

Unknown acute toxicity <10% of the mixture consists of ingredient(s) of unknown toxicity

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified 64742-65-0	> 15000 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	> 2400 mg/m ³ (Rat) 4 h
Distillates (petroleum), solvent-dewaxed light paraffinic; baseoil-unspecified 64742-56-9	> 5000 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	> 5399 mg/m ³ (Rat) 4 h
Methyl methacrylate 80-62-6	8420 - 10000 mg/kg (Rat) = 7872 mg/kg (Rat)	5000 - 7500 mg/kg (Rabbit) > 5 g/kg (Rabbit)	= 7093 ppm (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Chemical name	ACGIH	IARC	NTP	OSHA
Distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified 64742-65-0	A2	Group 1	Known	X
Distillates (petroleum), solvent-dewaxed light paraffinic; baseoil-unspecified 64742-56-9	A2	Group 1	Known	X
Methyl methacrylate 80-62-6	-	Group 3	-	-

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity The environmental impact of this product has not been fully investigated.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Distillates (petroleum), solvent-dewaxed heavy paraffinic; baseoil unspecified 64742-65-0	-	5000: 96 h Oncorhynchus mykiss mg/L LC50	-	1000: 48 h Daphnia magna mg/L EC50
Distillates (petroleum), solvent-dewaxed light paraffinic; baseoil-unspecified 64742-56-9	-	5000: 96 h Oncorhynchus mykiss mg/L LC50	-	1000: 48 h Daphnia magna mg/L EC50
Methyl methacrylate 80-62-6	170: 96 h Pseudokirchneriella subcapitata mg/L EC50	243 - 275: 96 h Pimephales promelas mg/L LC50 flow-through 170 - 206: 96 h Lepomis macrochirus mg/L LC50 flow-through 79: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 79: 96 h Oncorhynchus mykiss mg/L LC50 static 326.4 - 426.9: 96 h Poecilia reticulata mg/L LC50 static 125.5 - 190.7: 96 h Pimephales promelas mg/L LC50 static 153.9 - 341.8: 96 h Lepomis macrochirus mg/L LC50 static	-	69: 48 h Daphnia magna mg/L EC50

Persistence and degradability No information available.

Bioaccumulation No information available.

Chemical name	Partition coefficient
Methyl methacrylate 80-62-6	0.7

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Methyl methacrylate 80-62-6	U162	Included in waste stream: F039	-	U162

Chemical name	California Hazardous Waste Status

Methyl methacrylate 80-62-6	Toxic Ignitable
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14. TRANSPORT INFORMATION

DOT	Not regulated
TDG	Not regulated
MEX	Not regulated
ICAO (air)	Not regulated
IATA	Not regulated
IMDG	Not regulated
RID	Not regulated
ADR	Not regulated
ADN	Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Listed or Exempt
DSL/NDSL	Listed or Exempt
EINECS/ELINCS	Listed or Exempt
ENCS	Listed or Exempt
IECSC	Listed or Exempt
KECL	Listed or Exempt
PICCS	Listed or Exempt
AICS	Listed or Exempt

Legend:

- TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - 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 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.

Chemical name	SARA 313 - Threshold Values %
Methyl methacrylate - 80-62-6	1.0

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

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).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Methyl methacrylate 80-62-6	1000 lb	-	-	X

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Methyl methacrylate 80-62-6	1000 lb	-	RQ 1000 lb final RQ RQ 454 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

US State Regulations This product may contain substances regulated by state right-to-know regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA	Health hazards 1	Flammability 1	Instability -	Physical and chemical properties 0
HMIS	Health hazards 1	Flammability 1	Physical hazards 0	Personal protection -

Issuing Date 04-Dec-2023

Revision Date 04-Dec-2023

Revision Note SDS sections updated.

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

SECTION 1 – IDENTIFICATION AND COMPANY DETAIL

Product Name: B-10 Electrolyte
Product Code(s): B-10
Recommended Use: For use in the Electro-Chemical Etching Process
Manufacturers Name: Monode Marking Products, Inc.
Address: 9200 Tyler Boulevard
Mentor, OH 44060

Emergency Telephone: (440) 975-8802, available during office hours,
8:00am - 5:00pm EST, Monday - Friday, in English.

Fax Number: (440) 975-8836
Date Prepared: 31 March 2015

HMIS	
H	1
F	0
R	1
PPE†	
†Sec. 8	

SECTION 2 – HAZARDS IDENTIFICATION



Hazardous Pictogram:

Signal Word: **WARNING**

Precautionary Statement: Harmful if swallowed.
Do not swallow.
Avoid Skin and Eye contact.

Inhalation: N/A
Ingestion: Irritation of G.I. tract and kidneys. Nausea, and possible facial discoloration.
Skin contact: Irritating on contact. Dermatitis possibly aggravated.
Eye contact: Irritating on contact. Mild burning.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Components (specific chemical identity/ Common name):

SOLIDS: Nitrate Salts 8% (trade secret)
Chlorate Salts 4% (trade secret)

LIQUIDS:

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



SAFETY DATA SHEET

SECTION 4 – FIRST AID MEASURES

Skin contact: Wash thoroughly with water for fifteen minutes.
Eye contact: Flush thoroughly with water for fifteen minutes.
Ingestion: Give emetic and call physician immediately.
Inhalation: N/A

Always seek medical attention if irritation continues.

SECTION 5 – FIRE-FIGHTING MEASURES

Suitable extinguishing media: N/A
Special fire fighting procedures: N/A
Unusual fire and explosions hazards: N/A

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Steps to be taken in case material is released or spilled:

SMALL SPILLS: Flush with water to sewer.

LARGE SPILLS: Use suitable absorbent and dispose of in dot approved waste containers.

WASTE DISPOSAL: To be performed in compliance with all current local, state and federal regulations.

SECTION 7 – PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in the event of spillage or chemical release:

Waste disposal method: To be performed in compliance with all current local, state and federal regulations.

Precautions to be taken in Handling and Storage: Keep container tightly closed, and keep from freezing (32°F).

Wash hands thoroughly after handling.

Other Precautions: None.

SECTION 8 – EXPOSURE CONTROLS – PERSONAL PROTECTION

Occupation Exposure Limits: N/A

Personal Protective Equipment:

Respiratory System: N/A

Skin and Body: Optional apron

Hands: Optional - For sensitive skin, rubber gloves

Eyes: For extra protection, wear safety goggles.

Other/Special: Local exhaust sufficient

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES



SAFETY DATA SHEET

Physical State: Liquid
Color: Clear
Odor: Slight odor
Odor Threshold: N/A
pH: 6.6 to 7.0
Boiling Point: 212°F
Melting / Freezing Point: Melting - N/A Freezing - below 32°F
Flash Point: N/A
Fire Hazards in presence of various substances: N/A
Auto-ignition temperature: N/A
Explosive Properties: N/A
Lower explosion limit: N/A
Oxidizing properties: N/A
Vapor Pressure (mm Hg.): @25°C (77°F):23.7
Evaporation Rate: N/A
Density: N/A
Solubility: Complete (100%)
Vapor Density: N/A

SECTION 10 – REACTIVITY DATA

Stability: Stable
Conditions to avoid: N/A
Incompatibility: (materials to avoid) Reducing agents, combustible materials.
Hazardous Decomposition or By-products: None, but surrounding fire may produce nitrogen oxides.
Hazardous polymerization: Will not occur.

SECTION 11 – TOXICOLOGICAL INFORMATION

Carcinogenicity: NTP: No IARC: No OSHA: No

Health Hazards (Acute & Chronic);
Irritation of G.I. tract and kidneys.
Irritating on contact to skin and eyes.
Nausea and possible facial discoloration.
Dermatitis possibly aggravated from exposure.

SECTION 12 – ECOLOGICAL INFORMATION

N/A

SECTION 13 – DISPOSAL CONSIDERATIONS

Observe all federal, state and local environmental regulations.



SAFETY DATA SHEET

SECTION 14 – TRANSPORT INFORMATION

Special Precautions: Keep container tightly closed. Keep from freezing (32 degrees [F]).

This is a Non-Hazardous product.

UN Number

US DOT (United States Department of Transportation): Not Regulated

IMO/IMDG (International Maritime Dangerous Goods): Not Regulated

IATA (International Air Transport Association): Not Regulated

ADR (Agreement on Dangerous Goods by Road (Europe)): Not Regulated

RID (Regulations Concerning The International Transport of Dangerous Goods (Europe)): Not Regulated

AND (European Agreement Concerning The Carriage of dangerous Goods by Inland Waterways): Not Regulated

SECTION 15 – TRANSPORT INFORMATION

IRRITANT

Safety Phrases: N/A

Risk Phrases: N/A

Regulations: N/A

SECTION 16 – OTHER INFORMATION

Source of key data used to

Compile Safety Data Sheet: Material Safety Data Sheet. Essentially similar to U.S. Department of Labor Form OSHA-20

Issue Date: 15 May 1990

Changes to Issue: 21 February 2018

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MONODE COMPLIES WITH ALL APPLICABLE RULES AND REGULATIONS UNDER THE TSCA. (TOXIC SUBSTANCES CONTROL ACT)

© MONODE MARKING PRODUCTS, INC.



Revision Number: 005.0

Issue date: 10/22/2021

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: BONDERITE M-CR 600 AERO known as ALODINE 600 **IDH number:** 594038
Product type/use: Conversion coating
Restriction of Use: None identified **Region:** United States
Company address: **Contact information:**
 Henkel Corporation Telephone: +1 (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: CONTAINS FLUORIDES. MAY CAUSE DELAYED BURNS (NOT IMMEDIATELY PAINFUL OR VISIBLE)! LONG TERM EXPOSURE TO FLUORIDES OVER YEARS MAY CAUSE FLUOROSIS! MAY INTENSIFY FIRE; OXIDIZER. TOXIC IF SWALLOWED. FATAL IN CONTACT WITH SKIN OR IF INHALED. CAUSES SEVERE SKIN BURNS AND EYE DAMAGE. MAY CAUSE AN ALLERGIC SKIN REACTION. MAY CAUSE ALLERGY OR ASTHMA SYMPTOMS OR BREATHING DIFFICULTIES IF INHALED. MAY CAUSE RESPIRATORY IRRITATION. MAY CAUSE GENETIC DEFECTS. MAY CAUSE CANCER.

HAZARD CLASS	HAZARD CATEGORY
OXIDIZING SOLID	2
ACUTE TOXICITY ORAL	3
ACUTE TOXICITY INHALATION	2
ACUTE TOXICITY DERMAL	2
SKIN CORROSION	1B
SERIOUS EYE DAMAGE	1
RESPIRATORY SENSITIZATION	1
SKIN SENSITIZATION	1
GERM CELL MUTAGENICITY	1B
CARCINOGENICITY	1A
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE	3

PICTOGRAM(S)



Precautionary Statements

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat. Keep away from clothing and other combustible materials. Take any precaution to avoid mixing with combustibles. Do not breathe dust or fumes. Do not get in eyes, on skin, or on clothing. Wash affected area 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 should not be allowed out of the workplace. Wear protective gloves, clothing, eye and face protection. [In case of inadequate ventilation] wear respiratory protection.

Response: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN: Gently wash with plenty of soap and water. Immediately call a POISON CENTER or doctor/ physician. 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. IF exposed or concerned: Get medical attention. If skin irritation or rash occurs: Get medical attention. Take off contaminated clothing. In case of fire: Use foam, dry chemical or carbon dioxide to extinguish. Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Storage:

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*
Sodium borofluoride	13755-29-8	40 - 50
Chromium(VI) oxide	1333-82-0	30 - 40
Dipotassium hexafluorozirconate	16923-95-8	10 - 20

* 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 symptoms develop and persist, get medical attention. Delayed effects possible after inhalation. Administer oxygen or artificial respiration as needed. Do not use mouth-to-mouth method if victim ingested or inhaled the substance. Trained personnel should administer 2.5% calcium gluconate through a nebulizer for 20 minutes.

Skin contact: Remove contaminated clothing and footwear while rinsing the affected area with large amounts of running water for at least 15 minutes. GET IMMEDIATE MEDICAL ATTENTION. If iced solution of 0.13% aqueous Benzalkonium Chloride (Zephiran) or 2.5% calcium gluconate gel is available, rinsing may be limited to 5 minutes, with the soak solution or gel applied as soon as the rinsing is stopped. Gloves should be worn when applying the gel to prevent transfer of HF and secondary burns. If using calcium gluconate gel, it should be continuously re-applied and massaged into the affected area until pain has been relieved for at least 30 minutes. If Benzalkonium Chloride (Zephiran) or calcium gluconate gel is not available, rinsing must continue until medical treatment is provided.
Topical 10 % EDTA ointment can be used to treat chromate scabs and skin ulcers. A 10 % ascorbic acid solution may speed healing if applied promptly. Larger exposures may need additional treatment.
Launder contaminated clothing before reuse. Discard any shoes or clothing items that cannot be decontaminated.

Eye contact: Immediately flush affected eye with large amounts of gently flowing water or 0.9% sterile saline solution for at least 15 minutes. Hold eyelid wide open. Get immediate medical attention. Eye flushing should continue during transportation to a doctor.

Ingestion: Get immediate medical attention. Do not induce vomiting. Attempt immediate administration of a fluoride binding substance: milk, chewable calcium carbonate tablets or 4-8 ounces (120-240 ml) of milk of magnesia or a liquid antacid. Avoid large amounts of liquid as it may induce vomiting. If individual is conscious, wash out mouth with water. Provide a glass of water to dilute the material in the stomach.

Symptoms: See Section 11.

Notes to physician: Ocular exposure to corrosive fluoride compounds has been treated with isotonic sodium chloride or magnesium chloride. Dermal exposure to corrosive fluoride compounds has been treated with calcium gluconate or calcium carbonate gel applied topically to the affected areas to relieve pain at the site of exposure. Treatment of hypocalcemia associated with corrosive fluoride compounds exposure may be corrected by intravenous calcium gluconate or calcium chloride. Treatment of hypomagnesemia may be corrected by intravenous magnesium sulfate.

5. FIRE FIGHTING MEASURES

Extinguishing media: Water spray (fog), foam, dry chemical or carbon dioxide.

Special firefighting procedures: Wear full protective clothing. Wear self-contained breathing apparatus.

Unusual fire or explosion hazards: Oxidizing agent, may cause spontaneous ignition of combustible materials. May liberate large quantities of dense, foul-smelling smoke which may contain unidentified toxic gasses.

Hazardous combustion products: Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. Hydrogen fluoride. Chromium oxide.

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: Prevent further leakage or spillage if safe to do so. Wear appropriate personal protective equipment.

Clean-up methods: Spills should be cleaned immediately to prevent dispersion of airborne dusts. Follow all local, state, federal and provincial regulations for disposal.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Avoid breathing dust. Use only with adequate ventilation. Launder work clothes frequently. Do not store or consume food, drink, or tobacco products in areas where they may become contaminated with this material. Do not take internally. For industrial use only.

Storage: Store in a cool, dry, well-ventilated area.

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
Sodium borofluoride	2.5 mg/m ³ TWA (as F)	2.5 mg/m ³ PEL (as F) 2.5 mg/m ³ TWA Dust.	None	None
Chromium(VI) oxide	0.0005 mg/m ³ STEL (as Cr(VI)) Inhalable fraction. 0.0005 mg/m ³ STEL (as Cr(VI)) Inhalable fraction. 0.0002 mg/m ³ TWA (as Cr(VI)) Inhalable fraction. (SKIN) (as Cr(VI)) Inhalable fraction. 0.003 mg/m ³ TWA (as Cr(III)) Inhalable fraction. (Respiratory sensitization) (Dermal sensitization) (Respiratory sensitization)	0.0025 mg/m ³ OSHA_ACT 0.005 mg/m ³ TWA 0.5 mg/m ³ PEL (as Cr) 0.1 mg/m ³ Ceiling	None	None
Dipotassium hexafluorozirconate	5 mg/m ³ TWA (as Zr) 10 mg/m ³ STEL (as Zr) 2.5 mg/m ³ TWA (as F)	5 mg/m ³ PEL (as Zr) 2.5 mg/m ³ PEL (as F) 2.5 mg/m ³ TWA Dust.	None	None

Engineering controls:

Ventilation should effectively remove and prevent buildup of any dust generated from the handling of this product.

Respiratory protection:

If ventilation is not sufficient to effectively prevent buildup of dust, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection:

Wear chemical goggles and face shield.

Skin protection:

Use chemical resistant, impervious gloves and clothing to prevent skin contact. Gloves should be tested to determine suitability for prolonged contact. Use of impervious boots is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Solid
Color:	Red-brown
Odor:	Bland
Odor threshold:	Not available.
pH:	1.3 - 1.7 (2% solution)
Vapor pressure:	Not applicable
Boiling point/range:	> 98 °C (> 208.4 °F)
Melting point/ range:	Not determined
Specific gravity:	Not applicable
Vapor density:	Not applicable
Flash point:	Not applicable
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not applicable
Flammability:	Not applicable
Evaporation rate:	Not applicable
Solubility in water:	Complete
Partition coefficient (n-octanol/water):	Not determined
VOC content:	Not applicable
Viscosity:	Not available.
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable at normal conditions.
Hazardous reactions:	None under normal processing.
Hazardous decomposition products:	Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. May liberate hydrogen fluoride. Oxides of boron.
Incompatible materials:	This product may react with strong reducing agents. This product may react with strong acids, bases and oxidizing agents. This material will react with glass, concrete, certain metals, silica containing materials, rubber, leather, and many organics. Keep away from organic and combustible materials.
Reactivity:	Not available.
Conditions to avoid:	This product is an OXIDIZING AGENT - avoid contact with organic material.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation:	Can cause severe irritation and burns to the respiratory tract. Nasal itch and soreness, perforation of the nasal septum, dental erosion, and chronic asthmatic bronchitis may result from repeated exposure. Contains fluorides. Exposure to fluorides over years may cause fluorosis. This product contains modified rosin.
Skin contact:	This product is severely irritating to the skin and may cause burns. A component in this product may be harmful or fatal if absorbed through the skin, especially if skin is damaged. Hydrofluoric acid will penetrate the skin and attack underlying tissue and bone. Large burns (over 25 square inches) may also cause hypocalcemia and other systemic effects which may be fatal. Liquid or vapor can cause fluoride-type irritation or burns which may not be immediately painful or visible. Contact with broken skin may lead to formation of firmly marginated "chrome sores".
Eye contact:	This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness.
Ingestion:	Ingestion of small amounts of this product may result in potentially fatal hypocalcemia and systemic toxicity. May cause burns of the mouth, throat and stomach. May also cause gastrointestinal disturbances such as nausea, vomiting, abdominal pain, and diarrhea. Harmful or fatal if swallowed. Contains fluorides. Exposure to fluorides over years may cause fluorosis.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Sodium borofluoride	None	Cardiac, Central nervous system, Developmental, Gastrointestinal, Irritant, Kidney, Metabolic, Reproductive
Chromium(VI) oxide	Oral LD50 (Rat) = 25 mg/kg Dermal LD50 (Rabbit) = 30 mg/kg Inhalation LC50 (Rat, 4 h) = 167 mg/m ³ Inhalation LC50 (Rat, 4 h) = 217 mg/m ³ Inhalation LC50 (Rat, 4 h) = 263 mg/m ³	Allergen, Blood, Central nervous system, Corrosive, Carcinogen, Developmental, Eyes, Gastrointestinal, Irritant, Kidney, Liver, Mutagen, Reproductive, Respiratory
Dipotassium hexafluorozirconate	Oral LD50 (Mouse) = 98 mg/kg	Allergen, Blood, Cardiac, Central nervous system, Corrosive, Gastrointestinal tract, Irritant, Kidney, Lung, Metabolic, Muscle, Teeth, Less weight gain and food intake.

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Sodium borofluoride	No	No	No
Chromium(VI) oxide	Known To Be Human Carcinogen.	Group 1	Yes
Dipotassium hexafluorozirconate	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Do not empty into drains / surface water / ground water.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Dispose of according to Federal, State and local governmental regulations.

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: Chromium trioxide, anhydrous mixture
Hazard class or division: 5.1 (6.1, 8)
Identification number: UN 1463
Packing group: II
DOT Hazardous Substance(s): Chromic acid, Zirconium potassium fluoride

International Air Transportation (ICAO/IATA)

Proper shipping name: Chromium trioxide, anhydrous mixture
Hazard class or division: 5.1 (6.1, 8)
Identification number: UN 1463
Packing group: II

Water Transportation (IMO/IMDG)

Proper shipping name: CHROMIUM TRIOXIDE, ANHYDROUS mixture
Hazard class or division: 5.1 (6.1, 8)
Identification number: UN 1463
Packing group: II

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed as active or are exempt from listing on the Toxic Substances Control Act (TSCA) inventory.

TSCA 12 (b) Export Notification: Chromium(VI) oxide (CAS# 1333-82-0).

CERCLA/SARA Section 302 EHS: None above reporting de minimis.
CERCLA/SARA Section 311/312: Immediate Health, Delayed Health, Reactive
CERCLA/SARA Section 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). Chromium(VI) oxide (CAS# 1333-82-0).
CERCLA Reportable quantity: Dipotassium hexafluorozirconate (CAS# 16923-95-8) 1,000 lbs. (454 kg)
Chromium(VI) oxide (CAS# 1333-82-0) 10 lbs. (4.54 kg)

California Proposition 65: This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDSL 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: Regulatory Affairs

Issue date: 10/22/2021

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Safety Data Sheet



Revision Number: 004.5

Issue date: 02/24/2023

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: BONDERITE M-CR 1132 AERO
Product type/use: Chromating Products for Metals
Restriction of Use: None identified
Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

IDH number: 1445846
Item number: 1445856
Region: United States
Contact information:
Telephone: +1 (860) 571-5100
MEDICAL EMERGENCY Phone: Poison Control Center
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: MAY CAUSE AN ALLERGIC SKIN REACTION.
MAY CAUSE CANCER.

HAZARD CLASS	HAZARD CATEGORY
SKIN SENSITIZATION	1
CARCINOGENICITY	1B

PICTOGRAM(S)



Precautionary Statements

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing vapors, mist, or spray. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves, clothing, eye and face protection.

Response: IF ON SKIN: Wash with plenty of water. IF exposed or concerned: Get medical attention. If skin irritation or rash occurs: Get medical attention. Wash contaminated clothing before reuse.

Storage: Store locked up.

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*
Chromium III chromate	24613-89-6	0.1 - 1
Chromium phosphate	7789-04-0	0.1 - 1
Chromium(VI) oxide	1333-82-0	0.01 - 0.1

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation:	If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist. Delayed effects possible after inhalation. Administer oxygen or artificial respiration as needed. Do not use mouth-to-mouth method if victim ingested or inhaled the substance.
Skin contact:	Remove contaminated clothing and footwear. Immediately wash skin thoroughly with soap and water. If symptoms develop and persist, get medical attention. Topical 10 % EDTA ointment can be used to treat chromate scabs and skin ulcers. A 10 % ascorbic acid solution may speed healing if applied promptly. Larger exposures may need additional treatment. Launder contaminated clothing before reuse. Discard any shoes or clothing items that cannot be decontaminated.
Eye contact:	Immediately flush affected eye with large amounts of gently flowing water or 0.9% sterile saline solution for at least 15 minutes. Hold eyelid wide open. Get immediate medical attention. Eye flushing should continue during transportation to a doctor.
Ingestion:	Get immediate medical attention. Do not induce vomiting. If individual is conscious, wash out mouth with water. Provide a glass of water to dilute the material in the stomach.
Symptoms:	See Section 11.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Use media appropriate for surrounding material. Water spray (fog), foam, dry chemical or carbon dioxide.
Special firefighting procedures:	Wear full protective clothing. Wear self-contained breathing apparatus.
Unusual fire or explosion hazards:	May liberate large quantities of dense, foul-smelling smoke which may contain unidentified toxic gasses.
Hazardous combustion products:	Irritating and toxic gases or fumes may be released during a fire. Chromium oxide.

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:	Prevent further leakage or spillage if safe to do so. Wear appropriate protective equipment and clothing during clean-up.
Clean-up methods:	Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling:	Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Avoid breathing vapors or mists of this product. Use only with adequate ventilation. Launder work clothes frequently. Do not store or consume food, drink, or tobacco products in areas where they may become contaminated with this material. Do not take internally. For industrial use only.
Storage:	For safe storage, store between 40 °F (4.4 °C) and 104 °F (40°C) Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials. Thaw and mix thoroughly if frozen.

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
Chromium III chromate	0.0005 mg/m ³ STEL (as Cr(VI)) Inhalable fraction. 0.0005 mg/m ³ STEL (as Cr(VI)) Inhalable fraction. 0.0002 mg/m ³ TWA (as Cr(VI)) Inhalable fraction. (SKIN) (as Cr(VI)) Inhalable fraction. 0.003 mg/m ³ TWA (as Cr(III)) Inhalable fraction. (Dermal sensitization) (Respiratory sensitization)	0.005 mg/m ³ TWA 0.0025 mg/m ³ OSHA_ACT 0.1 mg/m ³ Ceiling 1 mg/m ³ PEL (as Cr) 0.5 mg/m ³ PEL (as Cr)	None	None
Chromium phosphate	0.003 mg/m ³ TWA (as Cr(III)) Inhalable fraction. 0.003 mg/m ³ TWA (as Cr(III)) Inhalable fraction. (Respiratory sensitization) (Dermal sensitization)	1 mg/m ³ PEL (as Cr) 0.5 mg/m ³ PEL (as Cr)	None	None
Chromium(VI) oxide	0.0005 mg/m ³ STEL (as Cr(VI)) Inhalable fraction. 0.0005 mg/m ³ STEL (as Cr(VI)) Inhalable fraction. 0.0002 mg/m ³ TWA (as Cr(VI)) Inhalable fraction. (SKIN) (as Cr(VI)) Inhalable fraction. 0.003 mg/m ³ TWA (as Cr(III)) Inhalable fraction. (Respiratory sensitization) (Dermal sensitization) (Respiratory sensitization)	0.0025 mg/m ³ OSHA_ACT 0.005 mg/m ³ TWA 0.5 mg/m ³ PEL (as Cr) 0.1 mg/m ³ Ceiling 1 mg/m ³ PEL (as Cr)	None	None

Engineering controls:

Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Respiratory protection:

If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection:

Wear chemical goggles; face shield (if splashing is possible).

Skin protection:

Use chemical resistant, impervious gloves and clothing to prevent skin contact. Gloves should be tested to determine suitability for prolonged contact. Use of impervious boots is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:

Liquid

Color:

Yellow green

Odor:

Mild

Odor threshold:

Not available.

pH:

1.95 - 2.25

Vapor pressure:

1 - 10 kPa (20 °C (68°F)) Values referring to water
10 - 25 kPa (50 °C (122°F))
Values referring to water

Boiling point/range:	> 100 °C (> 212°F)Aqueous solution
Melting point/ range:	Not applicable, Product is a liquid
Specific gravity:	1.00 - 1.01 at 60 °F (15.56 °C)
Vapor density:	Not determined
Flash point:	Not applicable
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not applicable
Flammability:	Not applicable
Evaporation rate:	Not determined
Solubility in water:	Complete
Partition coefficient (n-octanol/water):	Not available.
VOC content:	0 % (calculated)
Viscosity:	Not available.
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable at normal conditions.
Hazardous reactions:	Will not occur.
Hazardous decomposition products:	Chromium oxide.
Incompatible materials:	This product may react with strong reducing agents. Keep away from organic and combustible materials. Strong bases. Metals.
Reactivity:	Not available.
Conditions to avoid:	Do not allow chemical to dry in the presence of organic materials.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects/Symptoms

Inhalation:	May be harmful or fatal if inhaled. Nasal itch and soreness, perforation of the nasal septum, dental erosion, and chronic asthmatic bronchitis may result from repeated exposure.
Skin contact:	A component in this product may be harmful or fatal if absorbed through the skin, especially if skin is damaged. May cause severe skin irritation. Product contains chromium, which may cause an allergic skin sensitization reaction. Contact with broken skin may lead to formation of firmly marginated "chrome sores".
Eye contact:	This product may be severely irritating to the eyes.
Ingestion:	Harmful or fatal if swallowed. May cause burns of the mouth, throat and stomach. May also cause gastrointestinal disturbances such as nausea, vomiting, abdominal pain, and diarrhea.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Chromium III chromate	Inhalation LC50 (Rat, 4 h) = 200 mg/m3 Inhalation LC50 (Rat, 4 h) = 99 mg/m3 Inhalation LC50 (Rat, 4 h) = 217 mg/m3 Inhalation LC50 (Rat, 4 h) = 104 mg/m3	Allergen, Irritant, Respiratory
Chromium phosphate	None	Allergen, Irritant, Metabolic, Respiratory
Chromium(VI) oxide	Oral LD50 (Rat) = 25 mg/kg Dermal LD50 (Rabbit) = 30 mg/kg Inhalation LC50 (Rat, 4 h) = 167 mg/m3 Inhalation LC50 (Rat, 4 h) = 217 mg/m3 Inhalation LC50 (Rat, 4 h) = 263 mg/m3	Allergen, Blood, Central nervous system, Corrosive, Carcinogen, Developmental, Eyes, Gastrointestinal, Irritant, Kidney, Liver, Mutagen, Reproductive, Respiratory

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Chromium III chromate	Known To Be Human Carcinogen.	Group 1	Yes
Chromium phosphate	No	No	No
Chromium(VI) oxide	Known To Be Human Carcinogen.	Group 1	Yes

12. ECOLOGICAL INFORMATION

Ecological information: Do not empty into drains / surface water / ground water.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Dispose of according to Federal, State and local governmental regulations. This chemical contains phosphates. This chemical contains heavy metals.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any packaging.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: RQ, Environmentally hazardous substance, liquid, n.o.s.
Hazard class or division: 9
Identification number: UN 3082
Packing group: III
DOT Hazardous Substance(s): Chromic acid

International Air Transportation (ICAO/IATA)

Proper shipping name: RQ, Environmentally hazardous substance, liquid, n.o.s. (Chromium(III)-chromate)
Hazard class or division: 9
Identification number: UN 3082
Packing group: III

Water Transportation (IMO/IMDG)

Proper shipping name: RQ, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Chromium(III)-chromate)
Hazard class or division: 9
Identification number: UN 3082
Packing group: III
Marine pollutant: Chromium(III)-chromate

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed as active or are exempt from listing on the Toxic Substances Control Act (TSCA) inventory.
TSCA 12 (b) Export Notification: Chromium III chromate (CAS# 24613-89-6).
CERCLA/SARA Section 302 EHS: None above reporting de minimis.
CERCLA/SARA Section 311/312: Immediate Health, Delayed Health
CERCLA/SARA Section 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). Chromium III chromate (CAS# 24613-89-6).
CERCLA Reportable quantity: Chromium III chromate (CAS# 24613-89-6) 10 lbs. (4.54 kg)
Chromium phosphate (CAS# 7789-04-0) 10 lbs. (4.54 kg)
Chromium(VI) oxide (CAS# 1333-82-0) 10 lbs. (4.54 kg)
California Proposition 65: This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

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: Product Safety and Regulatory Affairs

Issue date: 02/24/2023

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American Dry Ice Corporation

Safety Data Sheet Carbon Dioxide, Solid

Creation Date: 01/01/2015

Revision 1

Section 1: IDENTIFICATION

Product Identifier: Carbon Dioxide, Solid (Dry Ice)

Trade Names/Common Names

Solid Carbon Dioxide; Carbonic Anhydride, Nuggets, Pellets, Block Dry Ice, Hot Ice

CAS No: 124-38-9

Identified Uses

Industrial applications

Restrictions on Use

None known

Manufacturer's Name

American Dry Ice Corporation

Address (Number, Street, City, State and Zip Code)

19 Second Street, PO Box 719

Palmer Industrial Park

Palmer, MA 01069

Emergency Telephone Number

(800)248-1104 and/or (413)283-9906

Telephone Number for Information

(603)425-2500

E-Mail Address

adryice@myfairpoint.net

Section 2: HAZARDS IDENTIFICATION

Classification in accordance with 29 CFR 1910.1200

Hazard Statements

CO₂ can cause suffocation. Higher concentrations cause circulatory insufficiencies which cause headach, nausea, vomiting and unconsciousness. Dry ice when touched can cause severe frostbite which is a change in the color of the skin to gray or white possible followed by blistering.

Precautionary Statements

Prevention

Persons in ill health where such illnesses would be aggravated by exposure to Carbon Dioxide should not be allowed to work with or handle this product. Persons with respiratory disease or heart disorders should avoid breathing excessive Carbon Dioxide.

Response

Immediately assist person overcome by CO₂ to an uncontaminated area to inhale fresh air. Unconscious persons after being moved to fresh air should be given mouth-to-mouth resuscitation, administered oxygen, and medical assistance sought immediately. Rescue personnel should be equipped with self-contained breathing apparatus with full face mask. Frostbite-DO NOT USE HOT WATER. Immerse affected area in lukewarm water and promptly and see a physician.

Storage

Store dry ice in well ventilated areas away from heat. Storage containers specifically manufactured for the storage of dry ice should be used. Local exhaust ventilation and/or general dilution ventilation should be used to meet OSHA TWA 5,000PPM/ACGIH TLV 5,000PPM. Anyone handling dry ice should wear insulated gloves, heavy clothing, face shields, and safety shoes.

Disposal

Move waste to a well ventilated and isolated area and allow to sublime. Area must be supervised until sublimation of all dry ice. DO NOT PUT DRY ICE IN SEALED CONTAINERS UNLESS SPECIFICALLY DESIGNED FOR THAT PURPOSE.



American Dry Ice Corporation

Safety Data Sheet Carbon Dioxide, Solid

Creation Date: 01/01/2015

Revision 1

Section 3: COMPOSITION

CAS No: 124-38-9

Components

Carbon Dioxide, solid (Dry Ice).

Section 4: FIRST-AID MEASURES

Inhalation

In high concentrations may cause asphyxiation. Symptoms may include headache, nausea, vomiting and unconsciousness. Immediately assist person overcome by CO₂ to an uncontaminated area to inhale fresh air. Unconscious persons after being moved to fresh air should be given mouth-to-mouth resuscitation, administered oxygen, and medical assistance sought immediately. Rescue personnel should be equipped with self-contained breathing apparatus with full face mask.

Skin/eye contact

Dry Ice when touched can cause severe frostbite which is a change in the color of the skin to gray or white possibly followed by blistering. Frostbite- DO NOT USE HOT WATER. Immerse affected area in lukewarm water and promptly see a physician. For Eye protection use safety glasses or full face shield. Protective Gloves with insulation should be used when handling dry ice. Long sleeve shirts should be worn when handling dry ice as well as pants or coveralls. Ties should be removed when viewing ice making equipment.

Ingestion

Do not ingest Dry Ice, if ingested obtain medical assistance.

Section 5: FIRE FIGHTING MEASURES

Suitable extinguishing media

Non-flammable, inert gas

Specific Hazards

This material is non-combustible, used as an extinguishing agent for smothering class B&C fires. Dry Ice should not be stored in air tight containers unless specifically designed for that purpose; when confined in sealed containers, heat will cause sublimation resulting in container rupture or an explosion.

Hazardous combustion products

None.

Fire Fighting Measures

Move container away from fire area or cool with water and spray until well after fire is out if it can be done without risk.

Special Protective Equipment for Fire Fighters

Wear full protective fire fighting gear including self contained breathing apparatus if in confined space.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions

Evacuate area of all personnel and provide with adequate ventilation. Clean up should be provided by personnel wearing self-contained breathing apparatus with full mask, insulated gloves, heavy protective clothing, and safety shoes.



American Dry Ice Corporation

Safety Data Sheet Carbon Dioxide, Solid

Creation Date: 01/01/2015

Revision 1

Environmental precautions

Try to stop release. Prevent from entering sewers, basements, and workpits, or any place where its accumulation can be dangerous.

Clean up methods

Ventilate area.

Section 7: HANDLING AND STORAGE

Handling

Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Anyone handling dry ice should wear insulated gloves, heavy clothing, face shields and safety shoes.

Storage

Keep container below 50°C in a well ventilated place.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protection

Ensure adequate ventilation. Exhaust fans where necessary.

Exposure limit

Local exhaust ventilation and/or general dilution ventilation should be used to meet OSHA TWA 5,000PPM.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical state

Appearance and Odor

White opaque solid;slight pungent odor. No odour warning properties.

Molecular weight: 44 g/mol

Melting point [°C]: -56.57, [°F]: -69.83 @75.1 PSIA

Boiling point/Sublimation point [°C]: -79 [°F]: -109

Specific Gravity (water=1): 1 ATM 1.014@2°F

Vapor Pressure (mm Hg.): @70°F (21°C)= 845PSIA

Vapor Density (air=1): @70°F (21°C)=.1144lb/ft³

Solubility in Water: @68°F (20°C) = 87%

Evaporation Rate: Not available

Flammable Limits: Not available

Section 10: STABILITY AND REACTIVITY

Stability and reactivity

Stable under normal conditions of storage and use.

Section 11: TOXICOLOGICAL INFORMATION

Toxicological information

Higher concentrations cause circulatory insufficiencies which cause headache, nausea, vomiting and unconsciousness.



American Dry Ice Corporation

Safety Data Sheet Carbon Dioxide, Solid

Creation Date: 01/01/2015

Revision 1

Section 12: ECOLOGICAL INFORMATION

General

When discharged in large quantities may contribute to the greenhouse effect.

Global warming potential [CO₂=1]: 1

Section 13: DISPOSAL CONSIDERATIONS

Waste disposal method

Move waste to a well ventilated and isolated area and allow to sublime. Area must be supervised until sublimation of all dry ice. DO NOT PUT DRY ICE IN SEALED CONTAINERS UNLESS SPECIFICALLY DESIGNED FOR THAT PURPOSE.

Section 14: TRANSPORT INFORMATION

IMDG

Shipping Name: Carbon dioxide, solid

DOT#: UN1845 **Hazard Class:** 9

Required Label(s): 9

Other transport information

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. Ensure adequate ventilation.

Section 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture: Ensure all national/local regulations are observed.

Section 16: OTHER INFORMATION

Other information

The hazard of asphyxiation is often overlooked and must be stressed during operator training. Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Advice

Judgments as to the suitability of information herein for purchaser's purposes are necessarily purchaser's responsibility. Therefore, although reasonable care has been taken in preparation of such information, American Dry Ice extends no warranty, makes no representations, and assumes no responsibility as to the accuracy or suitability of such information for application to purchaser's intended purposes or consequences of its use. Since American Dry Ice has no control over the use of this product, it assumes no liability for damage or loss of product resulting from proper (or improper) use or application of the product. Data sheets may be changed from time to time. Be sure to consult the latest edition.

End of document

Product Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Numbers/Series:

CHR® Pressure-sensitive Adhesive Tapes—Glass Foil with APSA

Other/Generic Names:

Aluminum Foil Laminated to High-Temperature Glass Tape

Manufacturer:

Saint-Gobain Performance Plastics
14 McCaffrey St., PO Box 320
Hoosick Falls, NY 12090-0320

For More Information:

Product Safety Department: (518) 686-7301
(8 AM to 5 PM, Eastern Time)

2. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient Name	CAS #	Weight %
Fibrous glass	65997-17-3	10–60
Trimethylated silica	068988567	5–30
Aluminum	7429-90-5	5–30
Polysiloxane adhesive	070131678	5–30

Note: The above product(s) are considered “articles” according to OSHA Hazard Communication Standard 29 CFR 1910.1200 and, as such, are exempt from the material safety data sheet provisions of 29 CFR 1910.1200 (G) (6). As a courtesy to the customer, Saint-Gobain Performance Plastics has prepared this product safety data sheet to provide appropriate safety and handling information. These products are considered nonhazardous when used according to accepted practices for the intended use.

3. HAZARDS IDENTIFICATION

Emergency Overview

Potential Health Hazards:

SKIN:	Contact with the pressure-sensitive adhesive face may cause skin irritations or injury.
EYES:	Not a likely route of entry
INHALATION:	Not a likely route of entry
INGESTION:	Not a likely route of entry
DELAYED EFFECTS:	None known

Ingredients found on one of the OSHA-designated carcinogen lists are listed below:

Ingredient Name	NTP Status	IARC Status	OSHA Standard
N/A	N/A	N/A	N/A

4. FIRST AID MEASURES

N/A for material as supplied at room temperature.

5. FIRE FIGHTING MEASURES

FLASH POINT:	N/A
AUTO IGNITION TEMPERATURE:	N/A
FLAMMABLE LIMITS IN AIR (% BY VOL.):	N/A, solid material
EXTINGUISHING MEDIA:	Use media appropriate to primary source of fire.
UNUSUAL FIRE HAZARDS:	N/A

6. ACCIDENTAL RELEASE MEASURES

N/A, solid material

7. HANDLING AND STORAGE

Store and handle using good warehouse practices. Avoid excessive temperatures and high humidity.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:	N/A
PERSONAL PROTECTIVE EQUIPMENT	
RESPIRATORY PROTECTION:	Use appropriate NIOSH-approved respirator in presence of decomposition fumes.
EYES AND FACE:	Use of safety glasses is recommended.
HANDS, ARMS, AND BODY:	Pressure-sensitive adhesive may stick to skin and cause superficial injury. Edges of material are sharp and can produce cuts, particularly if material is being rewound or slit at high speeds.
OTHER CLOTHING AND EQUIPMENT:	N/A

Exposure Guidelines

Guidelines exist for the following ingredients:

Ingredient Name	ACGIH TLV	OSHA PEL	Other Limit
N/A	N/A	N/A	N/A

Other exposure limits for the decomposition products normally associated with product use are as follows: N/A

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Fabric reinforced aluminum foil with pressure-sensitive adhesive on one face; may have paper or plastic release liner.
PHYSICAL STATE:	Solid
MOLECULAR WEIGHT:	N/A
CHEMICAL FORMULA:	N/A
ODOR:	Slight characteristic odor
SPECIFIC GRAVITY:	N/D
SOLUBILITY IN WATER:	Insoluble
pH:	N/A
BOILING POINT:	N/A
MELTING POINT:	N/A
VAPOR PRESSURE:	N/A
VAPOR DENSITY:	N/A
EVAPORATION RATE:	N/A
% VOLATILES:	N/D
FLASH POINT:	N/A

10. STABILITY AND REACTIVITY

NORMALLY STABLE?	Stable
INCOMPATIBILITIES:	Strong oxidizers, acids, bases, organic solvents.
HAZARDOUS DECOMPOSITION PRODUCTS:	Under commonly recommended conditions decomposition is not anticipated.
HAZARDOUS POLYMERIZATION?	Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS:	No acute effects have been identified.
DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:	No delayed or chronic effects have been identified.
OTHER DATA:	N/A

12. ECOLOGICAL INFORMATION

These materials are chemically unreactive, non-toxic, non-water soluble, and non-biodegradable.

13. DISPOSAL CONSIDERATIONS

OTHER DISPOSAL CONSIDERATIONS: Dispose in an approved landfill or by incineration, in compliance with federal, state, and local regulations.

14. TRANSPORT

US DOT HAZARD CLASS:	N/A
US DOT ID NUMBER:	N/D

15. REGULATORY INFORMATION

Toxic Substances Control Act (TSCA)

TSCA INVENTORY STATUS:	All components are listed on the TSCA Inventory.
OTHER TSCA ISSUES:	None

SARA Title III / CERCLA

Reportable Quantities (RQs) and/or Threshold Planning Quantities (TPQs) exist for the following ingredients:

Ingredient Name	SARA/CERCLA	SARA EHS
N/A	N/A	N/A

Spills/releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center (1 (800) 424-8802) and to your Local Emergency Planning Committee.

SECTION 311 HAZARD CLASS: N/D

SARA 313 Toxic Chemicals

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:

CAS#	Chemical Name	% by Weight
None	N/A	N/A

State Right to Know

In addition to the ingredients found in section 2, the following are listed for state right-to-know purposes:

CAS#	Chemical Name	% by Weight
N/A	N/A	N/A

ADDITIONAL REGULATORY INFORMATION: N/A

WHMIS CLASSIFICATION (CANADA): N/D

FOREIGN INVENTORY STATUS: N/D

16. OTHER INFORMATION

CURRENT ISSUE/REVIEW DATE: 1/22/04

PREVIOUS ISSUE/REVIEW DATE:

CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:

3/29/04 consolidation of similar products

PUBLISHED BY: Document Control Department, Saint-Gobain Corporation

PSDS NO. AFF-1331
N/A=not applicable

N/D=not determined
Issue/Review date: 6/04

NOTE: The information in this document is provided free of charge and is based on technical data that Saint-Gobain Performance Plastics Corporation believes to be reliable. It is intended for use by persons having technical skill, at their own discretion and risk. Because conditions of product use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information. Suitability for use in a particular application is the ultimate responsibility of the end-user.

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Safety Data Sheet

Material Name: CRAYOLA® CHALK

SDS ID: CRAY-028

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

CRAYOLA® CHALK

Synonyms

CRAYOLA COLORED CHALK; CRAYOLA DRAWING CHALK; CRAYOLA MOLDED CHALK; CRAYOLA SIDEWALK CHALK/CRAYONS; CRAYOLA GIANT CHALK; CRAYOLA 3-D CHALK; CRAYOLA GLOW CHALK; CRAYOLA GLITTER CHALK; CRAYOLA TIE DYED CHALK; CRAYOLA CHALKBOARD CHALK; CRAYOLA ANTI-DUST LOW DUST CHALK; PRODUCT CODE(S): 03-4984; 03-4985; 03-4986; 03-4987; 03-4988; 03-4989; 03-4490; 03-4990; 03-4991; 04-4992; 03-4994; 03-4995; 03-4996; 03-4997; 03-4998; 03-4999; 03-5037; 03-5039; 03-5053; 03-5044; 03-5061; 03-5063; 03-5064; 03-5066; 03-5067; 03-5068; 03-5071; 03-5072; 03-5073; 03-5078; 03-5079; 03-5080; 03-5081; 03-5090; 03-5091; 03-5092; 03-5093; 03-5094; 03-5101; 03-5102; 03-5103; 03-5104; 03-5105; 03-5106; 03-5107; 03-5108; 03-5111; 03-5200; 03-5201; 03-5202; 03-5203; 03-5204; 03-5205; 03-5206; 03-5207; 03-5208; 03-5209; 03-5210; 03-5211; 03-5212; 03-5213; 03-5214; 03-5215; 03-5216; 03-5217; 03-5218; 03-5220; 03-5224; 03-5225; 03-5226; 03-5228; 03-5229; 03-5230; 03-5231; 03-5232; 03-5233; 03-5234; 03-5235; 03-5301; 03-5302; 03-5303; 03-5304; 03-5350; 03-5398; 03-5399; 03-5401; 03-5800; 03-5801; 03-5802; 03-5803; 03-5804; 03-5805; 03-5806; 03-6100; 03-7603; 04-0145; 04-0294; 04-0295; 04-0296; 04-0413; 04-0530; 04-0555; 04-0456; 04-0586; 04-0608; 04-0640; 04-0945; 04-0944; 04-0984; 04-1907; 04-1950; 04-1951; 04-2542; 04-5033; 04-5350; 04-5355; 04-5358; 04-5718; 04-5719; 04-5727; 04-5873; 04-6010; 04-6874; 04-6887; 50-1402; 51-0012; 51-0036; 51-2004; 51-0200; 51-0312; 51-0320; 51-0320; 51-0400; 51-0403; 51-0404; 51-0816; 51-1015; 51-1020; 51-1200; 51-1202; 51-1205; 51-1206; 51-1216; 51-1503; 51-1515; 51-1524; 51-1650; 51-1660; 51-1661; 51-1662; 51-1663; 51-2010; 51-2012; 51-2016; 51-2024; 51-2024; 51-2036; 51-2048; 51-2049; 51-2050; 51-2051; 51-2053; 51-2064; 51-2065; 51-2515; 51-3505; 51-3515; 51-3523; 51-4005; 51-4008; 51-4023; 51-4102; 51-4103; 51-4104; 51-4105; 51-4107; 51-4108; 51-4109; 51-4110; 51-4111; 51-5298; 51-5299; 51-7000; 51-8015; 51-8020; 51-8052; 51-8064; 55-4403 ; 81-1378

Product Description

Finished product.

Product Use

Arts and Crafts

Restrictions on Use

None known.

Details of the supplier of the safety data sheet

CRAYOLA LLC

1100 Church Lane

Easton, PA 18044

Phone: 1-800-272-9652

Emergency Phone #: Health Emergency - Call local POISON CONTROL

E-mail: support@crayola.com

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

None needed according to classification criteria.

GHS Label Elements

Symbol(s)

None needed according to classification criteria.

Signal Word

None needed according to classification criteria

Hazard Statement(s)

None needed according to classification criteria.

Safety Data Sheet

Material Name: CRAYOLA® CHALK

SDS ID: CRAY-028

Precautionary Statement(s)

Prevention

None needed according to classification criteria.

Response

None needed according to classification criteria.

Storage

None needed according to classification criteria.

Disposal

Dispose in accordance with all applicable federal, state/regional and local laws and regulations.

Other Hazards

None known.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
Not available	Product has been certified as nontoxic by the Art & Creative Materials Institute, Inc. and conforms to ASM D 4236 standard practice for labeling art materials for acute and chronic adverse health hazards.	100

Component Related Regulatory Information

The chemical identity and/or percentage of composition is being withheld as a trade secret.

Section 4 - FIRST AID MEASURES

Inhalation

It is unlikely that emergency treatment will be required. Remove from exposure. Get medical attention, if needed.

Skin

It is unlikely that emergency treatment will be required. If adverse effects occur, wash with soap or mild detergent and large amounts of water. Get medical attention, if needed.

Eyes

It is unlikely that emergency treatment will be required. Flush eyes with plenty of water for at least 15 minutes. If eye irritation persists: Get medical advice/attention.

Ingestion

Call a poison control center or doctor immediately for treatment advice.

Most Important Symptoms/Effects

Acute

No information on significant adverse effects.

Delayed

No information on significant adverse effects.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

carbon dioxide, regular dry chemical, regular foam, Water

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Unsuitable Extinguishing Media

None known.

Hazardous Combustion Products

Oxides of carbon

Advice for firefighters

Slight fire hazard.

Fire Fighting Measures

Move container from fire area if it can be done without risk. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

Special Protective Equipment and Precautions for Firefighters

Wear protective clothing and equipment suitable for the surrounding fire.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

None.

Methods and Materials for Containment and Cleaning Up

Stop leak if possible without personal risk. Collect spilled material in appropriate container for disposal.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Wash thoroughly after handling. Use methods to minimize dust.

Conditions for Safe Storage, Including any Incompatibilities

None needed according to classification criteria.

Store and handle in accordance with all current regulations and standards. See original container for storage recommendations. Keep separated from incompatible substances.

Incompatible Materials

oxidizing materials

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)

There are no biological limit values for any of this product's components.

Engineering Controls

Based on available information, additional ventilation is not required.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

Eye protection not required under normal conditions.

Skin Protection

Protective clothing is not required under normal conditions.

Respiratory Protection

No respirator is required under normal conditions of use. Under conditions of frequent use or heavy exposure, respiratory protection may be needed.

Glove Recommendations

Protective gloves are not required under normal conditions.

Safety Data Sheet

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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	various colors	Physical State	solid
Odor	odorless	Color	various colors
Odor Threshold	Not available	pH	Not available
Melting Point	Not available	Boiling Point	Not available
Boiling Point Range	Not available	Freezing point	Not available
Evaporation Rate	Not available	Flammability (solid, gas)	Not available
Autoignition Temperature	Not available	Flash Point	Not available
Lower Explosive Limit	Not available	Decomposition temperature	Not available
Upper Explosive Limit	Not available	Vapor Pressure	Not available
Vapor Density (air=1)	Not available	Specific Gravity (water=1)	Not available
Water Solubility	(Insoluble)	Partition coefficient: n-octanol/water	Not available
Viscosity	Not available	Kinematic viscosity	Not available
Solubility (Other)	Not available	Density	Not available
Physical Form	solid	Molecular Weight	Not available

Section 10 - STABILITY AND REACTIVITY

Reactivity

No hazard expected.

Chemical Stability

Stable at normal temperatures and pressure.

Possibility of Hazardous Reactions

Will not polymerize.

Conditions to Avoid

None reported.

Incompatible Materials

oxidizing materials

Hazardous decomposition products

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Oxides of carbon.

Thermal decomposition products

Oxides of carbon

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation

No information on significant adverse effects.

Skin Contact

No information on significant adverse effects.

Eye Contact

No information on significant adverse effects.

Ingestion

No information on significant adverse effects.

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.

Product Toxicity Data

Acute Toxicity Estimate

No data available.

Immediate Effects

No information on significant adverse effects.

Delayed Effects

No information on significant adverse effects.

Irritation/Corrosivity Data

None

Respiratory Sensitization

No information available for the product.

Dermal Sensitization

No information available for the product.

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA.

Germ Cell Mutagenicity

No information available for the product.

Tumorigenic Data

No data available

Reproductive Toxicity

No information available for the product.

Specific Target Organ Toxicity - Single Exposure

No target organs identified.

Specific Target Organ Toxicity - Repeated Exposure

No target organs identified.

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Aspiration hazard

no data available.

Medical Conditions Aggravated by Exposure

No data available.

Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity

No information available for the product.

Component Analysis - Aquatic Toxicity

No LOLI ecotoxicity data are available for this product's components.

Persistence and Degradability

No information available for the product.

Bioaccumulative Potential

No information available for the product.

Mobility

No information available for the product.

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

US DOT Information:

UN/NA #: Not regulated

IATA Information:

UN#: Not regulated

ICAO Information:

UN#: Not regulated

IMDG Information:

UN#: Not regulated

International Bulk Chemical Code

This material does not contain any chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations

None of this product's 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) reporting categories

No hazard categories applicable.

U.S. State Regulations

None of this product's components are listed on the state lists from CA, MA, MN, NJ or PA.

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California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

Not listed under California Proposition 65.

Component Analysis - Inventory

U.S. Inventory (TSCA)

All of the components of this product are listed on the TSCA Inventory.

Section 16 - OTHER INFORMATION

NFPA Ratings

Health: 1 Fire: 1 Instability: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes

8/18/2020 - Update to Section(s) 15.

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); 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; EC - European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); 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; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; KR REACH CCA - Korea Registration and Evaluation of Chemical Substances Chemical Control Act; 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; MX - Mexico; Ne - Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL - Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL - Permissible Exposure Limit; 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; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA - Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TH-TECI - Thailand - FDA Existing Chemicals Inventory (TECI); TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW - Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).

Other Information

Disclaimer:

Supplier gives no warranty whatsoever, including the warranties of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser shall determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental,

Safety Data Sheet

Material Name: CRAYOLA® CHALK

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consequential or any other damages arising out of the use or misuse of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights.



SAFETY DATA SHEET

1. Product and Company Identification

Product Name: DGF 123

Product Code:

Product Type: Aerosol

Product Use: Dry Film Lubricant

Manufacturer: Miracle Power Products, a division of Griggs, LLC

Revision Date: 2/5/2020

Address: PO Box 950

Salem, OH 44460

Phone: (330)332-9931

Blender: Eveready Products Corp

Address: 1101 Belt Line

Cleveland, Ohio 44109

Phone: (216)-661-2755

NOTE: The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. We provide this information as guidance for providing personal protection to your employees. The user has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. The user must meet all applicable safety and health standards. We provide this information as guidance for providing personal protection to your employees.

2. Hazard Identification

Classification of substance or mixture:

Aerosols	Category 1	
Gases under pressure	Liquefied gas	
Specific target organ toxicity, single exposure	Category 3	Central nervous system
Specific Target organ toxicity, Repeated exposure	Category 1	Skin
Aspiration Hazard	Category 1	
Eye Damage/Irritation	Category 1	
Skin Irritation	Category 2	
Skin Sensitization	Category 1	

GHS Label elements:

Pictograms



Signal Word: Danger

Hazard Statement(s)

- H222 Extremely flammable aerosol
- H280 Contains gas under pressure; may explode if heated
- H315 Causes skin irritation
- H317 May cause an allergic skin reaction
- H319 Causes serious eye irritation
- H336 May cause drowsiness or dizziness
- H372 Causes damage to organs through prolonged repeated exposure
- H305 May be fatal if swallowed and enters airways

Precautionary Statements:

Prevention

- 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 /gas/mist vapors/spray
- P261 Avoid breathing dust/fume/gas/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
- P272 Contaminated work clothing should not be allowed out of the workplace.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

- P302+P352 If on skin: wash with plenty of soap and water.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P362+P364 Take off contaminated clothing and wash it before reuse.
- P301+P310 If Swallowed: Immediately call a poison center or doctor
- P331 Do not induce vomiting
- 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.
- P312+P314 Call a poison center or doctor/physician if you feel unwell.
- P310 Immediately call a Poison Center/doctor if in eyes
- P403 Store in a well-ventilated place.
- P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F
- P405 Store locked up
- P501 Dispose of contents/container in accordance with local/regional regulations.

3. Composition Information on ingredients

Ingredients	CAS #	Percent
Acetone	67-64-1	40-50%
Liquified Petroleum Gas	68476-86-8	35-45%
Isopropyl Alcohol	67-63-0	8-12%
n-Butanol	71-36-3	<2%
Solid Lubricant	7782-42-5	<3%
1-methoxy-2 propanol	107-98-2	<1%

4. First Aid Measures

Eye Contact:

Flush with warm water for 15 minutes. Seek medical attention.

Skin Contact:

Wash with soap and water. Remove any contaminated clothing and launder before reusing. If irritation persists, seek medical attention.

Inhalation:

Remove exposed individual to fresh air, protecting yourself. Restore breathing if necessary. Contact a physician.

Ingestion:

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

5. Fire Fighting Measures

Flash Point: Flash point of liquid portion < 30°F

Flammable limits in air, % by volume:

Upper: 9.5%(vol) Gas in Air
Lower: 1.8% (vol) Gas in Air

Extinguishing Media:

Dry chemical, carbon dioxide, halon, or foam is recommended. Water spray may be used to cool containers or structures. Halon may decompose into toxic materials and carbon dioxide will displace oxygen, take proper precautions when using these materials.

Unusual Fire & Explosion Hazards:

This material may be ignited by extreme heat, sparks, flames or other ignition sources (static electricity). Vapors are heavier than air and will collect in low areas (sewers) or travel considerable distances. If containers are not cooled in a fire, they may rupture and ignite.

Special Fire Fighting Procedures:

At elevated temperatures (over 130F) aerosol container may burst, vent or rupture; use equipment or shielding to protect personnel. Cooling exposed containers with streams of water may be helpful. Emergency responders should wear self-contained breathing apparatus. Wear other protective gear as

conditions warrant. Keep unauthorized people out and try to contain spills or leaks if it can be done safely. Material will float on water, avoid spreading the fire.

6. Accidental Release Measures

Spill or Leak Instructions

Contain spill with dikes of soil or nonflammable absorbent to minimize contaminated area. Avoid run-off into storm sewers and ditches leading to waterways. If required, notify state and local authorities. Place leaking containers in well-ventilated area. Clean up small spills by using a nonflammable absorbent or flushing sparingly with water. Contain larger spills with nonflammable diking or absorbent. Clean up by vacuuming or sweeping.

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind; keep out of low areas. Assess the spill situation, as the spill may not evolve large amounts of hazardous airborne contaminants in many outdoor spill situations. It may be advisable in some cases to simply monitor the situation until spilled product is removed.

7. Handling and Storage

Handling:

Store below 120°F in cool, dry area, out of direct sunlight and away from strong oxidizers. Do not puncture or burst. Use in accordance with good workplace practices. Use with adequate ventilation. Keep containers closed when not in use. Always open containers slowly to allow any excess pressure to vent. Avoid breathing vapor. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling. Decontaminate soiled clothing thoroughly before re-use. Destroy contaminated leather clothing.

Empty containers may contain residues from the product. Treat empty containers with the same precautions as the material last contained. Do not cut, weld or apply heat to empty containers Do not incinerate

Storage:

Store in a cool, dry area, away form heat or direct sunlight. Keep containers closed when not in use. Do not store with incompatible materials

8. Exposure Controls / Personal Protection

Protective Equipment:

Use synthetic gloves if necessary, to prevent excessive skin contact. Do not wear contacts and always use ANSI approved safety glasses or splash shield.

Engineering Controls:

General or dilution ventilation is frequently sufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Use a NIOSH approved respirator if ventilation is not adequate to maintain exposures below TLV levels.

Respiratory Protection:

Use adequate ventilation to maintain exposure limits. If the exposure limits of the products or any of its components is exceeded, an approved organic vapor mask should be used (consult your safety equipment supplier). Above exposure levels an approved self-contained breathing apparatus or airline respirator with full face-piece is required

Other Suggested Equipment:

Eye wash station and emergency showers should be available. Spill containment equipment should be available.

Discretion Advised:

We take no responsibility for determining what measures are required for personal protection in any specific application. The general information should be used with discretion.

Exposure guidelines:

Ingredients	CAS #	Exposure Limits
Liquefied Petroleum Gas	68476-86-8	OSHA (PEL) 1000 ppm ACGIH TLV 1000
Acetone	67-64-1	OSHA (PEL) 1000 ppm ACGIH (TLV) 500 ppm
n-Butanol	71-36-3	OSHA (TWA) 100 ppm ACGIH (TWA) 20 ppm
Isopropanol	67-63-3	OSHA (PEL) 400 ppm ACGIH (TLV) 200 ppm
Propylene Glycol Methyl Ether	107-98-2	OSHA (PEL) 100 ppm ACGIH (TWA) 100 ppm
Solid Lubricant (graphite)	7782-42-5	OSHA (TWA) 15 mppccf ACGIH (TLV) 2mg/m ³

9. Physical and Chemical Properties

Appearance: Black	Odor: Ether like
Evaporation Rate: Ether = 1 Slower	
PH: NA	Melting/Freezing point: NE
Initial Boiling point and boiling range: NE	Flash Point: Flash point of propellant <0°F
Flammability: NA	Vapor pressure: >30 psi
Vapor density >1 (Air=1)	
Relative density NE	Solubility: negligible
Partition coefficient: NE	Auto-ignition temperature: NE
Decomposition temperature: NE	Viscosity: NA
Flammable limits in air, % by volume: (propellant portion)	
Upper: 9.5%(vol) Gas in Air	
Lower: 1.8% (vol) Gas in Air	

10. Stability and Reactivity

Stability: Stable	Conditions to Avoid: Heat, spark, and open flame
Incompatibility: Strong-Oxidizing Agents	
Hazardous Decomposition: Combustion will produce Carbon Monoxide, Carbon Dioxide and hydrocarbons.	
Hazardous Polymerization: Will not occur	

11. Toxicological Information

Component Toxicological Information:

Component Toxicological Information:

Acute oral toxicity

Acetone	LD 50 Rat:	5,800 mg/kg
Isopropyl Alcohol	LD 50 Rat	5054 mg/kg
n-Butyl alcohol	LD 50 Rat	790 mg/kg
1-Methoxy-2-Propanol	LD 50 Rat	790mg/kg

Acute inhalation toxicity

Acetone	LC 50 Rat	> 16000 ppm, 4 h
Isopropyl Alcohol	LC rat	16,000 mg/l, 8 h
n-Butyl alcohol	LC50 Rat	8000 ppm 4 h
1-Methoxy-2-Propanol	LC 50 Rat	15000 ppm 4 h

Acute dermal toxicity

Acetone	LD 50 Rabbit:	> 20,000
mg/kg Isopropyl Alcohol	LD 50 rabbit:	12,800
mg/kg N-Butyl alcohol	LD50Rabbit	3400 mg/k
1-Methoxy-2-Propanol	LD50Rabbit	13 g/kg

12. Ecological Information

Acetone

Toxicity to fish	LC50 – Oncorhynchus mykiss (rainbow trout) – 5,540 mg/l 96h
Toxicity to daphnia	LC50 Daphnia magna (water flea) – 8,800 mg/l 48h
Toxicity to algae	No data

Isopropanol

Toxicity to Fish	: LC 50 (pimephales promelas (fathead minnow)): 9,640 mg/l Exposure 96 h
Toxicity to daphnia	: EC50 (Daphnia magna (water flea)): 10,000 mg/l Exposure 24 h
Toxicity to bacteria	: toxicity threshold (pseudomonas putida): 1,050 mg/l Exposure 16 h

13. Disposal Considerations

Do not puncture or burn containers. Give empty, leaking, or full containers to disposal service equipped to handle and dispose of aerosol (pressurized) containers. Dispose of spilled material in accordance with state and local regulations for waste that is non-hazardous by Federal definition. Note that this information applies to the material as manufactured; processing, use, or contamination may make this information inappropriate, inaccurate, or incomplete.

Note that this handling and disposal information may also apply to empty containers, liners and rinsate. State or local regulations or restrictions are complex and may differ from federal regulations. This information is intended as an aid to proper handling and disposal; the final responsibility for handling and disposal is with the owner of the waste. See Section 9 - Physical and Chemical Properties.

14. Transport Information

Aerosols (limited quantity),
Class 2.1, ERG 126

AIR (IATA)
Aerosols (limited quantity),
Class 2.1, ERG 126, UN No. 1950
Vessel
Aerosol (Limited Quantity), Class 2.1, UN No 1950

15. Regulatory Information

Environmental Regulations

SARA 302/304:

None

SARA 311/312:

Immediate (x) Delayed () Fire (x) Reactive () Sudden Release of Pressure (x)

Section 313

This product contains:

n-butyl alcohol 71-3-3

California Prop 65

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

BENZENE

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

BENZENE

All the chemicals used in this product are TSCA listed.
Check with your local regulators to be sure all local regulations are met.

16. Other Information

Hazard ratings This information is intended solely for the use of individuals trained in the NFPA and/or HMIS systems.

NFPA: Level 3 Aerosol

HMIS: Health: 2 Flammability: 4 Reactivity: 0

RATING: 4-EXTREME 3-HIGH 2-MODERATE 1-SLIGHT 0-INSIGNIFICANT

Note: This information pertains to industrial and personal use.

The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. We make no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. Effects can be aggravated by other materials and/or this material may aggravate or add to the effects of other materials. This material may be released from gas, liquid, or solid materials made directly or indirectly from it. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards. Possession of an MSDS does not indicate that the possessor of the MSDS was a purchaser or user of the subject product.



PRODUCT SAFETY INFORMATION SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

TRADE NAME: DW 407, DW 409, DW 411 DW495 DW 496

PRODUCT NUMBERS COVERED: DW 407, DW 409, DW 411 DW495 DW 496

USE OF ARTICLE: Plasma Spray Masking

DATE ISSUED: 05/01/2019

COMPANY/UNDERTAKING IDENTIFICATION: DeWAL Industries, Inc.
15 Ray Trainor Drive
Narrangansett, RI 02882
Phone: 401-789-9736
Email: msdsinfo@rogerscorporation.com

2. HAZARDS IDENTIFICATION

CLASSIFICATION OF THE MATERIAL: Not classified as hazardous to OSHA Hazard Communication Standard, 29 CFR 1910.1200

LABELING REQUIREMENTS: NE

EFFECTS OF OVEREXPOSURE: None anticipated with normal handling.

INHALATION: Not a likely source of exposure.

EYE CONTACT: Not a likely source of exposure.

SKIN CONTACT: No known significant effects.

INGESTION: Not a likely source of exposure.

CHRONIC: NE

3. COMPOSITION/INFORMATION ON INGREDIENTS

This material is produced as an "article" as defined in 20 CFR 1910.1200 and REGULATION (EC) N° 1907/2006 is therefore exempt from the Hazard Communication Standard and REACH. Since this material does not release and will not result in exposure to a hazardous chemical under normal conditions of use, no Safety Data Sheet is required.

<u>Chemical Name</u>	<u>CAS No.</u>	<u>%</u>
Fiber Glass (non-respirable)	65997-17-3	30-75%
Aluminum Foil	7429-90-5	5-40%
Polydimethylsiloxane adhesive	70131-67-8	5-30%

4. FIRST-AID MEASURES

INHALATION:	Not a likely route of entry.
EYE CONTACT:	Not a likely route of entry.
SKIN CONTACT:	Wash with cold water and mild soap. Contact with the adhesive face may cause skin irritation or injury.
INGESTION:	Not a likely route of entry.

5. FIRE-FIGHTING MEASURES

FLASH POINT:	None °C (°F)	Flammable Limits:	LEL	NA	UEL	NA
AUTOIGNITION TEMPERATURE:	NE °C (°F)					
EXTINGUISHING MEDIA:	X Water Spray X Dry Chemical	X	Foam	X	CO ₂	
		X	Other –			
SPECIAL FIRE FIGHTING PROCEDURES:	When conditions are severe and thermal decomposition is possible, wear full protective clothing, including helmet, self-contained positive pressure breathing apparatus, bunker coat and pants, bands around arms and legs, full face mask and protective covering for any exposed areas of the head.					
UNUSUAL FIRE AND EXPLOSION HAZARDS:	None known.					

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:	Observe cautions from other sections of PSIS. Nonhazardous solid.
ENVIRONMENTAL PRECAUTIONS:	None known.
CLEANING METHODS:	Sweep or shovel into normal trash. Avoid creation of nuisance dust.

7. HANDLING AND STORAGE

HANDLING:	When working with this product, wearing gloves will eliminate any chance of a skin irritation.
STORAGE:	Use normal storage procedures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Occupational Exposure Limits (OEL's)

<u>CHEMICAL NAME</u>	<u>CAS #</u>	<u>OEL</u> (mm/mg3)	<u>STEL</u> (mm/mg3)	<u>COMMENT</u>
				France

Fiberglass Fiber (non- 65997-17-3 ND ND Per IFA/GESTIS
 respirable) Refer to OSHA/ACGIH Standards
 referenced in Section 15 if necessary.

RESPIRATORY PROTECTION: None needed under normal conditions. If material is heated and odors are noticeable and/or irritating a respirator meeting NIOSH requirements should be used. A qualified individual should evaluate each situation.

VENTILATION

LOCAL: Recommended for all industrial operations.
 GENERAL: Recommended for all industrial operations.

PERSONAL PROTECTION

HAND: Gloves to avoid skin contact if desired.
 EYE: Safety glasses with side-shields are recommended in all industrial operations.
 SKIN: Gloves to avoid skin contact if desired.
 OTHER: Safety shower/eyewash in the area.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Fabric reinforced aluminum foil adhesive tape
 ODOR: Slight characteristic odor, foil tape
 PHYSICAL STATE: Solid
 BOILING POINT: NA °C (°F)
 MELTING POINT: NE °C (°F)
 FREEZING POINT: NA °C (°F)
 FLASH POINT: None °C (°F)
 WATER SOLUBILITY: In-Soluble
 VAPOR DENSITY: NA
 VAPOR PRESSURE: NA
 SPECIFIC GRAVITY: NE
 PARTITION COEFFICIENT: NA
 EVAPORATION RATE: NA
 RELATIVE DENSITY: NA
 VISCOSITY: NA
 AUTO-IGNITION TEMPERATURE: NE °C (°F)
 DECOMPOSITION TEMPERATURE: NE °C (°F)
 PH: NA
 FLAMMABILITY: NA

10. STABILITY AND REACTIVITY

STABLE X UNSTABLE _____

CONDITIONS TO AVOID: NE
 MATERIALS TO AVOID: Strong oxidizers, acids, bases and organic solvents.
 HAZARDOUS POLYMERIZATION: _____ May Occur X Does Not Occur
 HAZARDOUS DECOMPOSITION PRODUCTS: Under normal recommended conditions, decomposition is not expected.

11. TOXICOLOGICAL INFORMATION

CARCINOGENIC STATUS: Not listed as a Carcinogen by NTP, IARC or OSHA.

12. ECOLOGICAL INFORMATION

ECOTOXICITY: These products are chemically unreactive, non-toxic, non-water soluble and non- biodegradable.

13. DISPOSAL CONSIDERATION

PHYSICAL/CHEMICAL PROPERTIES AFFECTING DISPOSAL: None
ENVIRONMENTAL TOXICITY DATA: NA
WASTE DISPOSAL METHOD: Dispose of in accordance with applicable federal, state, provincial, and local laws and regulations.

14. TRANSPORT INFORMATION

UN NUMBER: Not Regulated by DOT, IATA, IMDG, ARD
UN PROPER SHIPPING NAME: Not Regulated by DOT, IATA, IMDG, ARD
HAZARD CLASS (ES): Not Regulated by DOT, IATA, IMDG, ARD
PACKING GROUP: Not Regulated by DOT, IATA, IMDG, ARD
ENVIRONMENTAL HAZARDS: Not Regulated by DOT, IATA, IMDG, ARD

15. REGULATORY INFORMATION

INTERNATIONAL REGULATIONS:
Canadian (DSL/NDSL): Article
Australian (ACIS): Article
Korea (KECI): Article
Japan (ENCS, MITI): Article
China (IECSC): Article
RoHS: Product is in compliance with the European Directive 2011/65/EC on Restriction on Hazardous Substances and the Chinese Administration Measure on the Control of Pollution Caused by Electronic Information.

EU REACH SVHC : Product is considered compliant with Regulation EC 1907/2006 or Registration, Evaluation, Authorization and restriction of Chemicals (REACH) legislation. No SVHC are present above 0.1% WT

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.

TSCA
(Toxic Substances Control Act): Article
CERCLA
(Comprehensive Emergency Response, Compensation, and Liability Act): NA
SARA TITLE III
(Superfund Amendments and Reauthorization Act): NA
311/312 HAZARD CATEGORIES: NA

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 40 CFR 372:

<u>CAS #</u>	<u>CHEMICAL NAME</u>	<u>PERCENT BY WEIGHT</u>
NA	NA	NA

16. OTHER INFORMATION

NA = Not Applicable

FILE: 99555 - DW 407, DW 409, DW 411, DW495,
DW 496 PSIS - 05042017

NE = Not Established

NC = Not Classified

PREPARED BY: Rogers Corporate EHS

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULT TO BE OBTAINED FROM THE USE THEREOF. ROGERS CORPORATION ASSUMES NO RESPONSIBILITY FOR PERSONAL INJURY OR PROPERTY DAMAGE TO VENDEES, USERS OR THIRD PARTIES CAUSED BY THE MATERIAL. SUCH VENDEES OR USERS ASSUME ALL RISKS ASSOCIATED WITH THE USE OF THE MATERIAL.

SAFETY DATA SHEET ELTINERT F GREASE

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name ELTINERT F GREASE
Product No. EGF, EEGF01K, EEGF25K, ZE

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

Identified uses Grease
Uses advised against At this moment in time we do not have information on use restrictions. They will be included in this safety data sheet when available

1.3. Details of the supplier of the safety data sheet

Supplier ELECTROLUBE. A division of HK
WENTWORTH LTD
ASHBY PARK, COALFIELD WAY,
ASHBY DE LA ZOUCH, LEICESTERSHIRE
LE65 1JR
UNITED KINGDOM
+44 (0)1530 419600
+44 (0)1530 416640
info@hkw.co.uk

1.4. Emergency telephone number

+44 (0)1530 419600 between 8.30am - 5.00pm GMT Mon – Fri

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical and Chemical Hazards	Not classified.
Human health	Not classified.
Environment	Not classified.

Classification (1999/45/EEC)

Not classified.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

2.2. Label elements

Label In Accordance With (EC) No. 1272/2008

No pictogram required.

2.3. Other hazards

Not Classified as PBT/vPvB by current EU criteria.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Composition Comments

Ingredients not listed are classified as non-hazardous or at a concentration below reportable levels.

SECTION 4: FIRST AID MEASURES

ELTINERT F GREASE

4.1. Description of first aid measures

Inhalation

Not relevant

Ingestion

Rinse mouth thoroughly. Drink plenty of water. Get medical attention.

Skin contact

Wash the skin immediately with soap and water. Get medical attention if irritation persists after washing.

Eye contact

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

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

Skin contact

Prolonged or repeated contact with skin may cause redness, itching, irritation and eczema/chapping.

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

Treat Symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media

This product is not flammable. Use fire-extinguishing media appropriate for surrounding materials.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

Unusual Fire & Explosion Hazards

No unusual fire or explosion hazards noted.

Specific hazards

The product is non-combustible. If heated, harmful vapours may be formed.

5.3. Advice for firefighters

Special Fire Fighting Procedures

No specific fire fighting procedure given.

Protective equipment for fire-fighters

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Absorb in vermiculite, dry sand or earth and place into containers. Flush with plenty of water to clean spillage area.

6.4. Reference to other sections

Wear protective clothing as described in Section 8 of this safety data sheet. See section 11 for additional information on health hazards. For waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Avoid spilling, skin and eye contact.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed original container in a dry, cool and well-ventilated place. Keep in original container.

ELTINERT F GREASE

Storage Class

Unspecified storage.

7.3. Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Ingredient Comments

No exposure limits noted for ingredient(s).

8.2. Exposure controls

Process conditions

Use engineering controls to reduce air contamination to permissible exposure level. Provide eyewash station.

Engineering measures

All handling to take place in well-ventilated area.

Hand protection

Use suitable protective gloves if risk of skin contact. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material. Gloves should conform to EN374

Eye protection

If risk of splashing, wear safety goggles or face shield. EN166

Other Protection

Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene measures

DO NOT SMOKE IN WORK AREA! Wash hands at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes wet or contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink or smoke.

Environmental Exposure Controls

Keep container tightly sealed when not in use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Grease
Colour	White.
Odour	No characteristic odour.
Solubility	Insoluble in water
Initial boiling point and boiling range (°C)	n/d
Relative density	1.90 base oil
Viscosity	1200 base oil mPas @ 20 °c (68 F)

9.2. Other information

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stable under normal temperature conditions.

10.3. Possibility of hazardous reactions

Not known.

Hazardous Polymerisation

Will not polymerise.

10.4. Conditions to avoid

Avoid excessive heat for prolonged periods of time.

ELTINERT F GREASE

10.5. Incompatible materials

Materials To Avoid

No specific, or groups of materials are likely to react to produce a hazardous situation.

10.6. Hazardous decomposition products

Fire creates: Carbon monoxide (CO). Carbon dioxide (CO₂).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Toxicological information

No information available.

Other Health Effects

This substance has no evidence of carcinogenic properties.

Ingestion

Liquid irritates mucous membranes and may cause abdominal pain if swallowed. Nausea, vomiting.

Health Warnings

No specific health warnings noted. No specific acute or chronic health impact noted, but this chemical may still have adverse impact on human health, either in general or on certain individuals with pre-existing or latent health problems.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

Not regarded as dangerous for the environment.

12.1. Toxicity

12.2. Persistence and degradability

Degradability

There are no data on the degradability of this product.

12.3. Bioaccumulative potential

Bioaccumulative potential

No data available on bioaccumulation.

12.4. Mobility in soil

Mobility:

The product contains substances, which are insoluble in water and which may spread on water surfaces.

12.5. Results of PBT and vPvB assessment

This product does not contain any PBT or vPvB substances.

12.6. Other adverse effects

Not available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Dispose of waste and residues in accordance with local authority requirements.

SECTION 14: TRANSPORT INFORMATION

General

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

Road Transport Notes

Not Classified

Rail Transport Notes

Not classified.

Sea Transport Notes

Not classified.

Air Transport Notes

Not classified.

ELTINERT F GREASE

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

Transport Labels

No transport warning sign required.

14.4. Packing group

14.5. Environmental hazards

Environmentally Hazardous Substance/Marine Pollutant

No.

14.6. Special precautions for user

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No information required.

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Statutory Instruments

The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (S.I 2009 No. 716). Control of Substances Hazardous to Health.

Guidance Notes

Workplace Exposure Limits EH40.

EU Legislation

Commission Directive 2000/39/EC of 8 June 2000 establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments.

Authorisations (Title VII Regulation 1907/2006)

No specific authorisations are noted for this product.

Restrictions (Title VIII Regulation 1907/2006)

No specific restrictions of use are noted for this product.

15.2. Chemical Safety Assessment

No chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

Issued By	Helen O'Reilly
Revision Date	APRIL 2013
Revision	6
SDS No.	11523

Disclaimer

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 process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

EVERLUBE[®] PRODUCTS

SAFETY DATA SHEET

ESNALUBE 382

Page 1 of 7

1. IDENTIFICATION:

PRODUCT NAME: ESNALUBE 382
PRODUCT CODE: PEN382
PRODUCT USE : Low Friction Coating

HMIS CODES H F R P
1 0 0 B

Manufacturer:

EVERLUBE PRODUCTS
100 COOPER CIRCLE
PEACHTREE CITY, GA 30269

EMERGENCY PHONE (24 hours): CHEMTREC - 800-424-9300
INFORMATION PHONE (8:00 a.m - 5:00 p.m EST): (770) 261-4800
NAME OF PREPARER: CHEMICAL COMMUNICATIONS COORDINATOR
DATE PREPARED: 2/18/2021

2. HAZARDS IDENTIFICATION



CLASSIFICATION:

Serious Eye Irritation - Category 2
Reproductive Toxicity - Category 2
Skin Corrosion/Irritation - Category 2

SIGNAL WORD:

DANGER

HAZARDS STATEMENTS:

H315-Causes skin irritation
H319-Causes serious eye irritation
H361-Suspected of damaging fertility or the unborn child.

PRECAUTIONARY STATEMENTS:

P281-Use personal protective equipment as required.
P404-Store in closed container
P501-Dispose of contents/container in accordance with local/regional/national/regulation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	% BY WT.
DISTILLED WATER	7732-18-5	55 - 60%
NO EXPOSURE LIMITS ESTABLISHED		
SODIUM SILICATE	1344-09-8	5% - 10%
LD50 ORAL 3400 mg/kg bw Rat		
LC50 INHALATION >2.06 g/m3 Rat		
LD50 DERNAK >5000 mg/kg bw		
LC50 FISH 1108 mg/l 96 hr		
EC50 DAPHNIA 1700 mg/l 48 hr		
SODIUM METABORATE	7775-19-1	0% - 5%

SAFETY DATA SHEET

OSHA/PEL (TOTAL DUST): 15 mg/m³
OSHA/PEL (RESPIRABLE DUST): 5 mg/m³
CAL OSHA/PEL 5 mg/m³
ACGIH/TLV: 2 mg/m³ (TWA)
ACGIH/TLV: 6 mg/m³ (STEL)
LD50 INGESTION: >2400 mg/kg (RATS)
LD50 SKIN: >2000 mg/kg (RATS)
LC50 Invertebrate 133 mg B/L 48 hr
LC50 Fish 74 mg B/L 96 hr
EC10 Algae 24 mg B/L 96 hr
LC50 Fresh Water 46mg B/L 7-day

4. First Aid Measures

Eyes:

With eyelids open, immediately flush eyes with lots of lukewarm water for at least 30 minutes. Get immediate medical assistance.

Skin:

Wash the skin thoroughly with plenty of water for at least 15 minutes, using a mild and non-abrasive soap. Cold water may be used.

Ingestion:

Never give anything by mouth if the victim is semi-conscious, unconscious, or convulsing.

Inhalation:

No adverse effects anticipated

5. Fire Fighting Measures

Flammable Properties:

Flash Point (Degree F): >200 F

Flash Point Method: None known

Explosive Limits:

Upper explosive limit: None known

Lower explosive limit: None known

Hazardous Combustion Products:

Sulfur, Silicon, and their compounds

Extinguishing Media:

Not Applicable

Firefighting Procedures:

Not Applicable

6. Accidental Release Measures

Small Spill:

Absorb spillage to prevent material damage

Large Spill:

Remove by mechanical means and place in containers.

Environmental Precautions:

US regulations require reporting spills of this material that could reach any surface waters. In Canada, report to the applicable provincial environment ministry.

7. Handling and Storage

Handling:

Wash skin thoroughly (with soap and water) after handling.

Storage:

Store in closed container

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

Mixture, see section 3

Engineering Controls:

Prevent the product or the wash waters from entering the water system or sewers.

Personal Protective Equipment:



Respiratory Protection:

None required under normal operating conditions

Skin Protection:

Wear protective gloves (eg Neoprene or Nitrile) for skin protection.

Eye Protection:

Wear eye protection/face protection. Contact lenses should not be worn without goggles.

9. Physical and Chemical Properties

Flammability (solid, gas)....: Data not available
Boiling Point: 212 F
Melting Point: Data not available
VOC.....: 0% grams/liter
Freezing Point: None known
Flash Point: >200 F
Vapor Pressure: Data not available
Vapor Density: Lighter than air.
Solubility in Water: None known
Density.....: 11.8 lb/gl
Evaporation Rate: Slower than n-Butyl Acetate.
Explosive Limits:
 Upper Explosive Limit: None known
 Lower Explosive Limit: None known
Specific Gravity: 1.41712
PH: None known
Volatile (% by Weight).....: 60%
Appearance and Odor: Black liquid, no odor
Odor Threshold: Not applicable
Viscosity: Not applicable
Partition Coefficient:.....: Data not available
Decomposition Temperature ...: Data not available
Autoignition temperature.....: Data not available

SAFETY DATA SHEET

10. Stability and Reactivity

Chemical Stability (Conditions to Avoid):

Stable under normal conditions.

Incompatibility:

Oxidizers, Strong Acids or Alkalies.

Hazardous Decomposition Products:

Irritating and/or toxic fumes including the following may be released:
Sulfur, Silicon, and their compounds

Hazardous Polymerization:

Will not occur.

11. Toxicological Information

Acute Toxicity Values:

Mixture, see section 3 - Hazardous Ingredients

Germ Cell Mutagenicity:

None known

Chronic/Carcinogenicity:

IARC (International Agency for Research of Cancer):
Group 3-Not classified as a cancer causing agent in humans

NTP (National Toxicology Program):

None known

Reproductive Toxicity:

Product contains chemical(s) suspected of damaging
fertility/unborn child

STOT-single exposure:

None known

STOT-repeated exposure:

None known

Aspiration Hazard:

None known

Routes of Exposure:

Skin contact, skin absorption, eye contact, inhalation

12. Ecological Information

Environmental Fate:

Do not allow product to enter storm or sanitary sewers, lakes, rivers, streams, or public waterways. Canadian and U.S. regulations require that environmental and/or other agencies be notified of a spill incident. The spill area must be cleaned and restored to the original condition or to the satisfaction of authorities.

Environmental Toxicity:

Data not available

Persistence and Degradability:

Data not available

Bioaccumulative Potential:

Data not available

Mobility in Soil

Data not available

Other Adverse Effects:

None known

13. Disposal Considerations

Disposal Methods:

Dispose of waste in a chemical landfill as approved by current local, state, and federal laws and regulations.

14. Transport Information

Domestic (Land, DOT), International (Water, IMO/IMDG), International (Air, ICAO) Road and Rail (ADR/RID), Air (ICAO/IATA), Vessel (IMO/IMDG):

UN Number:

Not regulated

UN Shipping Name:

Not Regulated

Transport Hazard Class:

Not Classified

Packing Group:

Not regulated

ENVIRONMENTAL HAZARDS:

Marine Pollutant:

None known

Special Precautions for User:

None known

15. Regulatory Information

U.S. Federal Regulations:

TSCA:

ALL COMPONENTS OF THIS PRODUCT ARE ON THE TSCA INVENTORY OR ARE EXTINGUISHED FROM REQUIREMENTS

CERCLA: SARA Hazard Category:

Section 313:

IF THIS MATERIAL HAS ANY COMPONENTS THAT ARE REPORTABLE UNDER SARA 313 THEY ARE SHOWN IN THE FOLLOWING LISTING. IF THE LISTING IS BLANK, THERE ARE NO REPORTABLE COMPONENTS.

COMPONENT	CAS #	% BY WT.
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SAFETY DATA SHEET

FRANK DODD SECTION 1502:

ALL COMPONENTS OF THIS PRODUCT COMPLY WITH TITLE 15 OF THE US CONSUMER FINANCIAL PROTECTION ACT, DODD-FRANK ACT SECTION 1502 (CONFLICT MINERALS ACT).

State Regulations:

California Prop 65:

None known

International Regulations:

WHMIS Classification:

Not Classified

CEPA (Canadian Environmental Protection Act)

ALL INGREDIENTS ARE CEPA APPROVED FOR IMPORT TO CANADA. THIS PRODUCT HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CONTROLLED PRODUCTS REGULATION (CPR) AND THE MSDS CONTAINS ALL THE INFORMATION REQUIRED BY THE CPR.

EINECS (European Inventory of Existing Chemical List)

ALL COMPONENTS OF THIS PRODUCT ARE INCLUDED ON THE EUROPEAN INVENTORY OF EXISTING CHEMICALS LIST

16. Other Information

DATE OF PREPARATION: 2/18/2021

KEY/LEGEND

ACGIH: American Conference of Governmental Industrial Hygienists
 ADR: International Carriage of Dangerous Goods by Road
 RID: International Carriage of Dangerous Goods by Rail
 CAS: Chemical Abstracts Service
 CERCLA: Comprehensive Environmental Response, Compensation, & Liability Act
 DOT: Department of Transportation
 HMIS: Hazardous Materials Identification System
 IATA: International Air Transport Association
 ICAO: International Civil Aviation Organization
 IDL: Immediately Dangerous to Life
 IMDG: International Maritime Dangerous Goods
 IMO: International Maritime Organization
 LC: Lethal Concentration
 LD: Lethal Dose
 NIOSH: National Institute for Occupational Safety & Health
 OSHA: Occupational Safety & Health Administration
 PPM: Parts Per Million
 REL: Recommended Exposure Limit
 SARA: Superfund Amendments and Reauthorization Act
 STEL: Short-term Exposure Limits
 STOT: Specific Target Organ Toxicity
 TLV: Threshold Limit Value
 TSCA: Toxic Substances Control Act
 TWA: Time Weighted Average
 VOC: Volatile Organic Compounds
 WHMIS: Workplace Hazardous Materials Information System

Manufacturer Disclaimer:

TO THE BEST OF OUR KNOWLEDGE, THE INFORMATION AND RECOMMENDATION

SAFETY DATA SHEET

CONTAINED HEREIN IS BELIEVED TO BE ACCURATE AT THE TIME OF PREPARATION OR OBTAINED FROM SOURCES BELIEVED TO BE RELIABLE. HOWEVER, IT IS THE USERS RESPONSIBILITY TO DETERMINE SAFETY, TOXICITY, AND SUITABILITY FOR HIS OWN USE OF THE PRODUCT. EVERLUBE PRODUCTS ASSUMES NO RESPONSIBILITY. THE CUSTOMER OR RECIPIENT OF THIS SDS SHOULD ENSURE THAT THE INFORMATION CONTAINED IN THIS SDS IS MADE AVAILABLE TO ALL EMPLOYEES OR OTHER PERSONS WHOM HE KNOWS OR BELIEVES WILL USE THIS MATERIAL

www.everlubeproducts.com

**Flexbar Machine Corporation
Safety Data Sheet**

533894

1. Identification

Product Name FLEXBAR Reprorubber® Putty	SDS Code Number 533894
Trade Name & Synonyms FLEXBAR Reprorubber® Putty	Date of Last Revision 09/27/23
Chemical Name Vinyl Polysiloxane	Manufacturer Flexbar Machine Corporation
C.A.S. Number Not Applicable	Address 250 Gibbs Road Islandia NY 11749-2697 http://www.flexbar.com
Grades or Minor Variant Identities Not Applicable	Information Telephone Number (631) 582-8440
Product Use (for Canada) Not Applicable	Emergency Telephone Number (800) 879-7575

2. Hazard(s) Identification



**WARNING
MAY CAUSE AN ALLERGIC SKIN REACTION
(GHS07)**

**WASH HANDS THOROUGHLY AFTER HANDLING
WEAR PROTECTIVE GLOVES
IF ON SKIN: WASH WITH PLENTY OF SOAP AND WATER.
IF SKIN IRRITATION OCCURS: GET MEDICAL ADVICE / ATTENTION
TAKE OFF CONTAMINATED CLOTHING AND WASH BEFORE REUSE**

3. Composition/Information on Ingredients - Base Paste

Hazardous Components	C.A.S. Number	Exposure Limits	%
Silicon Dioxide - Amorphous	68855-54-9	1.2 mg/M ³	20 - 25
Silicon Dioxide -Crystalline	14464-46-1	0.05 mg/M ³	12 - 18
Non - Hazardous Components			
Vinyl dimethyl polydimethylsiloxane	68083-19-2	N. E.	50 - 60
Organic Phthalate Plasticizer	68515-40-2	N. E.	< than 5
Polymethylhydrogen siloxane	68037-59-2	N. E.	2 - 6
Blue Fluorescent organic dye	39277-28-6	N. E.	< than 5
F D & C Blue # 1	3844-45-9	N. E.	< than 1

3. Composition/Information on Ingredients - Catalyst Paste

Hazardous Components	C.A.S. Number	Exposure Limits	%
Silicon Dioxide - Amorphous	68855-54-9	1.2 mg/M ³	20 - 25
Silicon Dioxide -Crystalline	14464-46-1	0.05 mg/M ³	12 - 18
Non - Hazardous Components			
Vinyl dimethyl polydimethylsiloxane	68083-19-2	N. E.	50 - 60
Organic Phthalate Plasticizer	68515-40-2	N. E.	< than 5
Organo Platinum complex	68478-92-2	N. E.	< than 1

4. First Aid Measures

Routes of Exposure	First Aid Instructions	Immediate Medical Attention	Delayed Effects
Eye	Rinse opened eye for several minutes under running water. If symptoms persist consult physician	Not Applicable	Not Applicable
Skin	Immediately wash with soap and water and rinse thoroughly	Not Applicable	Not Applicable

Inhalation	Supply fresh air, consult physician if symptoms persist	Not Applicable	Not Applicable
Ingestion	If symptoms persist consult physician	Not Applicable	Low order of toxicity is expected when large amounts of material are ingested. Acute toxicology study in rats LD ₅₀ >2,000mg/kg.
Other	Not Applicable	Not Applicable	Not Applicable

Note to Physicians (Treating, Testing and Monitoring): Treat symptomatically.

5. Fire Fighting Measures

Flame Propagation or Burning Rate (for Solids): Not Applicable	Properties Contributing to Fire Intensity: Not Applicable	Flammability Classification: Not Applicable	Other: Not Applicable
Extinguishing Media: CO ₂ , extinguishing powder, foam carbon dioxide or water spray. Fight larger fires with water spray or alcohol resistant foam.		Extinguishing Media to Avoid: Water with full jet.	
Protection and Procedures for Firefighters: Firefighters should wear self-contained respiratory protective devices.			
Unusual Fire and Explosion Hazards: No dangerous decomposition products known. - Product does not present an explosion hazard.			

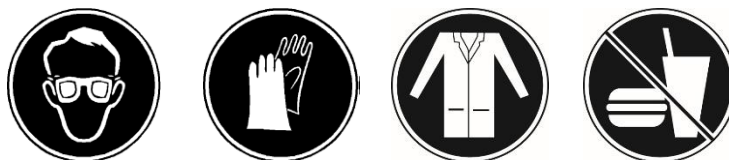
6. Accidental Release Measures

Containment Techniques: Material is a high viscosity paste and as such will not flow.		
Spill/Leak Clean-up Procedures and Equipment: Wear protective clothing and scoop up bulk material and place in a labeled plastic or metal container. Avoid gross skin contact to minimize the possibility of contact dermatitis to susceptible persons. Ensure adequate ventilation.		
Evacuation Procedures: Not Applicable	Special Instructions: Not Applicable	Reporting Requirements: Not Applicable

7. Handling and Storage

Handling Practices and Warnings: Observe normal care for working with chemicals.
Storage Practices and Warnings: Store only in the original package. Keep package tightly sealed. Store in a dry area. Protect from exposure to direct light. Store away from food and beverages.

8. Exposure Control / Personal Protection



Individual Protection Measures	Personal Protective Equipment for Normal Use	Personal Protective Equipment for Emergencies
Eye/Face	Safety Glasses	Not Applicable
Skin	The glove material has to be impermeable and resistant to the product.	Not Applicable
Inhalation	Not Required	Not Applicable
Body Protection	Protective work clothing	Not Applicable
Occupational Exposure Limits: Not Applicable		Engineering Controls: Not Applicable

9. Physical and Chemical Characteristics

Appearance: Blue colored high viscosity paste. Catalyst is grey-colored.	Odor: Faint sweet odor.
Normal Physical State: Material is very high viscosity liquid (Paste).	Melting Point: Not Applicable
Specific Gravity: 1.3 g/cm ³	Solubility in Water: Not soluble
pH: Not Applicable	
Vapor Pressure (mm Hg): Not Applicable	Vapor Density (AIR=1): Not Applicable
Evaporation Rate (Butyl Acetate =1): N A	
Flashpoint Method: Not Applicable	Flammable (Explosive) Limits in Air
LEL: Not Applicable UEL: Not Applicable	Autoignition Temperature: Not Applicable, Product will not autoignite.
Other: Not Applicable	

10. Stability and Reactivity Data

Incompatibility (Materials to Avoid): Strong oxidizing materials.	
Hazardous Products Produced During Decomposition: No dangerous decomposition products known if used according to Directions for Use.	
Hazardous Polymerization: <input type="checkbox"/> May Occur <input checked="" type="checkbox"/> May Not Occur	Conditions to Avoid: None known
Stability? <input checked="" type="checkbox"/> Stable <input type="checkbox"/> Unstable	Conditions to Avoid: None known

11. Toxicological Information

Toxicity Data, Epidemiology Studies, Carcinogenicity, Neurological Effects, Genetic Effects, Reproductive Effects, or Structure Activity Data: Product may irritate the skin and mucous membranes. The unpolymerized product may cause irritation to the skin in susceptible persons. On the eye the product has an irritating effect. Sensitization: No sensitizing effects known.					
Emergency Overview: Material may be mildly irritating to eyes.					
Routes of Exposure	Signs and Symptoms	Single, Repeated, or Lifetime Exposure	Severity (Mild, Moderate, Severe)	Acute and Chronic Health Effect(s)	Target Organ(s)
Eye	Material can cause irritation.	Single	Moderate	Irritation and possible corneal damage	Not Applicable
Skin	Material may be an irritant	Single & Repeated	Moderate	Irritation or possible allergic response.	Not Applicable
Inhalation	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Ingestion	Material is probably not harmful if swallowed	Not Applicable	Mild	Low order of toxicity is expected when large amounts of material are ingested.	Not Applicable

				Acute toxicology study in rats LD ₅₀ >2,000mg/kg.	
Other	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Medical Conditions Aggravated by Exposure Open sores and wounds of the skin.					
Carcinogenicity NTP?: Not listed IARC monographs?: Not listed OSHA regulated?: No 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.					
Potential Environmental Effects Do not allow to enter sewers/ surface or ground water.					
NFPA Hazard Classification Ratings (Scale 0-4), Health = 0, Fire = 1, Reactivity = 0					

12. Ecological Information

Toxicity Data, Environmental Fate, Physical/Chemical Data, or other Data Supporting Environmental Hazard Statements: Water Hazard class1 (Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water streams or sewage system.

13. Disposal Considerations

Regulations: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Dispose of material as solid waste in a closed container. Dispose of in accordance with Federal, State and Local regulations
Properties (Physical/Chemical) Affecting Disposal: Dispose of material as solid waste in a closed container.

14. Transport Information

Regulated for Shipping: No. Not Regulated	DOT Shipping Name: Not Regulated	Packing Group: Not Applicable
Do Changes in Quantities, packaging, or shipment method change product classification? No	DOT Hazard Class: Not Applicable	UN Number: Not Applicable

15. Regulatory Information

This product has been classified in accordance with the hazard criteria of the Globally Harmonized System of Classification and Labeling of Chemicals and the SDS contains all of the information required by the Canadian Controlled Products Regulations.
U.S. Federal Regulations: <u>CERCLA 103 Reportable Quantity</u> : This product is not subject to CERCLA reporting requirements. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations
<u>Section 313 Toxic Chemicals</u> : This product contains the following chemicals subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372): None
<u>Section 302 Extremely Hazardous Substances (TPQ)</u> : None
<u>EPA Toxic Substances Control Act (TSCA) Status</u> : All of the components of this product are listed on the TSCA inventory.
<u>U.S. State Regulations California Proposition 65</u> : This product does not contain any chemicals, which are on the California Proposition 65 list.
<u>International Regulations: Canadian Environmental Protection Act</u> : This product is a medical device and not subject to chemical notification requirements.
<u>European Community Labeling</u> : Not a dangerous preparation.
<u>European Inventory of New and Existing Chemicals Substances (EINECS)</u> : This product is a medical device and not subject to chemical notification requirements.
Other: Not Applicable

16. Other Information

To the best of our knowledge this product does not contain gluten, wheat grains, flaxseed, natural rubber, or natural latex. All components are synthetically produced; none are derived from animal products.
The information contained herein is accurate to the best of our knowledge.
Flexbar Machine Corporation makes no warranty of any kind, express or implied, concerning the safe use of this material.

Creation date 06-Jul-2017

Revision date 06-Jul-2017

Version 1

1. Identification of the Substance/Preparation and of the Company/Undertaking

- (a) Product name Glass cloth adhesive tape
Product identifier P-212
- (b) Other means of identification
Product Code P627-00012
- (c) Recommended Use Insulation for wire and/or cables
- (d) Supplier Address Nitto, Inc.
 1990 Rutgers University Blvd. Lakewood, NJ08701, U.S.A.
 TEL.+1-732-901-7905 FAX.+1-732-901-9354
- (e) Emergency telephone number +1-732-901-7905 (Nitto, Inc.)

2. Hazards Identification

- (a) GHS - Classification Not applicable for article
- (b) Label elements Not Applicable
Physical state Solid
Odor Slight
Precautionary statements
- (c) Other Hazards Not Applicable

3. Composition/information on Ingredients

Product Classification ARTICLE

<u>Chemical name</u>	<u>CAS No</u>	<u>Concentration or concentration ranges</u>
Silicone adhesive	-	50-60
Fiber glass	65997-17-3	40-50

The exact percentage (concentration) of composition has been withheld as a trade secret

4. First aid measures

- (a) General information
- If inhaled Not expected
- Eye contact Immediately flush with large amounts of water for at least 15 minutes. Examination and treatment by a physician if necessary
- Skin contact Wash off immediately with soap and plenty of water
 In the case of skin irritation or allergic reactions see a physician
- Ingestion Immediately induce vomiting and then consult a doctor
- (b) Most important symptoms/effects, acute and delayed No information available
- (c) Self-protection of the first aider Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves
- Note to physicians No information available

5. Fire-fighting measures

- (a) Fire extinguishing agent Dry chemical, CO2, water spray or regular foam
- Prohibited media No information available

(b) <u>Special exposure hazards in a fire</u>	No information available
<u>Hazardous combustion products</u>	No information available
<u>Explosion data</u>	No information available
<u>Sensitivity to Mechanical Impact</u>	No information available
<u>Sensitivity to Static Discharge</u>	No information available
(c) <u>Special protective equipment and precautions for firefighters</u>	In the event of fire, wear self-contained breathing apparatus Use personal protective equipment as required

6. Accidental release measures

(a) <u>Personal Precautions</u>	Use personal protective equipment as required
<u>Protective equipment and emergency procedures</u>	Protective gloves and safety glasses recommended
(b) <u>Environmental precautions</u>	Prevent product from entering drains Keep out of waterways Dike to collect large liquid spills
(c) <u>Methods and material for containment and cleaning up</u>	Should not be released into the environment

7. Handling and Storage

(a) <u>Precautions for safe handling</u>	Protective gloves and safety glasses recommended
(b) <u>Storage conditions</u>	Store at room temperature and normal humidity away from direct sunlight

8. Exposure Controls/Personal Protection

(a) <u>Control parameters</u>	None under normal use conditions
<u>Other information</u>	No information available
(b) <u>Appropriate engineering controls</u>	No information available
(c) <u>Personal protective equipment [PPE]</u>	
<u>Respiratory Protection</u>	None under normal use conditions; should fibers be generated, wear respiratory protection
<u>Hand protection</u>	Wear non-permeable gloves
<u>Skin protection</u>	Wear protective gloves and protective clothing; clothing; individuals sensitive to fiberglass, seek medical attention considering barrier cream as an option when handling, if not possible to wear gloves.

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

(a) <u>Physical state</u>	Solid
(b) <u>Color</u>	white
(c) <u>Odor</u>	Slight
(d) <u>pH</u>	No data available
(e) <u>Melting point / Freezing point</u>	No information available
(f) <u>Boiling point / boiling range</u>	Not Applicable
<u>boiling point</u>	Not Applicable
(g) <u>Flash Point</u>	No data available
(h) <u>Evaporation rate</u>	No data available
(i) <u>Flammability (solid, gas)</u>	Non-flammable solid
(j) <u>Upper/lower flammability or explosive limits</u>	
<u>Upper</u>	Not Applicable
<u>Lower</u>	Not Applicable
(k) <u>vapor pressure</u>	Not Applicable
(l) <u>Vapor density</u>	Not Applicable
(m) <u>Specific gravity</u>	No data available
(n) <u>Solubility</u>	Insoluble in water
(o) <u>Partition Coefficient</u>	No data available
<u>(n-octanol/water)</u>	
(p) <u>Autoignition temperature</u>	No data available
(q) <u>decomposition temperature</u>	No data available

<u>(r) Kinematic viscosity</u>	No data available
<u>(s) molecular weight</u>	No data available

10. Stability and Reactivity

<u>(a) Reactivity</u>	Stable under normal conditions
<u>(b) Chemical stability</u>	Stable under normal conditions
<u>(c) Possibility of hazardous reactions</u>	No data available
<u>(d) Conditions to avoid</u>	No information available
<u>(e) Incompatible materials</u>	No information available
<u>(f) Hazardous decomposition products</u>	No information available

11. Toxicological Information

<u>(a) Information on likely routes of exposure</u>	
<u>Inhalation</u>	Not expected, however, should glass cloth become fibrous (ie. due to grinding), wear respiratory protection
<u>Ingestion</u>	Not Applicable
<u>Skin contact</u>	No information available
<u>Eye contact</u>	No information available
<u>(b) Most important symptoms/effects, acute and delayed</u>	No information available
<u>(c) Delayed and immediate effects and also chronic effects from short- and long-term exposure</u>	
<u>Acute Toxicity</u>	No information available
<u>Skin corrosion/irritation</u>	No information available
<u>Serious eye damage/eye irritation</u>	No information available
<u>Respiratory sensitization</u>	No information available
<u>Germ cell mutagenicity</u>	No data available on finished product
<u>Reproductive Toxicity</u>	No data available on finished product
<u>Specification target internal organs/systemic toxicity (single exposure)</u>	No data available on finished product
<u>Specification target internal organs/systemic toxicity (repeat exposure)</u>	No data available on finished product
<u>Aspiration hazard</u>	Not Applicable
<u>(d) Unknown Acute Toxicity</u>	Not Applicable
<u>(e) Carcinogenicity</u>	No data available on finished product

12. Ecological Information

<u>(a) Ecotoxicity</u>	No data available on finished product
<u>(b) Mobility in soil</u>	No data available on finished product
<u>(c) Persistence and degradability</u>	No data available on finished product
<u>(d) Bioaccumulation</u>	No data available on finished product
<u>(e) Other adverse effects</u>	
<u>Ozone depletion potential (ODP)</u>	Stable under normal conditions

13. Disposal Considerations

Waste treatment methods

Disposal of wastes

Dispose of in accordance with federal, state and local regulations. The Customer is responsible for the proper disposal of any waste generated as a result of the use of the Product or of the Product itself, and is responsible for complying with all applicable laws, rules and regulations relating to the management, storage, treatment, shipment and disposal of such waste or Product ("Waste Management Practices"). "Product" includes anything sold by Nitto Denko Corporation and/or any affiliates or subsidiaries ("Company") to Customer. The Company is not responsible for any of the Customer's Waste Management Practices. As part of those practices, Customer must separate packaging from Product before disposal. Further, Customer should review and comply with this SDS prior to any such disposal.

Customer shall hold harmless the Company, its agents, contractors, successors and assigns from any and all liability, claims, loss, damage, death or injury, including reasonable attorney's fees and costs, arising out of or relating to Customer's Waste Management Practices

Contaminated packaging

Dispose of in accordance with federal, state and local regulations

Disposal considerations

Should not be released into the environment

14. Transport Information

<u>DOT(U.S. Department of Transportation)</u>	Not regulated
<u>(HMTA)</u>	
<u>UN number</u>	Not Applicable
<u>UN Proper Shipping Name</u>	Not regulated
<u>Transport hazard class</u>	Not Applicable
<u>Packing group, if applicable</u>	Not Applicable
<u>Environmental hazards</u>	Not Applicable
<u>(Applicable/Not applicable)</u>	
<u>Transport in bulk according to</u>	Not Applicable
<u>Annex II of MARPOL 73/78 and the</u>	
<u>IBC Code</u>	
<u>Special precautions in connection</u>	Store in a cool area away from heat
<u>with transport or conveyance</u>	
<u>TDG</u>	Not regulated
<u>MEX(Transport is specifically for Mexico)</u>	Not regulated
<u>ICAO (air)</u>	Not regulated
<u>IATA</u>	Not regulated
<u>IMDG</u>	Not regulated
<u>UN number</u>	Not Applicable
<u>UN Proper Shipping Name</u>	Not regulated
<u>Transport hazard class</u>	Not Applicable
<u>Special precautions in connection</u>	Store in a cool area away from heat
<u>with transport or conveyance</u>	
<u>RID (Regulations concerning the</u>	Not regulated
<u>International Carriage of Dangerous</u>	
<u>Goods by Rail)</u>	
<u>ADR (European Agreement concerning</u>	Not regulated
<u>International Carriage of Dangerous</u>	
<u>Goods by Road)</u>	
<u>ADN Technical Name</u>	Not regulated

15. Regulatory information

US Federal Regulations
SARA 313 Not Applicable

US State Regulations Not Applicable
California Proposition 65

* This product will not contain compounds in particulate (respirable) form under normal conditions.

U.S. State Right-to-Know Regulations Not Applicable

Global Inventories Not Applicable

REACH 7 Article 33 Article SVHC notification (> 0.1 wt. %)

None based on the current SVHC listing, as of the date of this SDS.

16. Other information

<u>NFPA</u>	Health Hazards 0	Flammability 0	Instability: 0	Physical and Chemical Properties -
<u>HMIS</u>	Health Hazards 0	Flammability 0	Physical Hazards 0	Personal protective equipment X

Creation date

06-Jul-2017

Revision date

06-Jul-2017

Version

1

Source Information

Raw material SDS

LOLI(Chem ADVISOR) GHS classification data

Disclaimer

Although the information in this document has been researched in good faith based on data available, Nitto, Inc., makes no warranty, expressed or implied regarding the accuracy or completeness of the information contained herein and the results to be obtained from the application of this information. Each user of this material should review this information and determine applicability based on their specific application(s). 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(S). In accordance with OSHA, this product is considered an article. 29 CFR 1910.1200 (b)(6)(v) exempts articles from the Hazard Communication requirements and therefore does not require that a Safety Data Sheet be provided for this product, however it is offered at the request of our customers

End of Safety Data Sheet

Invoice data

Organization unit	Patria Aviation Oy
Invoice type	PO Invoice
AP Comment	
Supplier code	4566
Supplier name	Insinööritoimisto Comatec Oy
Supplier VAT code	003709469366
business ID	0946936-6
Supplier bank name	Nordea Rahoitus Suomi Oy
Supplier bank BIC	NDEAFIHH
Supplier bank IBAN	FI3515593000001070
Supplier bank BBAN	
Invoice number	170006225
Invoice date	6/30/2024
EPR-Date	9/1/2024
EPR	True
Reference person	
Currency code	EUR
Exchange rate base date	6/30/2024
Currency code (company)	EUR
Base date	6/30/2024
Payment term code	73
Payment term name	60 päivää netto
Due date	8/29/2024
Reference number	6041001700062258
Reference Text	
Gross total	1,157.48
Exchange rate (company)	1.00000000
Gross total (company)	1,157.48
Tax sum	224.03
Net total	933.45
Net total (company)	933.45
Cash sum	0.00
Cash percent	0.00
Cash date	7/1/2024
Year Contract	
Plan reference	
Purchase order numbers	PO241200645
Voucher date	6/30/2024
PaymentPlan Name	
PaymentBlock	False
PaymentBlock Comment	
PaymentPlan Description	
Posting Date	
VYR	
Delivery Term	

Invoice Origin	Verkkolasku
Origin	E-invoices
Supplier Country Code	FI
Internal (Skip approval)	
Scan Date	
Scan Service Id	170006225
Scan Report Code	
Scan Report Comment	
Creation time	7/3/2024
ID	dcf7fee6beec4a3aa16e0ce81c2c55a3
TransferCheck	false
TransferCheck (List view screen)	
TransferCheck Control field	003732210125
Delivery notes	
Supplier ID	6f938dea7e5e41f2a833ab20007df221
Prebooked	Not prebooked
DueDate Difference to Invoice DueDate	
Transfer Check Control	True
Payment method	
PaymentPlan Invoice	
Supplier Additional data (hidden)	6f938dea7e5e41f2a833ab20007df221
Tax sum 2	0.00
Payment date	
Invoice type code	PO

Coding rows

Account Code	Account Name	Work Order Code	Work Order Name	Cost Center Code	Cost Center Name	Project Reference	Description	Net Total	Net Total (Company)	Gross Total	Gross Total (Company)	Tax Code	Tax Sum	Tax Percent	%	Dimensio 1	Dimensio 1 name	Dimensio 2	Dimensio 2 Name	Dimensio 3	Dimensio 3 Name	Order Number	Ordered Quantity	UOM	Product Code	Goods Receipt Number	Accrual Date	Accrual End Date	Matched Quantity	Info	Freight Slip
--------------	--------------	-----------------	-----------------	------------------	------------------	-------------------	-------------	-----------	---------------------	-------------	-----------------------	----------	---------	-------------	---	------------	-----------------	------------	-----------------	------------	-----------------	--------------	------------------	-----	--------------	----------------------	--------------	------------------	------------------	------	--------------

History

Time	User name	Action	Comment
7/4/2024 9:08:27 PM	System	Waiting for missing goods receipts	
7/4/2024 9:08:26 PM	System	Matching categories selected	12 AVI P2P tilaukset Otsikkotaso
7/4/2024 9:08:26 PM	System	Purchase order candidate selected for the invoice	PO241200645
7/4/2024 9:08:26 PM	System	Matching configuration found	Invoice Automation Default Configuration
7/4/2024 9:05:26 PM	System	Invoice contained line details but the system has been configured to bypass them. Automatic order matching will continue in a few minutes without invoice line details.	
7/4/2024 9:05:26 PM	System	Matching categories selected	12 AVI P2P tilaukset Otsikkotaso
7/4/2024 9:05:26 PM	System	Purchase order candidate selected for the invoice	PO241200645
7/4/2024 9:05:26 PM	System	Matching configuration found	Invoice Automation Default Configuration
7/3/2024 9:05:25 PM	System	Waiting for missing goods receipts	
7/3/2024 9:05:24 PM	System	Matching categories selected	12 AVI P2P tilaukset Otsikkotaso
7/3/2024 9:05:24 PM	System	Purchase order candidate selected for the invoice	PO241200645
7/3/2024 9:05:24 PM	System	Matching configuration found	Invoice Automation Default Configuration
7/3/2024 9:02:24 PM	System	Invoice contained line details but the system has been configured to bypass them. Automatic order matching will continue in a few minutes without invoice line details.	
7/3/2024 9:02:24 PM	System	Matching categories selected	12 AVI P2P tilaukset Otsikkotaso
7/3/2024 9:02:24 PM	System	Purchase order candidate selected for the invoice	PO241200645
7/3/2024 9:02:24 PM	System	Matching configuration found	Invoice Automation Default Configuration
7/3/2024 9:02:23 PM	System	Order matching task created	
7/3/2024 9:02:23 PM	System	Validation succeeded	
7/3/2024 9:02:22 PM	System	Validation started	
7/3/2024 9:02:22 PM	System	Validate task created	
7/3/2024 9:02:22 PM	System	anyERP processing completed	
7/3/2024 9:02:21 PM	System	Invoice saved	Supplier EPR value updated / Toimittajan EPR päivitetty.
7/3/2024 9:02:20 PM	System	anyERP processing started	
7/3/2024 9:02:20 PM	System	Invoice waiting for anyERP processing	
7/3/2024 9:02:20 PM	System	anyERP task task created	
7/3/2024 9:02:19 PM	System	Initial task created	
7/3/2024 9:02:19 PM	System	Invoice sent to validation	
7/3/2024 9:02:19 PM	System	Invoice imported	

30.06.2024

Viitteenne Maarit Korhonen
Viitteemme Hakanen, Juha

Laskutusosoite
Patria Aviation Oy
PL 846
00026 Basware
Finland

Laskutusjakso: 14.06.2024 - 28.06.2024

Maksuehto 60 pv netto
Eräpäivä 29.08.2024
Tilausnumero PO241200645
Viivästyskorko% 12,5%
Alv-numero FI08690368
Huomautusaika 8 pv
Maksuviite 6041001700062258
Projekti 1711783/Patria Aviation Oy: LCA, Sonac ASC

Perintätoimien aloittamisesta veloitetaan 10 euron korvaus.

Tämä saatava on siirretty Nordea Rahoitus Suomi Oy:lle ja Nordea Bank Oyj:lle. Lasku on maksettava Nordea Rahoitus Suomi Oy:n tilille Nordea FI351559300001070 NDEAFIHH. Maksettaessa on annettava laskulla oleva viitenumero. Tämä siirto on peruutettavissa vain Nordea Rahoitus Suomi Oy:n suostumuksella. Tähän saatavaan ja sen perusteeseen kohdistuvasta huomautuksista on välittömästi ilmoitettava osoitteella Nordea Rahoitus Suomi Oy, Myyntisaatavien rahoitus, 00020 Nordea, puh +358916589472

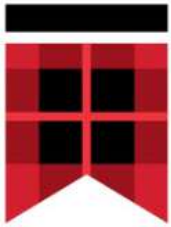
Kuvaus	Pvm	Määrä	A-hinta	Veroton €	Alv %	Yhteensä €
Projektinhallinta <i>Surakka, Aleks</i> Projektinhallinta: Projektin pohjustus, aloitus, yleinen dokumentaatio, käytännöt ym.	14.06.2024	7,50 H	88,90	666,75	24,00	826,77
Projektinhallinta <i>Surakka, Aleks</i>	19.06.2024	1,50 H	88,90	133,35	24,00	165,35
Projektinhallinta <i>Surakka, Aleks</i>	27.06.2024	1,00 H	88,90	88,90	24,00	110,24
Projektinhallinta <i>Surakka, Aleks</i>	28.06.2024	0,50 H	88,90	44,45	24,00	55,12
Yhteensä Projektinhallinta		10,50 H		933,45		
Yhteensä		10,50 H		933,45		

30.06.2024

Viitteenne
Viitteemme

Maarit Korhonen
Hakanen, Juha

Veroton summa EUR	933,45
ALV 24% summa EUR	224,03
Verollinen summa EUR	1 157,48



MacDermid Enthone

Safety Data Sheet

Section 1. Identification

Product name : IRIDITE 14-2
Product code : 178659
Product type : Solid.
Uses advised against : Consumer, private households, general public
Date of issue/Date of revision : March 3 2023.

Manufacturer - Supplier	Telephone no.:	Emergency phone:
MacDermid, Inc. MacDermid Enthone Inc. 245 Freight Street Waterbury, CT 06702	Tel: (203) 575-5700	UNITED STATES AND CANADA: Tel: 202-464-2554
MacDermid de Mexico S.A. de C.V. Norte 59 No. 896 Col. Industrial Vallejo Mexico, D.F. 02300 Mexico	Tel: 52 55 5078 3904	Tel: 01 800 002 1400 Tel: (55) 5559 1588
Anion Química Industrial S.A. Rua Eli Valter Cesar, 110 - Jardim Alvorada, CEP: 06612-130, Jandira, SP Brasil	Tel: + 55 11 4789-8585	Tel: 0800 707 7022 Tel: 0800 172 020
RevestSul Produtos Químicos Ltda. Rua Antônio Rasteiro Filho, 500 Parque Industrial José Garcia Gimenes CEP: 86183-751, Cambé, PR Brasil	Tel.: +55 043 3223 3550	Tel: 0800 707 7022 Tel: 0800 172 020
MacDermid Performance Solutions Canada Inc. 4530 Eastgate Parkway Mississauga, Ontario L4W 3W6 Canada	Tel: (905) 624-1065	UNITED STATES AND CANADA: Tel: 202-464-2554

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 SOLIDS - Category 2
ACUTE TOXICITY (oral) - Category 3
ACUTE TOXICITY (dermal) - Category 3
ACUTE TOXICITY (inhalation) - Category 1
SKIN CORROSION - Category 1A
SERIOUS EYE DAMAGE - Category 1
RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
GERM CELL MUTAGENICITY - Category 1
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION - Category 2
SPECIFIC TARGET ORGAN TOXICITY - Category 1
AQUATIC HAZARD (ACUTE) - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 1

GHS label elements

Continued on next page

Section 2. Hazards identification

Hazard pictograms :



Signal word :

Danger

Hazard statements :

- May intensify fire; oxidizer.
- Toxic if swallowed or in contact with skin.
- Causes severe skin burns and eye damage.
- May cause an allergic skin reaction.
- Fatal if inhaled.
- May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- May cause genetic defects.
- May cause cancer.
- Suspected of damaging fertility or the unborn child.
- Causes damage to organs. (respiratory tract)
- Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention :

- Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Wear respiratory protection. Keep away from heat. No smoking. Keep away from clothing and other combustible materials. Take any precaution to avoid mixing with combustibles. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe dust. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Response :

- Collect spillage. IF exposed: Call a POISON CENTER or doctor. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. If experiencing respiratory symptoms: Call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse. IF ON SKIN: Call a POISON CENTER or doctor if you feel unwell. Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. 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.

Storage :

Store locked up.

Disposal :

Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements :

Do not taste or swallow. Wash thoroughly after handling.

Hazards not otherwise classified :

Causes digestive tract burns.

Section 3. Composition/information on ingredients

Substance/mixture :

Mixture

Ingredient name	%	CAS number
chromium (VI) trioxide	50-60	1333-82-0
barium nitrate	20-30	10022-31-8
alkali fluorosilicates(Na)	10-20	16893-85-9
ferricyanide	10-20	-

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

Continued on next page

Section 3. Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified 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** : Get medical attention immediately. Call a poison center or physician. Check for and remove any contact lenses. Immediately flush eyes with running water for at least 30 minutes, keeping eyelids open. Chemical burns must be treated promptly by a physician.
- Washing eyes within several seconds of exposure is essential to minimize damage. Follow company first aid procedures for fluoride exposure which may include applying one or two drops of a 0.5% pontocaine hydrochloride solution into the affected eye(s) if a physician is not immediately available. Do not use any skin treatment preparations for burns to the eye(s).
- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that mists 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. 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. In the event of any complaints or symptoms, avoid further exposure.
- Skin contact** : Get medical attention immediately. Call a poison center or physician. 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 15 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Follow company first aid procedures for fluoride exposure which may include soaking the affected area with iced 0.2% water solution of hyamine 1622 or iced 0.13% solution of zepharin. If soaking is not possible, compresses soaked in one of these solutions may be applied, changing them every 2 minutes. For sensitive areas (lips, mouth, etc.) A 2.5% calcium gluconate jelly may be used. Seek immediate medical attention.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. 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. Chemical burns must be treated promptly by a physician. 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.
- Follow company first aid procedures for fluoride exposure which may include having victim drink a 10% calcium gluconate solution with 8 to 10 oz. Of water for dilution of material in stomach.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Fatal if inhaled. Causes damage to organs following a single exposure if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Continued on next page

Section 4. First aid measures

- Skin contact** : Causes severe burns. Toxic in contact with skin. Causes damage to organs following a single exposure in contact with skin. May cause an allergic skin reaction.
- Ingestion** : Toxic if swallowed. Corrosive to the digestive tract. Causes burns. Causes damage to organs following a single exposure if swallowed.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
wheezing and breathing difficulties
asthma
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

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** : CYANIDES: MAY BE FATAL IF ABSORBED THROUGH THE SKIN IF SWALLOWED OR INHALED. IMMEDIATELY CONTACT EMERGENCY RESPONSE PERSONNEL. GET MEDICAL ATTENTION IMMEDIATELY. IN ADDITION TO THE BASIC FIRST AID PROCEDURES OUTLINED BELOW, IT IS HIGHLY RECOMMENDED THAT PROCEDURES BE ESTABLISHED BY YOUR COMPANY'S PHYSICIAN, CONCERNING FIRST AID AND MEDICAL TREATMENT TO BE USED IN CASE OF CYANIDE POISONING. SUCH PROCEDURE MAY INCLUDE THE ADMINISTRATION OF OXYGEN, ACTIVATED CHARCOAL, OR ANTIDOTES SUCH AS AMYL NITRATE, SODIUM THIOSULFATE, SODIUM NITRITE, OR METHYLENE BLUE. MEDICAL MANAGEMENT GUIDELINES FOR CYANIDE COMPOUNDS ARE AVAILABLE FROM THE CENTERS FOR DISEASE CONTROL, AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, AT WWW.ATSDR.CDC.GOV OR BY PHONE AT 1-888-422-8737. Fluoride Compounds: SYMPTOMS MAY BE DELAYED: Clinical signs and symptoms may not appear for up to 24 hours. Concentrations as low as 2% may cause symptoms with prolonged skin contact. When exposure is suspected, immediate medical attention is critical to minimize damage May be fatal if absorbed through the skin, inhaled or ingested. Immediately contact emergency response personnel. Get medical attention immediately. In addition to the basic first aid procedures outlined below, it is highly recommended that emergency procedures be established by your company's physician, to be used in case of fluorine poisoning. This procedures may include the administration by qualified personnel of antidotes such as Aqueous Hyamine, Zephiran Chloride, or Calcium Gluconate Solutions for treating affected skin, as well as use of Pontocaine Hydrochloride Solution for eye application.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that mists 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.

Section 4. First aid measures

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 : Oxidizing material. May intensify fire. This material is very toxic to aquatic life with long lasting effects. 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
nitrogen 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. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. 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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

Small spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Section 6. Accidental release measures

- Large spill** : 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. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. 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 or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. 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 release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from clothing, incompatible materials and combustible materials. Keep away from heat. 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** : Storage temperature: 5 to 40°C (41 to 104°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. Store locked up. Separate from reducing agents and combustible materials. Store away from grease and oil. 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. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

IRIDITE 14-2

chromium (VI) trioxide

OSHA PEL (United States).

TWA: 0.005 mg/m³

OSHA PEL (United States, 6/2016).

TWA: 0.005 mg/m³, (as Cr) 8 hours.

OSHA PEL 1989 (United States, 3/1989).

CEIL: 0.1 mg/m³, (as CrO₃)

OSHA PEL Z2 (United States, 2/2013).

CEIL: 1 mg/10m³

NIOSH REL (United States, 10/2016).

TWA: 0.0002 mg/m³, (as CR) 8 hours.

OSHA PEL Z2 (United States, 6/2002).

CEIL: 1 MG10M3 Form: All forms

NIOSH REL (United States, 6/2001). Notes: REL applies as Cr.

See Appendix A - NIOSH Potential Occupational Carcinogen See Appendix C - Supplemental Exposure Limits

TWA: 0.001 mg/m³ 10 hours. Form: All forms

OSHA PEL 1989 (United States, 3/1989). Notes: See Table Z-2.

Section 8. Exposure controls/personal protection

CEIL: 0.1 mg/m³ Form: All forms

ACGIH TLV (United States, 9/2004). Notes: Substance identified by other sources as a suspected or confirmed human carcinogen. **NOC = not otherwise classified. 1994-1995 Adoption Substances** for which the TLV is higher than the OSHA Permissible Exposure Limit (PEL) and/or the NIOSH Recommended Exposure Limit (REL). See CFR 58(124) :36338-33351, June 30, 1993, for revised OSHA PEL. Identifies substances identified in the BEI documentation for Methemoglobin inducers (for which methemoglobin is the principle toxicity) and organophosphorous cholinesterase inhibitors are part of this notation. Refers to **Appendix A -- Carcinogens.**

TWA: 0.05 mg/m³ 8 hours. Form: Soluble

ACGIH TLV (United States, 3/2017). Notes: measured as Cr

TWA: 0.05 mg/m³, (measured as Cr) 8 hours. Form: Soluble

barium nitrate

ACGIH TLV (United States, 3/2017).

TWA: 0.5 mg/m³, (as Ba) 8 hours.

OSHA PEL 1989 (United States, 3/1989).

TWA: 0.5 mg/m³, (as Ba) 8 hours.

NIOSH REL (United States, 10/2016).

TWA: 0.5 mg/m³, (as Ba) 10 hours.

OSHA PEL (United States, 6/2016).

TWA: 0.5 mg/m³, (as Ba) 8 hours.

alkali fluorosilicates(Na)

ACGIH TLV (United States, 3/2017).

TWA: 2.5 mg/m³, (as F) 8 hours.

OSHA PEL 1989 (United States, 3/1989).

TWA: 2.5 mg/m³, (as F) 8 hours.

OSHA PEL (United States, 6/2016).

TWA: 2.5 mg/m³, (as F) 8 hours.

OSHA PEL Z2 (United States, 2/2013).

TWA: 2.5 mg/m³ 8 hours. Form: Dust

ferricyanide

ACGIH TLV (United States, 3/2017).

TWA: 1 mg/m³, (as Fe) 8 hours.

C: 5 mg/m³

OSHA PEL 1989 (United States, 3/1989). Absorbed through skin.

TWA: 5 mg/m³, (as CN) 8 hours.

TWA: 1 mg/m³, (as Fe) 8 hours. Form: Soluble

NIOSH REL (United States, 10/2016).

TWA: 1 mg/m³, (as Fe) 10 hours.

OSHA PEL (United States, 6/2016). Absorbed through skin.

TWA: 5 mg/m³, (as CN) 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.

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.

Section 8. Exposure controls/personal protection

- 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 and/ or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
- 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 and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

- Physical state** : Solid. [Red / odorless]
- Color** : Red.
- Odor** : Odorless.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point/freezing point** : Not available.
- Boiling point, initial boiling point, and boiling range** : Not available.
- Flash point** : Not applicable.
- Evaporation rate** : Not available.
- Flammability** : Not available.
- Lower and upper explosion limit/flammability limit** : Not applicable.
- Vapor pressure** : Not available.
- Relative vapor density** : Not applicable.
- Relative density** : Not available.
- Solubility** : Not available.
- VOC** : 0 g/l
- Partition coefficient: n-octanol/water** : Not applicable.
- Auto-ignition temperature** : Not applicable.
- Decomposition temperature** : Not available.
- Viscosity** : Not applicable.

Continued on next page

Section 9. Physical and chemical properties and safety characteristics

Flow time (ISO 2431) : Not available.

Particle characteristics

Median particle size : 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** : 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 or intensifying fire
- Incompatibility with various substances** : Reactive or incompatible with the following materials: oxidizing materials, reducing materials, combustible materials, organic materials, metals, acids, alkalis and moisture.
- 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

Product/ingredient name	Result	Species	Dose	Exposure
chromium (VI) trioxide	LC50 Inhalation Vapor	Rat	167 mg/m ³	4 hours
	LD50 Dermal	Rabbit	57 mg/kg	-
	LD50 Oral	Rat	52 mg/kg	-
	LD50 Oral	Rat	80 mg/kg	-
barium nitrate	LD50 Oral	Rat	355 mg/kg	-
alkali fluorosilicates(Na)	LD50 Oral	Rat	125 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
barium nitrate	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
alkali fluorosilicates(Na)	Eyes - Severe irritant	Rabbit	-	100 milligrams	-
	Eyes - Severe irritant	Rabbit	-	0.066666667 minutes 100 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-

Sensitization

Not available.

Mutagenicity

Section 11. Toxicological information

Product/ingredient name	Test	Experiment	Result
chromium (VI) trioxide	-	Experiment: In vitro Subject: Bacteria	Positive
	-	Experiment: In vitro Subject: Mammalian-Human Cell: Somatic	Positive
	-	Experiment: In vivo Subject: Mammalian-Animal	Positive

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
chromium (VI) trioxide	+	1	Known to be a human carcinogen.
barium nitrate	-	2A	-
alkali fluorosilicates(Na)	-	3	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
chromium (VI) trioxide	Category 1	-	respiratory tract

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

- Remarks** : Cyanide is a chemical asphyxiant that blocks the body from using oxygen. Exposure to a small amount of cyanide by inhalation, absorption through skin or ingestion can cause the following symptoms within minutes: rapid breathing, restlessness, dizziness, weakness, headache, nausea and vomiting, rapid heart rate. Exposure to a large amount of cyanide by any route can cause: convulsions, low blood pressure, slow heart rate, lung injury, respiratory failure, loss of consciousness, possible death.
- Eye contact** : Causes serious eye damage.
- Inhalation** : Fatal if inhaled. Causes damage to organs following a single exposure if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Fluoride Compounds: Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract. Symptoms include: burning sensation, coughing, wheezing and breathing difficulties, shortness of breath, headache, nausea or vomiting, pulmonary edema. Severe over-exposure can result in death.
- Skin contact** : Causes severe burns. Toxic in contact with skin. Causes damage to organs following a single exposure in contact with skin. May cause an allergic skin reaction.

Section 11. Toxicological information

Fluoride compounds are highly corrosive and readily penetrates the skin causing destruction of deep tissue layers, including bone. Pain may be delayed for up to 24 hours following exposure to concentrations of 1-50% and is often not reported until tissue damage is extreme. Concentrations greater than 50% cause immediate burning, redness and tissue damage. Without immediate medical attention, tissue destruction may continue for days and result in limb loss or death. The extent of burns depends on the concentration, temperature and duration of contact with the acid. Systemic fluoride toxicity can cause hypocalcemia, hypomagnesemia, hyperkalemia, pulmonary edema, metabolic acidosis, ventricular arrhythmias and possible death.

- Ingestion** : ☒ Toxic if swallowed. Corrosive to the digestive tract. Causes burns. Causes damage to organs following a single exposure if swallowed.
Fluoride Compounds: Symptoms include: necrotic lesions, hemmhoragic gastritis, pancreatitis

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness

- Inhalation** : Adverse symptoms may include the following:
wheezing and breathing difficulties
asthma
reduced fetal weight
increase in fetal deaths
skeletal malformations

- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations

- Ingestion** : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

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 : May cause genetic defects.
Reproductive toxicity : ☒ Suspected of damaging fertility or the unborn child.

Numerical measures of toxicity

Continued on next page

Section 11. Toxicological information

Acute toxicity estimates

Route	ATE value
<input checked="" type="checkbox"/> Oral	74.39 mg/kg
<input type="checkbox"/> Dermal	300 mg/kg
<input type="checkbox"/> Inhalation (vapors)	0.27 mg/l
<input type="checkbox"/> Inhalation (dusts and mists)	0.08 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
chromium (VI) trioxide	Acute EC50 0.76 mg/l	Daphnia	48 hours
	Acute IC50 1.54 mg/l Fresh water	Algae - Dictyosphaerium chlorelloides - Exponential growth phase	72 hours
	Acute LC50 145 µg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 162 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 28 mg/l	Fish	96 hours
	Acute LC50 44 mg/l	Fish	96 hours
alkali fluorosilicates(Na) ferricyanide	Acute LC50 21000 µg/l Fresh water	Fish - Colisa fasciata - Adult	96 hours
	Acute LC50 49000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Acute EC50 127 µg/l Marine water	Algae - Nitzschia closterium - Exponential growth phase	72 hours
	Acute LC50 549000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 0.24 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Chronic NOEC 31 µg/l Marine water	Algae - Nitzschia closterium - Exponential growth phase	72 hours

Persistence and degradability

Conclusion/Summary : Not Determined

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

Continued on next page

Section 13. Disposal considerations

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	UN	IMDG	IATA
UN number	UN3087	UN3087	UN3087	UN3087	UN3087	UN3087
UN proper shipping name	OXIDIZING SOLID, TOXIC, N.O.S. CHROMIC ACID/BARIUM NITRATE	Oxidizing solid, toxic, n.o.s. CHROMIC ACID/BARIUM NITRATE	Oxidizing solid, toxic, n.o.s. CHROMIC ACID/BARIUM NITRATE	Oxidizing solid, toxic, n.o.s. CHROMIC ACID/BARIUM NITRATE	OXIDIZING SOLID, TOXIC, N.O.S. CHROMIC ACID/BARIUM NITRATE	OXIDIZING SOLID, TOXIC, N.O.S. CHROMIC ACID/BARIUM NITRATE
Transport hazard class(es)	5.1 (6.1) 	5.1 (6.1) 	5.1 (6.1) 	5.1 (6.1) 	5.1 (6.1) 	5.1 (6.1)
Packing group	II	II	II	II	II	II
Environmental hazards	Yes.	Yes. The environmentally hazardous substance mark is not required.	Yes. The environmentally hazardous substance mark is not required.	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes. The environmentally hazardous substance mark is not required.

Additional information - DOT Classification	ERG #141
Additional information - IMDG Classification	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Additional information - IATA Classification	The environmentally hazardous substance mark may appear if required by other transportation regulations.

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.

Continued on next page

Section 14. Transport information

Section 15. Regulatory information

U.S. Federal regulations : TSCA 5(a)2 proposed significant new use rule (SNUR): No products were found.
TSCA 5(a)2 final significant new use rule (SNUR): No products were found.
TSCA 12(b) one-time export notification: No products were found.
TSCA 12(b) annual export notification: chromium (VI) trioxide

United States inventory (TSCA 8b) : All components are listed or exempted.

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : OXIDIZING SOLIDS - Category 2
ACUTE TOXICITY (oral) - Category 3
ACUTE TOXICITY (dermal) - Category 3
ACUTE TOXICITY (inhalation) - Category 1
SKIN CORROSION - Category 1A
SERIOUS EYE DAMAGE - Category 1
RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
GERM CELL MUTAGENICITY - Category 1
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION - Category 2
SPECIFIC TARGET ORGAN TOXICITY - Category 1
HNOC - Corrosive to digestive tract

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	chromium (VI) trioxide	1333-82-0	50-60
	barium nitrate	10022-31-8	20-30
	ferricyanide	-	10-20
Supplier notification	chromium (VI) trioxide	1333-82-0	50-60
	barium nitrate	10022-31-8	20-30
	ferricyanide	-	10-20

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:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

Canada

Canada inventory : All components are listed or exempted.

International regulations

Inventory list

Australia : All components are listed or exempted.
China : All components are listed or exempted.
Japan : All components are listed or exempted.
New Zealand : All components are listed or exempted.
Philippines : All components are listed or exempted.
Republic of Korea : All components are listed or exempted.
Taiwan : All components are listed or exempted.

Section 16. Other information

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

Health	3
Flammability	0
Physical hazards	1

Procedure used to derive the classification

Classification	Justification
OXIDIZING SOLIDS - Category 2	Expert judgment
ACUTE TOXICITY (oral) - Category 3	Calculation method
ACUTE TOXICITY (dermal) - Category 3	Calculation method
ACUTE TOXICITY (inhalation) - Category 1	Calculation method
SKIN CORROSION - Category 1A	Calculation method
SERIOUS EYE DAMAGE - Category 1	Calculation method
RESPIRATORY SENSITIZATION - Category 1	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
GERM CELL MUTAGENICITY - Category 1	Calculation method
CARCINOGENICITY - Category 1A	Calculation method
TOXIC TO REPRODUCTION - Category 2	Calculation method
SPECIFIC TARGET ORGAN TOXICITY - Category 1	Calculation method
AQUATIC HAZARD (ACUTE) - Category 1	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 1	Calculation method

History

Date of issue/Date of revision : 3/3/2023

Date of previous issue : 1/11/2022

Version : 1.06

Regulatory Affairs Department
enthone.msds@macdermidenthone.com

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)
 N/A = Not available
 SGG = Segregation Group
 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

THE DOW CHEMICAL COMPANY

Product name: Isopropanol, Anhydrous

Issue Date: 08/30/2021

Print Date: 08/31/2021

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: Isopropanol, Anhydrous

Recommended use of the chemical and restrictions on use

Identified uses: All-purpose solvent. Industrial solvent for cleaner and coating formulations. Chemical additive.

COMPANY IDENTIFICATION

THE DOW CHEMICAL COMPANY
2211 H.H. DOW WAY
MIDLAND MI 48674
UNITED STATES

Customer Information Number:

800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: CHEMTREC +1 800-424-9300

Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

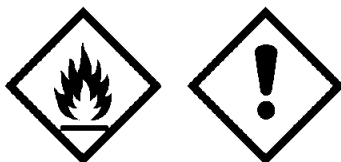
Flammable liquids - Category 2

Eye irritation - Category 2A

Specific target organ toxicity - single exposure - Category 3

Label elements

Hazard pictograms



Signal word: **DANGER!**

Hazards

Highly flammable liquid and vapour.
Causes serious eye irritation.
May cause drowsiness or dizziness.

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 or lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing dust, fume, gas, mist, vapours and/or spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/ eye protection/ face protection.

Response

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 dry sand, dry chemical or alcohol-resistant foam to extinguish.

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 and/or container to an approved waste disposal plant.

Other hazards

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: propan-2-ol

This product is a substance.

Component**CASRN****Concentration**

Isopropanol

67-63-0

100.0%

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 and keep comfortable for breathing. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin contact: Wash off with plenty of water.

Eye contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

Ingestion: Do not induce vomiting. Call a physician and/or transport to emergency facility immediately.

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: Maintain adequate ventilation and oxygenation of the patient. Hemodialysis may be of benefit if substantial amounts have been ingested and the patient is showing signs of intoxication. Consider hemodialysis for patients with persistent hypotension or coma unresponsive to standard therapy (isopropanol levels >400 - 500 mg/dl). (Goldfrank, Toxicological Emergencies 7th ed., 2002; King, JAMA, 1970, 211:1855). Because rapid absorption may occur through the lungs if aspirated and cause systemic effects, the decision of whether to induce vomiting or not should be made by a physician. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Skin contact may aggravate preexisting dermatitis.

5. FIREFIGHTING MEASURES

Extinguishing media

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.. Straight or direct water streams may not be effective to extinguish 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 vent and/or rupture due to fire.. When product is stored in closed containers, a flammable atmosphere can develop.. Electrically ground and bond all equipment.. Flammable mixtures of this product are readily ignited even by static discharge.. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur.. Flammable mixtures may exist within the vapor space of containers at room temperature.. 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.. Stay upwind. Keep out of low areas where gases (fumes) can accumulate.. Water may not be effective in extinguishing fire.. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed.. Burning liquids may be extinguished by dilution with water.. Do not use direct water stream. May spread fire.. Eliminate ignition sources.. 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.. Use caution and test if material is burning before entering area. Material burns with invisible flame..

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: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Keep personnel out of low areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Vapor explosion hazard. Keep out of sewers. For large spills, warn public of downwind explosion hazard. Check area with combustible gas detector before reentering area. Ground and bond all containers and handling equipment. 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: Contain spilled material if possible. Ground and bond all containers and handling equipment. Pump with explosion-proof equipment. If available, use foam to smother or suppress. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep away from heat, sparks and flame. Avoid contact with eyes. Avoid breathing vapor. Wash thoroughly after handling. Keep container closed. Use only with adequate ventilation. No smoking, open flames or sources of ignition in handling and storage area. Electrically bond and ground all containers and equipment before transfer or use of material. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Never use air pressure for transferring product. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Minimize sources of ignition, such as static build-up, heat, spark or flame. Keep container closed. Flammable mixtures may exist within the vapor space of containers at room temperature.

Storage stability

Shelf life: Use within 24 Month

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value
Isopropanol	ACGIH	TWA	200 ppm
	Further information: A4: Not classifiable as a human carcinogen		
	ACGIH	STEL	400 ppm
	Further information: A4: Not classifiable as a human carcinogen		
	OSHA Z-1	TWA	980 mg/m3 400 ppm

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Isopropanol	67-63-0	Acetone	Urine	End of shift at end of workweek	40 mg/l	ACGIH BEI

Exposure controls

Engineering controls: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use 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. Examples of preferred glove barrier

materials include: Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). Examples of acceptable glove barrier materials include: Chlorinated polyethylene. 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: Wear clean, body-covering clothing.

Respiratory protection: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use an approved air-purifying or positive-pressure supplied-air respirator depending on the potential airborne concentration. For emergency and other conditions where the exposure guideline may be exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

The following should be effective types of air-purifying respirators: Organic vapor cartridge.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	Liquid.
Color	Colorless
Odor	Alcohols
Odor Threshold	No test data available
pH	No test data available
Melting point/range	Not applicable to liquids
Freezing point	-89 °C (-128 °F) <i>Literature</i>
Boiling point (760 mmHg)	82 °C (180 °F) <i>Literature</i>
Flash point	closed cup 12 °C (54 °F) <i>Tag Closed Cup ASTM D56</i>
Evaporation Rate (Butyl Acetate = 1)	2.9 <i>Literature</i>
Flammability (solid, gas)	Not Applicable
Flammability (liquids)	Not expected to be a static-accumulating flammable liquid.
Lower explosion limit	2.0 % vol <i>Literature</i>
Upper explosion limit	12.0 % vol <i>Literature</i>
Vapor Pressure	33 mmHg at 20 °C (68 °F) <i>Literature</i>
Relative Vapor Density (air = 1)	2.1 <i>Literature</i>
Relative Density (water = 1)	0.7855 at 20 °C (68 °F) / 20 °C <i>Literature</i>
Water solubility	> 1,000 g/L at 20 °C (68 °F) <i>Literature</i>
Partition coefficient: n-octanol/water	log Pow: 0.05 <i>Measured</i>
Auto-ignition temperature	399 °C (750 °F) <i>Literature</i>

Decomposition temperature	No test data available
Dynamic Viscosity	2.4 mPa.s at 20 °C (68 °F) <i>Literature</i>
Kinematic Viscosity	3.0 mm ² /s at 20 °C (68 °F) <i>Literature</i>
Explosive properties	Not explosive
Oxidizing properties	No
Liquid Density	0.785 g/cm ³ at 20 °C (68 °F) <i>Literature</i>
Molecular weight	60.10 g/mol <i>Calculated.</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: 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. Avoid static discharge.

Incompatible materials: Avoid contact with: Aldehydes. Halogenated organics. Halogens. Strong acids. Strong oxidizers.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials..

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Information on likely routes of exposure

Ingestion, Inhalation, Skin contact, Eye contact.

Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)

Acute oral toxicity

Based on product testing: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. May cause central nervous system depression. May cause nausea and vomiting. Signs and symptoms of excessive exposure may include: Facial flushing. Low blood pressure. Irregular heartbeats.

Based on product testing:

LD50, Rat, 5,840 mg/kg OECD 401 or equivalent

Based on product testing:

Lethal Dose, Humans, 3.2 Ounces Estimated.

Information for components:

Isopropanol

May cause central nervous system depression. Signs and symptoms of excessive exposure may include: Facial flushing. Low blood pressure. Irregular heartbeats. May cause nausea and vomiting.

LD50, Rat, 5,840 mg/kg OECD 401 or equivalent

Acute dermal toxicity

Based on product testing: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Based on product testing:

LD50, Rabbit, > 12,800 mg/kg

Information for components:

Isopropanol

LD50, Rabbit, > 12,800 mg/kg

Acute inhalation toxicity

Based on product testing: With good ventilation, single exposure is not likely to be hazardous. In poorly ventilated areas, vapors or mists may accumulate and cause respiratory irritation. Prolonged excessive exposure may cause adverse effects. Excessive exposure (400 ppm) to isopropanol may cause eye, nose and throat irritation. Incoordination, confusion, hypotension, hypothermia, circulatory collapse, respiratory arrest and death may follow a longer duration or higher levels. Observations in animals include middle ear lining damage upon exposure to vapors of isopropanol. However, the relevance of this to humans is unknown

LC50, Rat, male and female, 6 Hour, vapour, > 10000 ppm

Information for components:

Isopropanol

LC50, Rat, male and female, 6 Hour, vapour, > 10000 ppm

Skin corrosion/irritation

Based on product testing:

Prolonged exposure not likely to cause significant skin irritation.

May cause drying and flaking of the skin.

Information for components:

Isopropanol

Prolonged exposure not likely to cause significant skin irritation.

May cause drying and flaking of the skin.

Serious eye damage/eye irritation

Based on product testing:

May cause pain disproportionate to the level of irritation to eye tissues.

May cause moderate eye irritation.

May cause moderate corneal injury.

Vapor may cause eye irritation experienced as mild discomfort and redness.

Vapor may cause lacrimation (tears).

Information for components:

Isopropanol

May cause pain disproportionate to the level of irritation to eye tissues.
May cause moderate eye irritation.
May cause moderate corneal injury.
Vapor may cause eye irritation experienced as mild discomfort and redness.
Vapor may cause lacrimation (tears).

Sensitization

Did not demonstrate the potential for contact allergy in mice.
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Information for components:

Isopropanol

Did not demonstrate the potential for contact allergy in mice.
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)

May cause drowsiness or dizziness.
Route of Exposure: Ingestion
Target Organs: Central nervous system

Information for components:

Isopropanol

May cause drowsiness or dizziness.
Route of Exposure: Ingestion
Target Organs: Central nervous system

Aspiration Hazard

Aspiration into the lungs may occur during ingestion or vomiting, resulting in rapid absorption and injury to other body systems.

Information for components:

Isopropanol

Aspiration into the lungs may occur during ingestion or vomiting, resulting in rapid absorption and injury to other body systems.

Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)

Specific Target Organ Systemic Toxicity (Repeated Exposure)

In animals, effects have been reported on the following organs:
Kidney.

Liver.

Kidney effects have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans.

Observations in animals include:

Lethargy.

Information for components:

Isopropanol

In animals, effects have been reported on the following organs:

Kidney.

Liver.

Kidney effects have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans.

Observations in animals include:

Lethargy.

Carcinogenicity

Did not cause cancer in laboratory animals.

Information for components:

Isopropanol

Did not cause cancer in laboratory animals.

Teratogenicity

Isopropanol has been toxic to the fetus in laboratory animals at doses toxic to the mother.

Information for components:

Isopropanol

Isopropanol has been toxic to the fetus in laboratory animals at doses toxic to the mother.

Reproductive toxicity

In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Information for components:

Isopropanol

In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Mutagenicity

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Information for components:

Isopropanol

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

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), flow-through test, 96 Hour, 9,640 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

LC50, Daphnia magna (Water flea), static test, 24 Hour, > 10,000 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

NOEC, alga Scenedesmus sp., static test, 7 d, Growth inhibition (cell density reduction), 1,800 mg/l

ErC50, alga Scenedesmus sp., static test, 72 Hour, Growth rate inhibition, > 1,000 mg/l

Toxicity to bacteria

EC50, activated sludge, > 1,000 mg/l

Long-term (chronic) aquatic hazard

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), semi-static test, 21 d, 30 mg/l

Persistence and degradability

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Pass

Biodegradation: 95 %

Exposure time: 21 d

Method: OECD Test Guideline 301E or Equivalent

10-day Window: Pass

Biodegradation: 53 %

Exposure time: 5 d

Method: Other guidelines

Theoretical Oxygen Demand: 2.40 mg/mg Estimated.

Chemical Oxygen Demand: 2.09 mg/mg

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	20 - 72 %
20 d	78 - 86 %

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitization: OH radicals

Atmospheric half-life: 1.472 d
Method: Estimated.

Bioaccumulative potential

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 0.05 Measured

Mobility in soil

Partition coefficient (Koc): 1.1 Estimated.

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: Incinerator or other thermal destruction device.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Isopropyl alcohol
UN number	UN 1219
Class	3
Packing group	II

Classification for SEA transport (IMO-IMDG):

Proper shipping name	ISOPROPYL ALCOHOL
UN number	UN 1219
Class	3
Packing group	II
Marine pollutant	No
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Isopropyl alcohol
UN number	UN 1219
Class	3
Packing group	II

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

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Flammable (gases, aerosols, liquids, or solids)
Serious eye damage or eye irritation
Specific target organ toxicity (single or repeated exposure)

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

Isopropanol

CASRN

67-63-0

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 Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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

Revision

Identification Number: 11087776 / A001 / Issue Date: 08/30/2021 / Version: 10.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Date of first issue: 05/17/2018

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
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ACGIH BEI	ACGIH - Biological Exposure Indices (BEI)
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
STEL	Short-term exposure limit
TWA	8-hour, time-weighted average

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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.

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KÄYTTÖTURVALLISUUSTIEDOTE Lentopetroli JET A-1 (JETA1)

KOHTA 1: Aineen tai seoksen ja yhtiön tai yrityksen tunnistetiedot

1.1. Tuotetunniste

Kauppanimi	Lentopetroli JET A-1 (JETA1)
Tuotenumero	ID 10505
Sisäinen tunniste	145163

1.2. Aineen tai seoksen merkitykselliset tunnistetut käytöt ja käytöt, joita ei suositella

Tunnistetut käytöt	Aineen jakelu (ES01a) Formulointi sekä aineiden ja seosten (uudelleen)pakkaaminen, (ES02) Käyttö polttoaineena (ES12a, ES12b)
Ei suositellut käytöt	Kuluttaja Ammattikäyttö. Käyttö pinnoitteissa Käyttö puhdistusaineissa Voiteluaineet Metallityöstönesteet/valssausöljyt Käyttö side- ja irrotusaineena Käyttö maatalouskemikaaleissa Tie- ja rakennussovellukset Räjähteiden valmistus ja käyttö

1.3. Käyttöturvallisuustiedotteen toimittajan tiedot

Toimittaja	Neste Oyj Keilaranta 21, Espoo, PL 95, FIN-00095 NESTE Puh. +358 10 45811 SDS@neste.com (kemikaaliturvallisuus)
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1.4. Hätäpuhelinnumero

Kansallinen hätäpuhelinnumero	09-471 977 (suora) tai 09-4711 (vaihe) Myrkytystietokeskus
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KOHTA 2: Vaaran yksilöinti

2.1. Aineen tai seoksen luokitus

Luokitus (EY 1272/2008)

Fyysiset vaarat	Flam. Liq. 3 - H226
Terveyshaitat	Skin Irrit. 2 - H315 STOT SE 3 - H336 Asp. Tox. 1 - H304
Ympäristövaarat	Aquatic Chronic 2 - H411

2.2. Merkinnät

Varoitusmerkit



Huomiosana

Vaara

Vaaralausekkeet

H226 Syttyvä neste ja höyry.
H315 Ärsyttää ihoa.
H336 Saattaa aiheuttaa uneliaisuutta ja huimausta.
H304 Voi olla tappavaa nieltynä ja joutuessaan hengitysteihin.
H411 Myrkyllistä vesielioille, pitkäaikaisia haittavaikutuksia.

Lentopetroli JET A-1 (JETA1)

Turvalausekkeet	<p>P210 Suojaa lämmöltä, kuumilta pinnoilta, kipinöiltä, avotulelta ja muilta sytytyslähteiltä. Tupakointi kielletty.</p> <p>P273 Vältettävä päästämistä ympäristöön.</p> <p>P301+P310 JOS KEMIKAALIA ON NIELTY: Ota välittömästi yhteys MYRKYTYSTIETOKESKUKSEEN/ lääkäriin.</p> <p>P331 Ei saa oksennuttaa.</p> <p>P261 Vältä höyryn hengittämistä.</p> <p>P280 Käytä suojakäsineitä.</p>
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Sisältää	Kerosiini (maaöljy), makeutettu, Tisleet (maaöljy), vetykäsittelyt kevyet; Kerosiini - täsmentämätön, Kerosiini (maaöljy), rikitön, Uusiutuvat hiilivedyt (kerosiinityyppinen jae)
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2.3. Muut vaarat

Muut vaarat	Hitaasti haihtuva. Saattaa aiheuttaa silmien ja hengitysteiden ärsytystä. Maaperän ja pohjaveden saastumisvaara.
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KOHTA 3: Koostumus ja tiedot aineosista

3.2. Seokset

<p>Kerosiini (maaöljy), rikitön 0 - 100 %</p> <p>CAS-nro: 64742-81-0 EY-nro: 265-184-9 REACH rekisteröintinumero: 01-2119462828-25-XXXX</p>
<p>Luokitus</p> <p>Flam. Liq. 3 - H226 Skin Irrit. 2 - H315 STOT SE 3 - H336 Asp. Tox. 1 - H304 Aquatic Chronic 2 - H411</p>
<p>Tisleet (maaöljy), vetykäsittelyt kevyet; Kerosiini - täsmentämätön 0 - 100 %</p> <p>CAS-nro: 64742-47-8 EY-nro: 265-149-8 REACH rekisteröintinumero: 01-2119484819-18-XXXX</p>
<p>Luokitus</p> <p>Flam. Liq. 3 - H226 Skin Irrit. 2 - H315 STOT SE 3 - H336 Asp. Tox. 1 - H304 Aquatic Chronic 2 - H411</p>

Lentopetroli JET A-1 (JETA1)

Kerosiini (maaöljy), makeutettu	0 - 100 %	
CAS-nro: 91770-15-9	EY-nro: 294-799-5	REACH rekisteröintinumero: 01-2119502385-46-XXXX

Luokitus
 Flam. Liq. 3 - H226
 Skin Irrit. 2 - H315
 STOT SE 3 - H336
 Asp. Tox. 1 - H304
 Aquatic Chronic 2 - H411

Uusiutuvat hiilivedyt (kerosiinityyppinen jae)	0 - 50 %	
CAS-nro: —	REACH rekisteröintinumero: 01-2119850115-46	

Luokitus
 Flam. Liq. 3 - H226
 Asp. Tox. 1 - H304

Kaikkien R-lausekkeiden ja vaaralausekkeiden tekstit on esitetty kokonaisuudessaan osassa 16.

Koostumustiedot Maaöljytuotteen ja lisäaineiden seos. Kokonaisaromaatit enintään: 26,5 %. Naphthalene (CAS 91-20-3) < 1 %. Toluene (CAS 108-88-3) < 1%. Benzene (CAS 71-43-2) < 0,1 %.

KOHTA 4: Ensiaputoimenpiteet

4.1. Ensiaputoimenpiteiden kuvaus

Hengittäminen	Siirrä henkilö raittiiseen ilmaan ja varmista vaivaton hengitys. Hengitysvaikeuksiin, happi saattaa olla välttämätöntä. Jos hengitys lakkaa, anna tekohengitystä. Hakeudu lääkäriin jos oireet ovat vakavat tai jatkuvat.
Nieleminen	Älä oksennuta. Hakeudu lääkäriin välittömästi.
Ihokosketus	Riisu saastanut vaatetus välittömästi ja pese iho saippualla ja vedellä. Hakeudu lääkäriin jos ärsytys jatkuu pesun jälkeen.
Silmäkosketus	Huuhtelee välittömästi runsaalla vedellä. Poista piilolinssit, jos sen voi tehdä helposti. Jatka huuhtomista. Hakeudu lääkäriin jos ärsytys jatkuu pesun jälkeen.

4.2. Tärkeimmät oireet ja vaikutukset, sekä välittömät että viivästyneet

Yleistä tietoa	Ärsyttää ihoa. Saattaa ärsyttää silmiä. Höyryt korkeina pitoisuuksina ovat huumaavia. Saattaa aiheuttaa pahoinvointia, päänsärkyä, huimausta ja huumautumista. Keuhkoihin pääsy nielemisen tai oksentamisen yhteydessä saattaa aiheuttaa kemiallisen keuhkotulehduksen.
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4.3. Mahdollisesti tarvittavaa välitöntä lääketieteellistä apua ja erityishoitoa koskevat ohjeet

Huomioita lääkärille	Hoito oireiden mukaan.
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KOHTA 5: Palontorjuntatoimenpiteet

5.1. Sammutusaineet

Soveltuvat sammutusaineet	Vesisumu, vaahto, jauhe tai hiilidioksidi.
Epäsopivat sammutusaineet	Älä käytä vesisuihkua sammuttamiseen, koska se voi levittää tulen.

5.2. Aineesta tai seoksesta johtuvat erityiset vaarat

Lentopetroli JET A-1 (JETA1)

Erityisvaarat Syttyvä neste ja höyry. Säiliöt voivat haljeta räjähdysmäisesti tai räjähtää kuumennettaessa liiallisen paineen muodostumisen vuoksi.

Haitalliset palamistuotteet Hiilidioksidi (CO₂). Hiilimonoksidi (CO).

5.3. Palontorjuntaa koskevat ohjeet

Suojatoimet sammutustoimien aikana Viilennä kuumuudelle altistuneet astiat vesisuihkulla ja siirrä pois paloalueelta, mikäli tämä voidaan tehdä turvallisesti. Estettävä sammutusvesien pääsy saastuttamaan pinta- tai pohjavesiä.

Erityiset suojavälineet palomiehille Käytä ylipainehengityslaitetta (SCBA) ja soveltuvaa suojavaatetusta.

KOHTA 6: Toimenpiteet onnettomuuspäästöissä

6.1. Henkilökohtaiset suojatoimet, suojavarusteet ja menettelyt hätätilanteissa

Henkilökohtaiset varotoimet Vältä höyryjen hengittämistä ja kosketusta ihoon ja silmiin. Kaikissa toimenpiteissä on käytettävä riittäviä suojavarusteita.

Pelastushenkilökunnalle Asiattomien pääsy estettävä. Höyryt ovat ilmaa raskaampia ja saattavat levitä lähellä maata ja matkustaa pitkiäkin matkoja syttymispaikasta ja leimahtaa. Poista kaikki sytytyslähteet, jos sen voi tehdä turvallisesti. Estä staattisen sähköön aiheuttama kipinöinti.

6.2. Ympäristöön kohdistuvat varotoimet

Ympäristöön kohdistuvat varotoimet Vältettävä päästämistä ympäristöön. Sulje vuoto, jos sen voi tehdä turvallisesti. Estä vuodon tai valuman pääsy putkistoihin, viemäreihin ja vesistöihin. Kerää vuoto hiekkaan, maahan tai muuhun sopivaan palamattomaan materiaaliin. Ilmoita viranomaisille jos ympäristön saastumista ilmenee (viemärit, vesistöt, maaperä tai ilma). Maaperän ja pohjaveden saastumisvaara.

6.3 Suojarakenteita ja puhdistusta koskevat menetelmät ja -välineet

Puhdistusohjeet Aloitetaan välittömästi nestemäisen tuotteen ja likaantuneen maan talteenotto. Pienet vuodot: Imeytä vuoto hiekkaan tai muuhun inerttiin imeytysaineeseen. Huomioitava tuotteen aiheuttama palo- ja terveysvaara. Ole varovainen, koska lattia ja muut pinnat saattavat tulla liukkaaksi.

6.4. Viittaukset muihin kohtiin

Viittaukset muihin kohtiin Henkilökohtaiset suojaimet, katso kohta 8.

KOHTA 7: Käsittely ja varastointi

7.1. Turvallisen käsittelyn edellyttämät toimenpiteet

Käytön varotoimet Tuote sisältää haihtuvia aineita, jotka voivat levitä ympäröivään ilmaan. Vältettävä kuumuutta, liekkejä ja muita sytytyslähteitä. Estettävä staattisen sähköön aiheuttama kipinöinti. Käytä ainoastaan kipinöimättömiä työkaluja. Säiliö ja vastaanottavat laitteet on maadoitettava/yhdistettävä. Kaikki käsittely tulee suorittaa ainoastaan hyvin ilmastoidussa tilassa. Vältä höyryjen hengittämistä ja kosketusta ihoon ja silmiin. Tarvittaessa käytettävä henkilökohtaisia suojaimia ja/tai kohdepoistoa. Syöminen, juominen ja tupakointi kielletty kemikaalia käytettäessä. Pese kädet ja kaikki muut saastuneet kehon osat saippualla ja vedellä ennen poistumista työkohteesta. Pese saastunut vaatetus ennen uudelleenkäyttöä. SÄILIÖTÖISSÄ NOUDATETTAVA ERITYISOHJEITA (hapen syrjäytymisen ja hiilivetyjen vaara).

7.2. Turvallisen varastoinnin edellyttämät olosuhteet, mukaan luettuina yhteensopimattomuudet

Lentopetroli JET A-1 (JETA1)

Varastoinnin varotoimet Palavieneidien varasto. Höyryt saattavat muodostaa räjähtävän seoksen ilman kanssa. Varastoi paikallisten määräysten mukaan. Varastoi rajatulla eristetyllä alueella estääksesi päästöjen pääsyn viemäriin ja/tai vesistöihin. Mahdollisiin vuotoihin varaudutaan esim. keräysaltailla, täyttö- ja tyhjennyspaikan päällystyksellä ja viemäroinnillä. Varastoi ainoastaan oikein merkityissä astioissa. Käytä astioita, jotka ovat tehty seuraavista materiaaleista: Hiiliteräs. Ruostumaton teräs. Säilytettävä tiiviisti suljettuna. Suojaa auringonvalolta.

7.3. Erityinen loppukäyttö

Erityinen loppukäyttö(t) Ei tunnettu.

KOHTA 8: Altistumisen ehkäiseminen ja henkilösuojaimet

8.1. Valvontaa koskevat muuttujat

HTP-arvot

Liutinbenssiinit, ryhmä 3: 100mg/m³ (8h), HTP 2018/FIN.
Hiilivedyille voidaan soveltaa niiden yksittäisiä raja-arvoja.

bentseeni

Bentseeni: 1 ppm (8h), 3,25 mg/m³, VNa 1267/2019/FIN (sitova raja-arvo).
Saattaa imeytyä ihon läpi.

naphthalene

Naftaleeni: 1 ppm (8h), 5 mg/m³ (8h), 2 ppm (15min), 10mg/m³ (15min), HTP 2018/FIN.
Naftaleeni: 10 ppm (8h), 50 mg/m³ (8h), EU OELV (EC/1991/322).

tolueeni

Tolueeni: 25 ppm (8h), 81 mg/m³ (8h), 100ppm (15min), 380 mg/m³ (15min), HTP 2018/FIN.
Tolueeni: 50 ppm (8h), 192 mg/m³ (8h), 100ppm (15min), 384 mg/m³ (15min), EU OELV (EC/2006/15)
Saattaa imeytyä ihon läpi.

PNEC Ei saatavilla.

Uusiutuvat hiilivedyt (kerosiinityyppinen jae)

DNEL Työntekijät - Ihon kautta; pitkäaikainen Elimistöön vaikuttava: 42 mg/kg painokiloa kohti päivässä
Työntekijät - Hengitettynä; pitkäaikainen Elimistöön vaikuttava: 147 mg/m³

Kategoria: Kerosiinit

DNEL Kuluttaja - Suun kautta; pitkäaikainen Elimistöön vaikuttava: 18,75 mg/kg bw/day

8.2. Altistumisen ehkäiseminen

Tekniset torjuntatoimenpiteet Kaikki käsittely tulee suorittaa ainoastaan hyvin ilmastoidussa tilassa. Tarvittaessa käytettävä henkilökohtaisia suojaimia ja/tai kohdepoistoa. Käsiteltävä hyvän työhygienian ja turvallisuuskäytännön mukaisesti. SÄILIÖTÖISSÄ NOUDATETTAVA ERITYISOHJEITA (hapen syrjäytymisen ja hiilivetyjen vaara).

Silmien/kasvojen suojaus Tiukasti istuvat suojalasit.

Käsiensuojaus Käytä suojakäsineitä. Suositellaan, että käsineet on valmistettu seuraavista materiaaleista: Nitrilikumi. Neopreeni. Polyvinylikloridi (PVC) Valittujen käsineiden läpäisy aika tulee olla vähintään 8 tuntia. Suojausluokka 6. Suojakäsineet standardien EN 420 ja EN 374 mukaiset. Suojakäsineet on vaihdettava säännöllisesti.

Muut ihon ja kehon suojausmenetelmät Tarvittaessa suojavaatetus. Käytä antistaattista suojavaatetusta jos on olemassa staattisen sähkön aiheuttama syttymisvaara.

Lentopetroli JET A-1 (JETA1)

Hengityksensuojaus	Suodatinsuojain/puolinaamari Kaasusuodatin, tyyppi A2. Suodatinsuojainta voi käyttää enintään 2 tuntia kerrallaan. Suodatinsuojaimia ei saa käyttää vähähappisissa olosuhteissa (< 19 til.-%). Suurissa pitoisuuksissa on käytettävä hengityslaitteita (paineilma- tai raitisilma). Suodatin on vaihdettava riittävän usein. Hengityssuojain standardin EN 140 mukaan.
Ympäristövahinkojen ehkäiseminen	Mahdollisiin vuotoihin varaudutaan esim. keräysaltailla, täyttö- ja tyhjennyspaikan päällystyksellä ja viemäröinnillä.

KOHTA 9: Fysikaaliset ja kemialliset ominaisuudet

9.1. Fysikaalisia ja kemiallisia perusominaisuuksia koskevat tiedot

Ulkomuoto	Neste.
Väri	Kirkas.
Haju	Hiilivedyt.
Hajukynnys	-
pH	-
Sulamispiste	≤ -47°C (ASTM D2386, D5972, IP 529)
Kiehumispiste ja alue	130 - 300°C (ASTM D 86)
Leimahduspiste	≥ 38°C (IP 170)
Ylempi/alempi syttyvyys- tai räjähdysraja	Alempi syttymis-/räjähdysraja: 0,6 % Ylempi syttymis-/räjähdysraja: 6 %
Höyrynpaine	~ 2 kPa @ 38°C
Höyryn tiheys	> 3 (Ilma = 1.0)
Suhteellinen tiheys	0,775 - 0,840 @ 15°C (ASTM D4052)
Liukoisuus	Tuote on huonosti veteenliukeneva. < 50 mg/l @ 20°C
Jakautumiskerroin	log Kow: > 3
Itsesyttymislämpötila	~ 250°C
Hajoamislämpötila	-
Viskositeetti	Kinemaattinen viskositeetti < 7 mm ² /s @ 40°C
Räjähtävät ominaisuudet	Ei pidetä räjähtävänä.
Hapettavat ominaisuudet	Ei täytä luokituksen hapettava tunnusmerkkejä.

9.2. Muut tiedot

Muut tiedot	Ei tunnettu.
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KOHTA 10: Stabiilisuus ja reaktiivisuus

10.1. Reaktiivisuus

Reaktiivisuus	Ei tunnettuja reaktiivisuusvaaroja liittyen tähän tuotteeseen.
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10.2. Kemiallinen stabiilisuus

Pysyvyys	Stabiili normaalissa huoneenlämpötilassa ja käytettäessä kuten suositeltu.
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10.3. Vaarallisten reaktioiden mahdollisuus

Vaarallisten reaktioiden mahdollisuus	Ei tunnettuja haitallisia reaktioita.
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Lentopetroli JET A-1 (JETA1)

10.4. Vältettävät olosuhteet

Vältettävät olosuhteet Pidä erillään kuumuudesta, kipinöistä ja avoimista liekeistä.

10.5. Yhteensopimattomat materiaalit

Vältettävät materiaalit Hapettavat aineet.

10.6. Vaaralliset hajoamistuotteet

Haitalliset hajoamistuotteet Ei hajoa käytettäessä ja varastoitaessa kuten suositeltu.

KOHTA 11: Myrkyllisyyteen liittyvät tiedot

11.1. Tiedot myrkyllisistä vaikutuksista

Myrkylliset vaikutukset Saatavilla olevien tietojen perusteella luokituskriteerit eivät täyty.

Ihosyövyttävyys/ihoärsytys

Skin corrosion/irritation Ärsyttää ihoa. (EPA Guidelines in FR Vol. 44, No. 145, p. 44054-44093) Tuote ärsyttää limakalvoja ja voi aiheuttaa vatsavaivoja nieltynä. Saattaa aiheuttaa hengitysteiden ärsytystä.

vakava silmävaurio/silmä-ärsytys

Vakava silmävaurio/-ärsytys Saatavilla olevien tietojen perusteella luokituskriteerit eivät täyty. (EPA OTS 798.4500)

Ihon herkistyminen

Ihon herkistyminen Saatavilla olevien tietojen perusteella luokituskriteerit eivät täyty. (OECD 406, EPA OTS 798.4100)

Sukulolujen perimää vaurioittavat vaikutukset

Genotoksisuus - in vitro Saatavilla olevien tietojen perusteella luokituskriteerit eivät täyty. (OECD 471, modified Ames test, 479)

Genotoksisuus - in vivo Saatavilla olevien tietojen perusteella luokituskriteerit eivät täyty. (OECD 479)

Syöpää aiheuttavat vaikutukset

Karsinogenisuus Saatavilla olevien tietojen perusteella luokituskriteerit eivät täyty. (OECD 451)

Lisääntymiselle vaaralliset vaikutukset

Myrkyllisyys lisääntymiselle - hedelmällisyys Saatavilla olevien tietojen perusteella luokituskriteerit eivät täyty. (OECD 415)

Myrkyllisyys lisääntymiselle - kehitys Saatavilla olevien tietojen perusteella luokituskriteerit eivät täyty. (OECD 414)

STOT (elinkohtainen myrkyllisyys) - kerta-altistuminen

STOT - kerta-altistus Saattaa aiheuttaa pahoinvointia, päänsärkyä, huimausta ja huumautumista. Narkoottinen suurina pitoisuuksina.

STOT (elinkohtainen myrkyllisyys) - toistuva altistuminen

STOT - toistuva altistus Saatavilla olevien tietojen perusteella luokituskriteerit eivät täyty. (OECD 408, 411, 413)

Aspiraatiovaara

Aspiraatiovaara Voi olla tappavaa nieltynä ja joutuessaan hengitysteihin. Keuhkoihin pääsy nielemisen tai oksentamisen yhteydessä saattaa aiheuttaa kemiallisen keuhkotulehduksen.

Aineosien myrkyllisyystiedot

Uusiutuvat hiilivedyt (kerosiinityyppinen jae)

Välitön myrkyllisyys - suun kautta

Huomiot (suun kautta LD₅₀) LD₅₀ > 2000 mg/kg, Suun kautta, Rotta (EC B1 tris)

Lentopetroli JET A-1 (JETA1)

Välitön myrkyllisyys - ihon kautta

Huomiot (ihon kautta LD₅₀) LD₅₀ > 2000 mg/kg, Ihon kautta, Rotta (EC B3)

Kategoria: Kerosiinit

Välitön myrkyllisyys - suun kautta

Huomiot (suun kautta LD₅₀) LD₅₀ > 5000 mg/kg, Suun kautta, Rotta (OECD 420, EPA OTS 798.1175)

Välitön myrkyllisyys - ihon kautta

Huomiot (ihon kautta LD₅₀) LD₅₀ > 2000 mg/kg, Ihon kautta, Kani (OECD 402, EPA OTS 798.1100)

Välitön myrkyllisyys - hengitettynä

Huomiot (hengitettynä LC₅₀) LC₅₀ > 5,28 mg/l, Hengitettynä, Rotta (4h) (OECD 403)

KOHTA 12: Tiedot vaarallisuudesta ympäristölle

12.1. Myrkyllisyys

Myrkyllisyys Myrkyllistä vesieliöille, pitkäaikaisia haittavaikutuksia.

Välitön myrkyllisyys vesieliöille

Aineosien ekologiset tiedot

Uusiutuvat hiilivedyt (kerosiinityyppinen jae)

Välitön myrkyllisyys vesieliöille

Akuutti myrkyllisyys - kalat LL₅₀, 96 tuntia: > 1000 mg/l, WAF (OECD 203)

Akuutti myrkyllisyys - selkärangattomat vesieliöt EL50, 48 tuntia: > 100 mg/l, WAF (OECD 202)

Akuutti myrkyllisyys - vesikasvit EL50, 72 tuntia: > 100 mg/l, WAF (OECD 201)

Akuutti myrkyllisyys - mikro-organismit EC₅₀, 3 tuntia: > 1000 mg/l, Mikro-organismit (jätevesiliete) (OECD 209)

Krooninen myrkyllisyys vesieliöille

Krooninen myrkyllisyys - selkärangattomat vesieliöt NOEC, 21 päivää: 1 mg/l, LOEC, 21 päivää: 3,2 mg/l, Vesikirppu (Daphnia magna) WAF (OECD 211)
NOEC, 10 päivää: 373 mg/kg, LC₅₀, 10 päivää: 1200 mg/kg, Sedimenttieliöt (OSPAR Protocols, Part A: Sediment Bioassay, 2005)

Kategoria: Kerosiinit

Välitön myrkyllisyys vesieliöille

Akuutti myrkyllisyys - kalat LL₅₀, 24 tuntia: 5-17 mg/l, Oncorhynchus mykiss (Kirjolohi)
LL₅₀, 48 tuntia: 2-5 mg/l, Oncorhynchus mykiss (Kirjolohi)
WAF (OECD 203)

Akuutti myrkyllisyys - selkärangattomat vesieliöt EL50, 24 tuntia: 4,6 mg/l, Vesikirppu (Daphnia magna)
EL50, 48 tuntia: 1,4 mg/l, Vesikirppu (Daphnia magna)
NOEL, 48 tuntia: 0,3 mg/l, Vesikirppu (Daphnia magna)
WAF (OECD 202)

Lentopetroli JET A-1 (JETA1)

Akuutti myrkyllisyys - vesikasvit EL50, 24 tuntia: 1-3 mg/l, Pseudokirchneriella subcapitata
NOEL, 24 tuntia: 1 mg/l, Pseudokirchneriella subcapitata
WAF (OECD 201)

Krooninen myrkyllisyys vesieläimille

Krooninen myrkyllisyys - kala varhaisessa elämänvaiheessa NOEL, 28 päivää: 0,1 mg/l, Oncorhynchus mykiss (Kirjolohi) (QSAR)

Krooninen myrkyllisyys - selkärangattomat vesieläimet EL50, 21 päivää: 0.81 mg/l, Vesikirppu (Daphnia magna)
NOEL, 21 päivää: 0,48 mg/l, Vesikirppu (Daphnia magna)
WAF (OECD 211)

12.2. Pysyvyys ja hajoavuus

Pysyvyys ja hajoavuus Tuote sisältää haihtuvia aineita, jotka voivat levitä ympäröivään ilmaan. Voi hajota valon vaikutuksesta ilmakehässä.

Pysyvyys (hydrolyysi) Ei merkittäviä reaktioita vedessä.

Aineosien ekologiset tiedot

Uusiutuvat hiilivedyt (kerosiinityyppinen jae)

Biohajoavuus Nopeasti hajoava (OECD 301B)

Kategoria: Kerosiinit

Biohajoavuus Luonnostaan biohajoava. (OECD 301F)

12.3. Biokertyvyys

Biokertyvyys Mahdollisesti biokertyvä.

Jakautumiskerroin log Kow: > 3

12.4. Liikkuvuus maaperässä

Liikkuvuus Hitaasti haihtuva. Tuote on huonosti veteenliukeneva. Tuote voi läpäistä maaperän ja kulkeutua pohjaveden pinnalle. Tuote sisältää aineita, jotka sitoutuvat hiukkasiin ja säilyvät maaperässä.

12.5. PBT- ja vPvB-arvioinnin tulokset

PBT- ja vPvB-arvioinnin tulokset Tämä tuote ei sisällä yhtään ainetta, joka on luokiteltu PBT:ksi tai vPvB:ksi.

12.6. Muut haitalliset vaikutukset

Muut haitalliset vaikutukset Tuote on tahraava, ja suora kosketus aiheuttaa mm. linnuille ja kasveille haitallisia vaikutuksia. Adsorboituneet hiilivetyjämmät voivat aiheuttaa haitallisia vaikutuksia pohjasedimenttien eliöille.

KOHTA 13: Jätteiden käsittelyyn liittyvät näkökohdat

13.1. Jätteiden käsittelymenetelmät

Lentopetroli JET A-1 (JETA1)

Hävitysmenetelmät

Hävitä jäte hyväksytyllä jätteenkäsittelyasemalla kaikkien vaatimusten ja paikallisten jätemääräysten mukaan. Käsiteltäessä jätettä, varotoimia koskien tuotteen käsittelyä tulee noudattaa. Noudata varovaisuutta käsiteltäessä tyhjiä astioita, joita ei ole puhdistettu tai huuhdeltu läpikotaisin. Tyhjät astia ja vuoraus saattavat sisältää joitakin tuotteen jäämiä ja siten olla mahdollisesti vaarallisia.

KOHTA 14: Kuljetustiedot

Merikuljetuksen huomiot This cargo is considered an Energy-rich fuel and effective 1 January 2019 should be carried subject to Annex I of MARPOL, see Annex 12 of MEPC.2/Circ.24. Please also refer to MEPC.1/Circ.879 - GUIDELINES FOR THE CARRIAGE OF ENERGY-RICH FUELS AND THEIR BLENDS

14.1. YK-numero

YK nro. (ADR/RID) 1863

14.2. Kuljetuksessa käytettävä virallinen nimi

Oikea kuljetusnimike UN 1863, LENTOPETROLI
(ADR/RID)

14.3. Kuljetuksen vaaraluokka

ADR/RID luokka 3

14.4. Pakkausryhmä

ADR/RID pakkausryhmä III

14.5. Ympäristövaarat

Ympäristölle vaarallinen aine/merta saastuttava
MARINE POLLUTANT

14.6. Erityiset varotoimet käyttäjälle

Vaaran tunnusnumero 30
(ADR/RID)

Tunnelirajoituskoodi (D/E)

14.7. Kuljetus irtolastina Marpol 73/78 -sopimuksen ja IBC-säännösten mukaisesti

Kuljetus irtolastina liitteen II Ei soveltuva.
MARPOL 73/78 ja IBC koodin mukaisesti

KOHTA 15: Lainsäädäntöä koskevat tiedot

15.1. Tiettyä ainetta tai seosta koskevat turvallisuus-, terveys- ja ympäristösäännökset tai -lainsäädäntö

EU-lainsäädäntö Asetuksen (EY) N: o 1907/2006 Euroopan parlamentin ja neuvoston 18. joulukuuta 2006, kemikaalien rekisteröinnistä, arvioinnista, lupamenettelyistä ja rajoituksista (REACH) (muutettu).
Komission asetus (EU) N: o 2015/830 28. toukokuuta 2015.
Asetuksen (EY) N: o 1272/2008 Euroopan parlamentin ja neuvoston 16 päivänä joulukuuta 2008 seosten luokituksesta, merkinnöistä ja pakkaamisesta (muutettu).

15.2. Kemikaaliturvallisuusarviointi

Kemikaalin turvallisuus selvitys on suoritettu.

KOHTA 16: Muut tiedot

Lentopetroli JET A-1 (JETA1)

Käyttöturvallisuustiedotteessa käytetyt lyhenteet	EU OELV = European Occupational Exposure Limit Value
Kirjallisuusviitteet ja tietolähteet	Säädökset, tietokannat, kirjallisuus, omat tutkimukset. CONCAWE Report 13/17: Hazard classification and labelling of petroleum substances in the EEA - 2017. Kemikaaliturvallisuusraportti Distillates (petroleum), hydrotreated light, 2019. Kemikaaliturvallisuusraportti Kerosine (petroleum), hydrodesulfurized, 2019. Kemikaaliturvallisuusraportti Kerosine (petroleum), sweetened, 2019. Kemikaaliturvallisuusraportti Renewable hydrocarbons (kerosene type fraction): 2011.
Koulutusneuvot	TUOTETTA EI SAA IMEÄ LETKUN KAUTTA SUULLA.
Version kommentit	Päivitetty, kohdat: 3.2, 8.1, 9.1, 11.1, 12.1-12.2, 14.0, 16. Tarkistettu formulaatio. HUOM: Viivat marginaalissa osoittavat merkittävää muutosta edellisestä versiosta.
Viimeinen muutospäivä	8.6.2020
Edellinen päivämäärä	17.2.2020
KTT numero	5306
Täydelliset vaaralausekkeet	H226 Syttyvä neste ja höyry. H304 Voi olla tappavaa nieltynä ja joutuessaan hengitysteihin. H315 Ärsyttää ihoa. H336 Saattaa aiheuttaa uneliaisuutta ja huimausta. H411 Myrkyllistä vesieliöille, pitkäaikaisia haittavaikutuksia.

Altistumisskenaario

Aineen jakelu - Teollinen käyttö

Altistumisskenaarion identiteetti

Tuotenimi	Kerosines
Versionumero	2018
ES-numero	ES01a

1. Altistumisskenaarion otsikko

Päänimeke	Aineen jakelu - Teollinen käyttö
Työstöala	Aineen lastaus (mukaan lukien laiva/proomu- ja maantie/rautatiekuljetukset sekä IBC-kontit) ja uudelleen pakkaaminen (mukaan lukien tynnyrit ja pienpakkaukset) mukaan lukien sen näytteet, varastointi, purkaminen, levittäminen ja niihin liittyvät laboratoriotoinnot.

Ympäristö

Ympäristöpäästöluokat [ERC]	ERC4 Reagoimattomien valmistuksen apuaineiden käyttö teollisuustoimipaikassa (ei sisällyttämistä esineeseen tai sen päälle) ERC5 Käyttö teollisuustoimipaikassa, jossa aine sisällytetään esineeseen tai sen päälle ERC6a Väli tuotteiden käyttö ERC6b Reagoivien valmistuksen apuaineiden käyttö teollisuustoimipaikassa (ei sisällyttämistä esineeseen tai sen päälle) ERC6c Monomeerien käyttö polymerointiprosesseissa teollisuustoimipaikassa (sisällyttäminen esineeseen tai sen päälle tai ei sisällyttämistä esineeseen tai sen päälle) ERC6d Reagoivien säätöaineiden käyttö polymerointiprosesseissa teollisuustoimipaikassa (sisällyttäminen esineeseen tai sen päälle tai ei sisällyttämistä esineeseen tai sen päälle) ERC7 Aineiden teollinen käyttö suljetuissa järjestelmissä
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Erityiset ympäristöpäästöluokat (SPERC)	ESVOC SPERC 1.1b.v1
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Työntekijä

Prosessikategoriat	PROC1 Kemiallinen tuotanto tai jalostus suljetussa prosessissa, jossa altistuminen ei ole todennäköistä, tai prosessit vastaavissa eristysolosuhteissa PROC2 Kemiallinen tuotanto tai jalostus suljetussa jatkuvassa prosessissa, jossa esiintyy satunnaista hallittua altistumista, tai prosesseissa, joissa eristysolosuhteet ovat vastaavat PROC3 Valmistus tai sekoitus kemianteollisuuden suljetuissa panosprosesseissa, joissa esiintyy satunnaista hallittua altistumista, tai prosessissa, jossa eristysolosuhteet ovat vastaavat PROC4 Kemiallinen tuotanto, jossa on altistumisen mahdollisuus PROC8a Aineen tai seoksen siirtäminen (panostus ja tyhjennys) yleistiloissa PROC8b Aineen tai seoksen siirtäminen (panostus/tyhjennys) erillisissä tiloissa PROC9 Aineen tai seoksen siirtäminen pieniin astioihin (erityinen täyttö- ja punnituslinja) PROC15 Käyttö laboratorioaineena
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2. Muita käyttöehtoja, jotka vaikuttavat altistumiseen (Teollinen - Ympäristö 1)

Tuotteen ominaisuudet

Aine on monimutkainen UVCB-aine. Etupäässä hydrofobinen

käytetyt määrät

Aineen jakelu - Teollinen käyttö

EU-tonnimäärän alueittain käytetty osuus: 0.1
 Alueellinen käyttömäärä (tonnes/vuosi): 8,700,000
 Alueellisen tonnimäärän paikallisesti käytetty osuus: 1
 alueen vuosittainen tonnimäärä (tonnia/vuosi): 17,000
 Suurin päivittäinen tonnisto alueella: 58 tonnes

Käytön tiheys ja kesto

Jatkuvat päästöt.
 Päästöpäivät: 300 päivät/vuotta

Muut käyttöolosuhteet, jotka koskevat ympäristön altistumista

Päästökerroin - ilma	Päästäjakeet ilmaan prosessista (päästöt alussa ennen riskinhallintatoimenpiteitä): 1.0E-03
Päästökerroin - vesi	Päästäjakeet jäteveeten prosessista (päästöt alussa ennen riskinhallintatoimenpiteitä): 1.0E-05
Päästökerroin - maaperä	Päästäjakeet maaperään prosessista (päästöt alussa ennen riskinhallintatoimenpiteitä): 1.0E-05

Ympäristötekijät, joihin riskinhallinta ei vaikuta

Laimentaminen	Paikallinen makean veden laimennuskerroin: 10 Paikallinen meriveden laimennuskerroin: 100
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Riskinhallintatoimenpiteet

Hyvä käytäntö	Eri paikoissa toisistaan poikkeavien käytäntöjen takia vapautumisprosesseista tehdään varovaisia arvioita. ympäristövaarat liittyvät makean veden sedimentti
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Tiedot jätevedenpuhdistamosta (STP)	Arvioitu aineen poistuminen jätevedestä talousjätevesipuhdistuksen kautta : 95% Poistotehokkuus (kokonaisuus): 95% Suurin sallittu paikallinen tonnisto (MSafe) perustuen jätevesipuhdistuksen kokonaispoiston jälkeisiin päästöihin : 2.1E+06 kg/päivä Oletettu talousjätevedenpuhdistamon virtaus (m ³ /päivä): 2000.
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Paikalliset tekniset olosuhteet ja toimenpiteet ilmapäästöjen vähentämiseksi tai rajoittamiseksi

Ilma	Käsittele ilmaan tapahtuvat päästöt niin, että saadaan poistotehokkuus, joka on tyypillisesti 90%.
Vesi	Käsittele jätevedet paikan päällä (ennen vesistöön johtamista), että saavutetaan vaadittu puhdistusteho (%): 0.0 Johdettaessa jätevedet talousjätevedenpuhdistamolle ei jätevedenkäsittelyä tarvita paikan päällä.
maaperä	Teollisuuslietettä ei saa päästää luonnolliseen maaperään. Puhdistamoliete tulisi polttaa, säilyttää tai käsitellä.

Ehdot ja toimenpiteet liittyen hävitettäväksi tarkoitetun jätteen ulkoiseen käsittelyyn

Jätteidenkäsittely	Ulkoisen jätteiden käsittely ja hävittäminen ottaen huomioon kyseiset paikalliset ja/tai kansalliset määräykset.
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Ehdot ja toimenpiteet liittyen jätteen ulkoiseen hyödyntämiseen

Talteenottomenetelmä	ulkoisen jätteiden vastaanotto ja sen uudelleen käyttö ottaen huomioon paikalliset ja/tai kansalliset määräykset.
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2. Muita käyttöehtoja, jotka vaikuttavat altistumiseen (Työntekijät - Terveys 1)

Tuotteen ominaisuudet

Aineen jakelu - Teollinen käyttö

Olomuoto	Nestemäinen
höyrynpaine	Höyrynpaine 0.5 - 10 kPa STP.
Pitoisuustiedot	Kattaa aineosuudet tuotteessa 100%:n saakka (ellei toisin ilmoitettu).

Käytön tiheys ja kesto

Kattaa päivittäisen altistumisen saakka 8 tuntia (ellei toisin ilmoitettu).

muut käyttöolosuhteet, joilla on vaikutusta työntekijän altistumiseen

Ympäristö	Oletuksena on, että työpaikalla noudatetaan hyvää perushygieniaa.
Lämpötila	oletuksena on, ettei lämpötila ole yli 20 °C korkeampi kuin ympäröivä lämpötila (jos ei muuta mainittu).

Hallinnolliset toimenpiteet päästöjen ja altistumisen välttämiseksi/rajoittamiseksi

Hallinnolliset toimenpiteet	Yleiset toimenpiteet (ihoärsyttävät aineet) Vältä suoraa ihokosketusta tuotteeseen. Tunnista epäsuoralle ihokosketukselle alttiit alueet. Käytä (EN374 mukaisesti testattuja) käsineitä, jos käsikosketus aineeseen on todennäköistä. Poista epäpuhtaudet/roiskeet heti. Poista epäpuhtaudet/läikkynyt heti. Henkilökunta tulee peruskouluttaa siten, että altistuminen minimoidaan ja mahdollisesti esiintyvistä iho-ongelmista kerrotaan.
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Riskinhallintatoimenpiteet

Yleinen altistuminen (suljetut järjestelmät)
Muita erityisiä toimenpiteitä ei ole tunnistettu.

Yleinen altistuminen (avoimet järjestelmät)
Muita erityisiä toimenpiteitä ei ole tunnistettu.

Prosessinäyte
Muita erityisiä toimenpiteitä ei ole tunnistettu.

Laboratoriotoinninnat
Muita erityisiä toimenpiteitä ei ole tunnistettu.

Irtotavaran siirto
Muita erityisiä toimenpiteitä ei ole tunnistettu.

Tynnyrien ja pienten pakkausten täyttäminen
Muita erityisiä toimenpiteitä ei ole tunnistettu.

Laitteen puhdistus ja huolto
Muita erityisiä toimenpiteitä ei ole tunnistettu.

Tuotteiden irtotavaravarastointi
Muita erityisiä toimenpiteitä ei ole tunnistettu.

3. arvio altistumisesta (Ympäristö 1)

Arviointimenetelmä	Käytetty Petrorisk-mallia. (Hydrocarbon Block Method)
	Ilmaemissioiden maksimiriskisuhde 2.3E-04 Maksimaalinen riskisuhde jätevesiemissioille 1.3E-02

4. Ohjeet altistumisskenaarion soveltuvuuden tarkistamiseksi (Ympäristö 1)

Aineen jakelu - Teollinen käyttö

ohjeet pohjautuvat oletettuihin käyttöolosuhteisiin, joiden ei tarvitse olla sovellettavissa kaikkialla; siksi sopivien riskienhallintatoimenpiteiden määrittämiseksi voidaan tarvita skaalausta. Jätevedelle vaadittu erotustehokkuus voidaan saavuttaa käyttäen paikan päällä olevaa tai vierasta teknologiaa, joko yksinään tai yhdistelmänä. Ilmalle vaadittu erotustehokkuus voidaan saavuttaa käyttäen paikan päällä olevaa teknologiaa, joko yksinään tai yhdistelmänä. muut yksityiskohdat skaalauksesta ja valvontateknologioista löytyvät SpERC-Factsheet -dokumentista (<http://cefc.org/en/reach-for-industries-libraries.html>).

3. arvio altistumisesta (Terveys 1)

Arviointimenetelmä

Työperäisen altistumisen arvioimiseksi on käytetty ECETOC TRA -työkalua, jos ei toisin mainittu.

Saatavilla olevat vaaratiedot eivät salli johdatusta DNEL:stä ärsyttävään vaikutukseen iholle. Turvallisen käytön päättämiseksi on käytetty kvalitatiivista lähestymistapaa. Saatavilla olevat vaaratiedot eivät tue DNEL:n tarvetta muihin terveydellisiin vaikutuksiin. Käyttäjiä pyydetään huomioimaan kansalliset työpaikan raja-arvot sekä vastaavat arvot.

4. Ohjeet altistumisskenaarion soveltuvuuden tarkistamiseksi (Terveys 1)

Jos muita riskienhallintatoimenpiteitä/käyttöehtoja sovelletaan, tulisi käyttäjien varmistaa, että riskit rajoitetaan vähintään samalle tasolle.

Altistumisskenaario

Formulointi sekä aineiden ja seosten (uudelleen)pakkaaminen - Teollinen käyttö

Altistumisskenaarion identiteetti

Tuotenimi	Kerosines
Versionumero	2018
ES-numero	ES02

1. Altistumisskenaarion otsikko

Päänimeke	Formulointi sekä aineiden ja seosten (uudelleen)pakkaaminen - Teollinen käyttö
Työstöala	aineen ja sen seosten formulointi, pakkaaminen ja uudelleen pakkaaminen erä- tai jatkuvissa prosesseissa, mukaan lukien varastointi, kuljetus, sekoittaminen, tabletointi, puristaminen, rakeistaminen, ekstruusio, pakkaaminen pienessä ja suuressa mittakaava, huollon sekä näytteenoton ja siihen liittyvien laboratoriotointimint

Ympäristö

Ympäristöpäästöluokat [ERC] ERC2 Formulointi seoksessa

Erityiset ympäristöpäästöluokat (SPERC) ESVOC SPERC 2.2.v1

Työntekijä

Prosessikategoriat

PROC1 Kemiallinen tuotanto tai jalostus suljetussa prosessissa, jossa altistuminen ei ole todennäköistä, tai prosessit vastaavissa eristysolosuhteissa

PROC2 Kemiallinen tuotanto tai jalostus suljetussa jatkuvassa prosessissa, jossa esiintyy satunnaista hallittua altistumista, tai prosesseissa, joissa eristysolosuhteet ovat vastaavat

PROC3 Valmistus tai sekoitus kemianteollisuuden suljetuissa panosprosesseissa, joissa esiintyy satunnaista hallittua altistumista, tai prosessissa, jossa eristysolosuhteet ovat vastaavat

PROC4 Kemiallinen tuotanto, jossa on altistumisen mahdollisuus

PROC5 Sekoittaminen eräprosesseissa

PROC8a Aineen tai seoksen siirtäminen (panostus ja tyhjennys) yleistiloissa

PROC8b Aineen tai seoksen siirtäminen (panostus/tyhjennys) erillisissä tiloissa

PROC9 Aineen tai seoksen siirtäminen pieniin astioihin (erityinen täyttö- ja punnituslinja)

PROC14 Tabletointi, puristaminen, ekstruusio, pelletointi tai granulointi

PROC15 Käyttö laboratorioaineena

2. Muita käyttöehtoja, jotka vaikuttavat altistumiseen (Teollinen - Ympäristö 1)

Tuotteen ominaisuudet

Aine on monimutkainen UVCB-aine. Etupäässä hydrofobinen

käytetyt määrät

EU-tonnimäärän alueittain käytetty osuus: 0.1
 Alueellinen käyttömäärä (tonnes/vuosi): 6,800,000
 Alueellisen tonnimäärän paikallisesti käytetty osuus: 1
 alueen vuosittainen tonnimäärä (tonnia/vuosi): 30,000
 Suurin päivittäinen tonnisto alueella: 100 tonnes

Käytön tiheys ja kesto

Jatkuvat päästöt.
 Päästöpäivät: 300 päivät/vuotta

Formulointi sekä aineiden ja seosten (uudelleen)pakkaaminen - Teollinen käyttö

Muut käyttöolosuhteet, jotka koskevat ympäristön altistumista

Päästökerroin - ilma	Päästöjakeet ilmaan prosessista (tyypillisen paikalla tehdyn RMM:n jälkeen, noudattaen EU Solvent Emissions Directive -vaatimuksia):2.5E-02
Päästökerroin - vesi	Päästöjakeet jäteveteen prosessista (päästöt alussa ennen riskinhallintatoimenpiteitä):2.0E-04
Päästökerroin - maaperä	Päästöjakeet maaperään prosessista (päästöt alussa ennen riskinhallintatoimenpiteitä): 1.0E-04

Ympäristötekijät, joihin riskinhallinta ei vaikuta

Laimentaminen	Paikallinen makean veden laimennuskerroin:10 Paikallinen meriveden laimennuskerroin:100
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Riskinhallintatoimenpiteet

Hyvä käytäntö	Eri paikoissa toisistaan poikkeavien käytäntöjen takia vapautumisprosesseista tehdään varovaisia arvioita.
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ympäristövaarat liittyvät makean veden sedimentti

Jätevesipuhdistamon tyyppi	Kommunaali STP
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Tiedot jätevedenpuhdistamosta (STP)	Arvioitu aineen poistuminen jätevedestä talousjätevesipuhdistuksen kautta : 95.0% Poistotehokkuus (kokonaismäärä): 95.0% Suurin sallittu paikallinen tonnisto (MSafe) perustuen jätevesipuhdistuksen kokonaispoiston jälkeisiin päästöihin : 100 tonni/päivä Oletettu talousjätevedenpuhdistamon virtaus (m ³ /päivä): 2000.
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Paikalliset tekniset olosuhteet ja toimenpiteet ilmapäästöjen vähentämiseksi tai rajoittamiseksi

Ilma	Käsittele ilmaan tapahtuvat päästöt niin, että saadaan poistotehokkuus, joka on tyypillisesti 0%.
Vesi	Estä vuodot ja vuotojen aiheuttama maaperän/vesistön saastuminen. Vaaditaan jäteveden käsittely paikan päällä. Käsittele jätevedet paikan päällä (ennen vesistöön johtamista), että saavutetaan vaadittu puhdistusteho (%): 94.8 Johdettaessa jätevedet talousjätevedenpuhdistamolle vaaditaan jätevedenkäsittely paikan päällä, jonka tehokkuus on (%): 0.0
maaperä	Teollisuuslietettä ei saa päästää luonnolliseen maaperään. Puhdistamoliete tulisi polttaa, säilyttää tai käsitellä.

Ehdot ja toimenpiteet liittyen hävitettäväksi tarkoitetun jätteen ulkoiseen käsittelyyn

Jätteidenkäsittely	Ulkoinen jätteiden käsittely ja hävittäminen ottaen huomioon kyseiset paikalliset ja/tai kansalliset määräykset.
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Ehdot ja toimenpiteet liittyen jätteen ulkoiseen hyödyntämiseen

Talteenottomenetelmä	ulkoinen jätteiden vastaanotto ja sen uudelleen käyttö ottaen huomioon paikalliset ja/tai kansalliset määräykset.
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2. Muita käyttöehtoja, jotka vaikuttavat altistumiseen (Työntekijät - Terveys 1)

Tuotteen ominaisuudet

Olomuoto	Nestemäinen
höyrynpaine	Höyrynpaine 0.5 - 10 kPa STP.
Pitoisuustiedot	Kattaa aineosuudet tuotteessa 100%:n saakka (ellei toisin ilmoitettu).

Formulointi sekä aineiden ja seosten (uudelleen)pakkaaminen - Teollinen käyttö

Käytön tiheys ja kesto

Kattaa päivittäisen altistumisen saakka 8 tuntia (ellei toisin ilmoitettu).

muut käyttöolosuhteet, joilla on vaikutusta työntekijän altistumiseen

Ympäristö

Oletuksena on, että työpaikalla noudatetaan hyvää perushygieniaa.

Lämpötila

oletuksena on, ettei lämpötila ole yli 20 °C korkeampi kuin ympäröivä lämpötila (jos ei muuta mainittu).

Hallinnolliset toimenpiteet päästöjen ja altistumisen välttämiseksi/rajoittamiseksi

Hallinnolliset toimenpiteet

Yleiset toimenpiteet (ihoärsyttävät aineet) Vältä suoraa ihokosketusta tuotteeseen. Tunnista epäsuoralle ihokosketukselle alttiit alueet. Käytä (EN374 mukaisesti testattuja) käsineitä, jos käsikosketus aineeseen on todennäköistä. Poista epäpuhtaudet/roiskeet heti. Poista epäpuhtaudet/läikkynyt heti. Henkilökunta tulee peruskouluttaa siten, että altistuminen minimoidaan ja mahdollisesti esiintyvistä iho-ongelmista kerrotaan.

Riskinhallintatoimenpiteet

Yleinen altistuminen (suljetut järjestelmät)

Muita erityisiä toimenpiteitä ei ole tunnistettu.

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Yleinen altistuminen (avoimet järjestelmät)

Muita erityisiä toimenpiteitä ei ole tunnistettu.

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Prosessinäyte

Muita erityisiä toimenpiteitä ei ole tunnistettu.

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Laboratoriotoinninnat

Muita erityisiä toimenpiteitä ei ole tunnistettu.

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Irtotavaran siirto

Muita erityisiä toimenpiteitä ei ole tunnistettu.

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Sekoitustoiminnot

Muita erityisiä toimenpiteitä ei ole tunnistettu.

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manuaalinen

Astioista siirtäminen/kaataminen

Muita erityisiä toimenpiteitä ei ole tunnistettu.

.

Tynnyrien/erien siirrot

Muita erityisiä toimenpiteitä ei ole tunnistettu.

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Tabletointi, kompressio, ruiskupuristus tai pelletöinti

Muita erityisiä toimenpiteitä ei ole tunnistettu.

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Tynnyrien ja pienten pakkausten täyttäminen

Muita erityisiä toimenpiteitä ei ole tunnistettu.

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Laitteen puhdistus ja huolto

Muita erityisiä toimenpiteitä ei ole tunnistettu.

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Tuotteiden irtotavaravarastointi

Muita erityisiä toimenpiteitä ei ole tunnistettu.

3. arvio altistumisesta (Ympäristö 1)

Formulointi sekä aineiden ja seosten (uudelleen)pakkaaminen - Teollinen käyttö

Arviointimenetelmä

Käytetty Petrorisk-mallia. (Hydrocarbon Block Method)

Ilmaemissioiden maksimiriskisuhde 1.6E-02 Maksimaalinen riskisuhde jätevesiemissiille 9.7E-01

4. Ohjeet altistumisskenaarion soveltuvuuden tarkistamiseksi (Ympäristö 1)

ohjeet pohjautuvat oletettuihin käyttöolosuhteisiin, joiden ei tarvitse olla sovellettavissa kaikkialla; siksi sopivien riskienhallintatoimenpiteiden määrittämiseksi voidaan tarvita skaalausta. Jätevedelle vaadittu erotustehokkuus voidaan saavuttaa käyttäen paikan päällä olevaa tai vierasta teknologiaa, joko yksinään tai yhdistelmänä. Ilmalle vaadittu erotustehokkuus voidaan saavuttaa käyttäen paikan päällä olevaa teknologiaa, joko yksinään tai yhdistelmänä. muut yksityiskohdat skaalauksesta ja valvontateknologioista löytyvät SpERC-Factsheet -dokumentista (<http://cefc.org/en/reach-for-industries-libraries.html>).

3. arvio altistumisesta (Terveys 1)

Arviointimenetelmä

Työperäisen altistumisen arvioimiseksi on käytetty ECETOC TRA -työkalua, jos ei toisin mainittu.

Saatavilla olevat vaaratiedot eivät salli johdatusta DNEL:stä ärsyttävään vaikutukseen iholle. Turvallisen käytön päättelemiseksi on käytetty kvalitatiivista lähestymistapaa. Saatavilla olevat vaaratiedot eivät tue DNEL:n tarvetta muihin terveydellisiin vaikutuksiin. Käyttäjiä pyydetään huomioimaan kansalliset työpaikan raja-arvot sekä vastaavat arvot.

4. Ohjeet altistumisskenaarion soveltuvuuden tarkistamiseksi (Terveys 1)

Jos muita riskienhallintatoimenpiteitä/käyttöehtoja sovelletaan, tulisi käyttäjien varmistaa, että riskit rajoitetaan vähintään samalle tasolle.

Altistumisskenaario

Käyttö polttoaineena - Teollinen käyttö

Altistumisskenaarion identiteetti

Tuotenimi	Kerosines
Versionumero	2018
ES-numero	ES12a

1. Altistumisskenaarion otsikko

Päänimeke	Käyttö polttoaineena - Teollinen käyttö
Työstöala	Kattaa käytön polttoaine (tai polttoaine lisäaine), mukaan lukien toiminnot, jotka koskevat siirtoa, käyttöä, laitteiden huoltoa ja jätteen käsittelyä.

Ympäristö

Ympäristöpäästöluokat [ERC] ERC7 Aineiden teollinen käyttö suljetuissa järjestelmissä

Erityiset ympäristöpäästöluokat (SPERC) ESVOC SPERC 7.12a.v1

Työntekijä

Prosessikategoriat

PROC1 Kemiallinen tuotanto tai jalostus suljetussa prosessissa, jossa altistuminen ei ole todennäköistä, tai prosessit vastaavissa eristysolosuhteissa

PROC2 Kemiallinen tuotanto tai jalostus suljetussa jatkuvassa prosessissa, jossa esiintyy satunnaista hallittua altistumista, tai prosesseissa, joissa eristysolosuhteet ovat vastaavat

PROC3 Valmistus tai sekoitus kemianteollisuuden suljetuissa panosprosesseissa, joissa esiintyy satunnaista hallittua altistumista, tai prosessissa, jossa eristysolosuhteet ovat vastaavat

PROC8a Aineen tai seoksen siirtäminen (panostus ja tyhjennys) yleistiloissa

PROC8b Aineen tai seoksen siirtäminen (panostus/tyhjennys) erillisissä tiloissa

PROC16 Polttoaineiden käyttö

2. Muita käyttöehtoja, jotka vaikuttavat altistumiseen (Teollinen - Ympäristö 1)

Tuotteen ominaisuudet

Aine on monimutkainen UVCB-aine. Etupäässä hydrofobinen

käytetyt määrät

EU-tonnimäärän alueittain käytetty osuus: 0.1
 Alueellinen käyttömäärä (tonnes/vuosi): 1,600,000
 Alueellisen tonnimäärän paikallisesti käytetty osuus: 1
 alueen vuosittainen tonnimäärä (tonnia/vuosi): 1,500,000
 Suurin päivittäinen tonnisto alueella: 5000 tonnes

Käytön tiheys ja kesto

Jatkuvat päästöt.
 Päästöpäivät: 300 päivät/vuotta

Muut käyttöolosuhteet, jotka koskevat ympäristön altistumista

Päästökerroin - ilma	Päästäjakeet ilmaan prosessista (päästöt alussa ennen riskinhallintatoimenpiteitä): 5.0E-02
Päästökerroin - vesi	Päästäjakeet jäteveteen prosessista (päästöt alussa ennen riskinhallintatoimenpiteitä): 1.0E-05

Käyttö polttoaineena - Teollinen käyttö

Päästökerroin - maaperä Päästökäytökäet maaperään prosessista (päästöt alussa ennen riskinhallintatoimenpiteitä): 0

Ympäristötekijät, joihin riskinhallinta ei vaikuta

Laimentaminen Paikallinen makean veden laimennuskertoim:10
Paikallinen meriveden laimennuskertoim:100

Riskinhallintatoimenpiteet

Hyvä käytäntö Eri paikoissa toisistaan poikkeavien käytäntöjen takia vapautumisprosesseista tehdään varovaisia arvioita.

ympäristövaarat liittyvät makean veden sedimentti

Jätevesipuhdistamon tyyppi Kommunali STP

Tiedot jätevedenpuhdistamosta (STP) Arvioitu aineen poistuminen jätevedestä talousjätevesipuhdistuksen kautta : 95.0%
Poistotehokkuus (kokonaismäärä): 95%
Suurin sallittu paikallinen tonnisto (MSafe) perustuen jätevesipuhdistuksen kokonaispoiston jälkeisiin päästöihin : 2.1E+06 tonni/päivä
Oletettu talousjätevedenpuhdistamon virtaus (m³/päivä): 2000.

Paikalliset tekniset olosuhteet ja toimenpiteet ilmapäästöjen vähentämiseksi tai rajoittamiseksi

Ilma Käsittele ilmaan tapahtuvat päästöt niin, että saadaan poistotehokkuus, joka on tyypillisesti 95%.

Vesi Estä vuodot ja vuotojen aiheuttama maaperän/vesistön saastuminen. Käsittele jätevedet paikan päällä (ennen vesistöön johtamista), että saavutetaan vaadittu puhdistusteho (%): 94.4
Johdettaessa jätevedet talousjätevedenpuhdistamolle vaaditaan jätevedenkäsittely paikan päällä, jonka tehokkuus on (%): 0.0

maaperä Teollisuuslietettä ei saa päästää luonnolliseen maaperään. Puhdistamoliete tulisi polttaa, säilyttää tai käsitellä.

Ehdot ja toimenpiteet liittyen hävitettäväksi tarkoitetun jätteen ulkoiseen käsittelyyn

Jätteidenkäsittely säädetyillä jätekaasupäästöjen kontrolleilla rajoitetut polttopäästöt. alueellisessa altistumisarvioinnissa huomioituid polttopäästöt.

Ehdot ja toimenpiteet liittyen jätteen ulkoiseen hyödyntämiseen

Talteenottomenetelmä tätä ainetta kulutetaan käytön aikana, ja silloin ei muodostu ainejätettä.

2. Muita käyttöehtoja, jotka vaikuttavat altistumiseen (Työntekijät - Terveys 1)

Tuotteen ominaisuudet

Olomuoto Nestemäinen

höyrynpaine Höyrynpaine 0.5 - 10 kPa STP.

Pitoisuustiedot Kattaa aineosuudet tuotteessa 100%:n saakka (ellei toisin ilmoitettu).

Käytön tiheys ja kesto

Kattaa päivittäisen altistumisen saakka 8 tuntia (ellei toisin ilmoitettu).

muut käyttöolosuhteet, joilla on vaikutusta työntekijän altistumiseen

Ympäristö Oletuksena on, että työpaikalla noudatetaan hyvää perushygieniaa.

Lämpötila oletuksena on, ettei lämpötila ole yli 20 °C korkeampi kuin ympäröivä lämpötila (jos ei muuta mainittu).

Hallinnolliset toimenpiteet päästöjen ja altistumisen välttämiseksi/rajoittamiseksi

Käyttö polttoaineena - Teollinen käyttö

Hallinnolliset toimenpiteet

Yleiset toimenpiteet (ihoärsyttävät aineet) Vältä suoraa ihokosketusta tuotteeseen. Tunnista epäsuoralle ihokosketukselle alttiit alueet. Käytä (EN374 mukaisesti testattuja) käsineitä, jos käsikosketus aineeseen on todennäköistä. Poista epäpuhtaudet/roiskeet heti. Poista epäpuhtaudet/läikkynyt heti. Henkilökunta tulee peruskouluttaa siten, että altistuminen minimoidaan ja mahdollisesti esiintyvistä iho-ongelmista kerrotaan.

Riskinhallintatoimenpiteet

Yleinen altistuminen (suljetut järjestelmät)
Muita erityisiä toimenpiteitä ei ole tunnistettu.

Käyttö polttoaineena
(suljetut järjestelmät)
Muita erityisiä toimenpiteitä ei ole tunnistettu.

Irtotavaran siirto
Muita erityisiä toimenpiteitä ei ole tunnistettu.

Tynnyrien/erien siirrot
Muita erityisiä toimenpiteitä ei ole tunnistettu.

Laitteen puhdistus ja huolto
Muita erityisiä toimenpiteitä ei ole tunnistettu.

Tuotteiden irtotavaravarastointi
Muita erityisiä toimenpiteitä ei ole tunnistettu.

3. arvio altistumisesta (Ympäristö 1)

Arviointimenetelmä

Käytetty Petrorisk-mallia. (Hydrocarbon Block Method)

Ilmaemissioiden maksimiriskisuhde 2.9E-02 Maksimaalinen riskisuhde jätevesiemissioille 9.0E-01

4. Ohjeet altistumisskenaarion soveltuvuuden tarkistamiseksi (Ympäristö 1)

ohjeet pohjautuvat oletettuihin käyttöolosuhteisiin, joiden ei tarvitse olla sovellettavissa kaikkialla; siksi sopivien riskienhallintatoimenpiteiden määrittämiseksi voidaan tarvita skaalausta. Jätevedelle vaadittu erotustehokkuus voidaan saavuttaa käyttäen paikan päällä olevaa tai vierasta teknologiaa, joko yksinään tai yhdistelmänä. Ilmalle vaadittu erotustehokkuus voidaan saavuttaa käyttäen paikan päällä olevaa teknologiaa, joko yksinään tai yhdistelmänä. muut yksityiskohdat skaalauksesta ja valvontateknologioista löytyvät SpERC-Factsheet -dokumentista (<http://cefc.org/en/reach-for-industries-libraries.html>).

3. arvio altistumisesta (Terveys 1)

Arviointimenetelmä

Työperäisen altistumisen arvioimiseksi on käytetty ECETOC TRA -työkalua, jos ei toisin mainittu.

Saatavilla olevat vaaratiedot eivät salli johdatusta DNEL:stä ärsyttävään vaikutukseen iholle. Turvallisen käytön päättämiseksi on käytetty kvalitatiivista lähestymistapaa. Saatavilla olevat vaaratiedot eivät tue DNEL:n tarvetta muihin terveydellisiin vaikutuksiin. Käyttäjää pyydetään huomioimaan kansalliset työpaikan raja-arvot sekä vastaavat arvot.

4. Ohjeet altistumisskenaarion soveltuvuuden tarkistamiseksi (Terveys 1)

Jos muita riskinhallintatoimenpiteitä/käyttöehtoja sovelletaan, tulisi käyttäjien varmistaa, että riskit rajoitetaan vähintään samalle tasolle.

Altistumisskenaario

Käyttö polttoaineena - Ammattikäyttö

Altistumisskenaarion identiteetti

Tuotenimi	Kerosines
Versionumero	2018
ES-numero	ES12b

1. Altistumisskenaarion otsikko

Päänimeke	Käyttö polttoaineena - Ammattikäyttö
Työstöala	Kattaa käytön polttoaine (tai polttoaine lisäaine), mukaan lukien toiminnot, jotka koskevat siirtoa, käyttöä, laitteiden huoltoa ja jätteen käsittelyä.

Ympäristö

Ympäristöpäästöluokat [ERC]	ERC9a Käytönesteiden laaja sisäkäyttö ERC9b Käytönesteiden laaja ulkokäyttö
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Erityiset ympäristöpäästöluokat (SPERC)	ESVOC SPERC 9.12b.v1
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Työntekijä

Prosessikategoriat	PROC1 Kemiallinen tuotanto tai jalostus suljetussa prosessissa, jossa altistuminen ei ole todennäköistä, tai prosessit vastaavissa eristysolosuhteissa PROC2 Kemiallinen tuotanto tai jalostus suljetussa jatkuvassa prosessissa, jossa esiintyy satunnaista hallittua altistumista, tai prosesseissa, joissa eristysolosuhteet ovat vastaavat PROC3 Valmistus tai sekoitus kemianteollisuuden suljetuissa panosprosesseissa, joissa esiintyy satunnaista hallittua altistumista, tai prosessissa, jossa eristysolosuhteet ovat vastaavat PROC8a Aineen tai seoksen siirtäminen (panostus ja tyhjennys) yleistiloissa PROC8b Aineen tai seoksen siirtäminen (panostus/tyhjennys) erillisissä tiloissa PROC16 Polttoaineiden käyttö
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2. Muita käyttöehtoja, jotka vaikuttavat altistumiseen (Teollinen - Ympäristö 1)

Tuotteen ominaisuudet

Aine on monimutkainen UVCB-aine. Etupäässä hydrofobinen

käytetyt määrät

EU-tonnimäärän alueittain käytetty osuus: 0.1
Alueellinen käyttömäärä (tonnes/vuosi): 4,600,000
Alueellisen tonnimäärän paikallisesti käytetty osuus: 1
alueen vuosittainen tonnimäärä (tonnia/vuosi): 2300
Suurin päivittäinen tonnisto alueella: 6.4 tonnes

Käytön tiheys ja kesto

Jatkuvat päästöt.
Päästöpäivät: 365 päivät/vuotta

Muut käyttöolosuhteet, jotka koskevat ympäristön altistumista

Päästökerroin - ilma	Päästökäytöt ilmaan laajasti levittävistä käytöstä (vain alueellinen): 1.0E-03
Päästökerroin - vesi	Päästökäytöt jäteveteen laajasti levittävistä käytöstä: 1.0E-05

Käyttö polttoaineena - Ammattikäyttö

Päästökerroin - maaperä Päästökäytet maaperään laajasti levittävästä käytöstä (vain alueellinen): 1.0E-05

Ympäristötekijät, joihin riskinhallinta ei vaikuta

Laimentaminen Paikallinen makean veden laimennuskertoimen:10
Paikallinen meriveden laimennuskertoimen:100

Riskinhallintatoimenpiteet

Hyvä käytäntö Eri paikoissa toisistaan poikkeavien käytäntöjen takia vapautumisprosesseista tehdään varovaisia arvioita.

ympäristövaarat liittyvät makea vesi

Jätevesipuhdistamon tyyppi Kommunali STP

Tiedot jätevedenpuhdistamosta (STP) Arvioitu aineen poistuminen jätevedestä talousjätevesipuhdistuksen kautta : 95.0%
Poistotehokkuus (kokonaismäärä): 95.0%
Suurin sallittu paikallinen tonnistot (MSafe) perustuen jätevesipuhdistuksen kokonaispoiston jälkeisiin päästöihin : 2.9E+05 kg/päivä
Oletettu talousjätevedenpuhdistamon virtaus (m³/päivä): 2000.

Paikalliset tekniset olosuhteet ja toimenpiteet ilmapäästöjen vähentämiseksi tai rajoittamiseksi

Ilma Käsittele ilmaan tapahtuvat päästöt niin, että saadaan poistotehokkuus, joka on tyypillisesti N/A%.

Vesi Estä vuodot ja vuotojen aiheuttama maaperän/vesistön saastuminen. Vaaditaan jäteveden käsittely paikan päällä. Käsittele jätevedet paikan päällä (ennen vesistöön johtamista), että saavutetaan vaadittu puhdistusteho (%): 0.0 Johdettaessa jätevedet talousjätevedenpuhdistamolle vaaditaan jätevedenkäsittely paikan päällä, jonka tehokkuus on (%): 0.0

maaperä Teollisuuslietettä ei saa päästää luonnolliseen maaperään. Puhdistamoliete tulisi polttaa, säilyttää tai käsitellä.

Ehdot ja toimenpiteet liittyen hävitettäväksi tarkoitetun jätteen ulkoiseen käsittelyyn

Jätteidenkäsittely säädetyillä jätekaasupäästöjen kontrolleilla rajoitetut polttopäästöt. alueellisessa altistumisarvioinnissa huomioidut polttopäästöt.

Ehdot ja toimenpiteet liittyen jätteen ulkoiseen hyödyntämiseen

Talteenottomenetelmä tätä ainetta kulutetaan käytön aikana, ja silloin ei muodostu ainejätettä.

2. Muita käyttöehtoja, jotka vaikuttavat altistumiseen (Työntekijät - Terveys 1)

Tuotteen ominaisuudet

Olomuoto Nestemäinen

höyrynpaine Höyrynpaine 0.5 - 10 kPa STP.

Pitoisuustiedot Kattaa aineosuudet tuotteessa 100%:n saakka (ellei toisin ilmoitettu).

Käytön tiheys ja kesto

Kattaa päivittäisen altistumisen saakka 8 tuntia (ellei toisin ilmoitettu).

muut käyttöolosuhteet, joilla on vaikutusta työntekijän altistumiseen

Ympäristö Oletuksena on, että työpaikalla noudatetaan hyvää perushygieniaa.

Lämpötila oletuksena on, ettei lämpötila ole yli 20 °C korkeampi kuin ympäröivä lämpötila (jos ei muuta mainittu).

Käyttö polttoaineena - Ammattikäyttö

Hallinnolliset toimenpiteet päästöjen ja altistumisen välttämiseksi/rajoittamiseksi

Hallinnolliset toimenpiteet Yleiset toimenpiteet (ihoärsyttävät aineet) Vältä suoraa ihokosketusta tuotteeseen. Tunnista epäsuoralle ihokosketukselle alttiit alueet. Käytä (EN374 mukaisesti testattuja) käsineitä, jos käsikosketus aineeseen on todennäköistä. Poista epäpuhtaudet/roiskeet heti. Poista epäpuhtaudet/läikkynyt heti. Henkilökunta tulee peruskouluttaa siten, että altistuminen minimoidaan ja mahdollisesti esiintyvistä iho-ongelmista kerrotaan.

Riskinhallintatoimenpiteet

Yleinen altistuminen (suljetut järjestelmät)
Muita erityisiä toimenpiteitä ei ole tunnistettu.

·
Käyttö polttoaineena
(suljetut järjestelmät)
Muita erityisiä toimenpiteitä ei ole tunnistettu.

·
Irtotavaran siirto
Muita erityisiä toimenpiteitä ei ole tunnistettu.

·
Astioista siirtäminen/kaataminen
Muita erityisiä toimenpiteitä ei ole tunnistettu.

·
Laitteen puhdistus ja huolto
Muita erityisiä toimenpiteitä ei ole tunnistettu.

·
Tuotteiden irtotavaravarastointi
Muita erityisiä toimenpiteitä ei ole tunnistettu.

3. arvio altistumisesta (Ympäristö 1)

Arviointimenetelmä Käytetty Petrorisk-mallia. (Hydrocarbon Block Method)
Ilmaemissioiden maksimiriskisuhde 4.4E-04 Maksimaalinen riskisuhde jätevesiemissioille 3.4E-03

4. Ohjeet altistumisskenaarion soveltuvuuden tarkistamiseksi (Ympäristö 1)

ohjeet pohjautuvat oletettuihin käyttöolosuhteisiin, joiden ei tarvitse olla sovellettavissa kaikkialla; siksi sopivien riskienhallintatoimenpiteiden määrittämiseksi voidaan tarvita skaalausta. Jätevedelle vaadittu erotustehokkuus voidaan saavuttaa käyttäen paikan päällä olevaa tai vierasta teknologiaa, joko yksinään tai yhdistelmänä. Ilmalle vaadittu erotustehokkuus voidaan saavuttaa käyttäen paikan päällä olevaa teknologiaa, joko yksinään tai yhdistelmänä. muut yksityiskohdat skaalauksesta ja valvontateknologioista löytyvät SpERC-Factsheet -dokumentista (<http://cefc.org/en/reach-for-industries-libraries.html>).

3. arvio altistumisesta (Terveys 1)

Arviointimenetelmä Työperäisen altistumisen arvioimiseksi on käytetty ECETOC TRA -työkalua, jos ei toisin mainittu.
Saatavilla olevat vaaratiedot eivät salli johdatusta DNEL:stä ärsyttävään vaikutukseen iholle. Turvallisen käytön pääättelemiseksi on käytetty kvalitatiivista lähestymistapaa. Saatavilla olevat vaaratiedot eivät tue DNEL:n tarvetta muihin terveydellisiin vaikutuksiin. Käyttäjää pyydetään huomioimaan kansalliset työpaikan raja-arvot sekä vastaavat arvot.

4. Ohjeet altistumisskenaarion soveltuvuuden tarkistamiseksi (Terveys 1)

Käyttö polttoaineena - Ammattikäyttö

Jos muita riskinhallintatoimenpiteitä/käyttöehtoja sovelletaan, tulisi käyttäjien varmistaa, että riskit rajoitetaan vähintään samalle tasolle.

Issue Date: 31-Jan-2002

Revision Date: 21-Apr-2022

Version 1

1. IDENTIFICATION

Product Identifier

Product Name Leak-Tec 372E

Other means of identification

SDS # AGC-029

Product Code 372E

Other Information Package Type: Poly bottles, 5 gallon pails, 55 gallon drums.

Recommended use of the chemical and restrictions on use

Recommended Use Compressed air/stable gases leak detection fluid.

Details of the supplier of the safety data sheet

Manufacturer Address

AMERICAN GAS & CHEMICAL COMPANY, LTD
220 Pegasus Avenue
Northvale NJ 07647

Emergency Telephone Number

Company Phone Number Phone: 201-767-7300 Fax: 201-767-1741

Emergency Telephone (24 hr) INFOTRAC 1-352-323-3500 (International)

1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Appearance Yellow-green liquid

Physical State Liquid

Odor Odorless

Classification

This chemical does not meet the hazardous criteria set forth by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). However, this Safety Data Sheet (SDS) contains valuable information critical to the safe handling and proper use of this product. This SDS should be retained and available for employees and other users of this product.

Unknown Acute Toxicity

0.21% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

The product contains no substances which, at their given concentration, are considered to be hazardous to health.

4. FIRST-AID MEASURES

First Aid Measures

Eye Contact Rinse thoroughly with plenty of water, also under the eyelids. If eye irritation persists: Get medical advice/attention.

Skin Contact Wash with soap and water.

Inhalation Remove to fresh air.

Ingestion Induce vomiting, but only if victim is fully conscious. Call a physician.

Most important symptoms and effects

Symptoms Direct contact with eyes may cause temporary irritation.

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.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Non-flammable solution.

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. Use water spray to keep fire-exposed containers cool.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Use personal protective equipment as required.

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 Small spills may be permitted to be flushed to a sanitary sewer. Check with local authorities before proceeding.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Avoid prolonged or repeated contact with skin. Do not get in eyes.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

Incompatible Materials None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

No exposure limits noted for ingredient(s)

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 Safety glasses.

Skin and Body Protection Non-absorbent 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	Odorless
Appearance	Yellow-green liquid	Odor Threshold	Not determined
Color	Yellow-green		
Property	Values	Remarks • Method	
pH	8.0-9.0		
Melting Point/Freezing Point	Not determined		
Boiling Point/Boiling Range	100°C / 212°F		
Flash Point	None		
Evaporation Rate	<1	(Water = 1)	
Flammability (Solid, Gas)	n/a-liquid		

Upper Flammability Limits	None	
Lower Flammability Limit	None	
Vapor Pressure	17.5 mm Hg	@ 20°C (68°F)
Vapor Density	>1	(Air=1)
Specific Gravity	1.00-1.02	
Water Solubility	Soluble in water	
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.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid

Keep out of reach of children.

Incompatible Materials

None known based on information supplied.

Hazardous Decomposition Products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact	Avoid contact with eyes.
Skin Contact	Avoid contact with skin.
Inhalation	Avoid breathing vapors or mists.
Ingestion	Do not taste or swallow.

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 This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Numerical measures of toxicity

Not determined

Unknown Acute Toxicity 0.21% of the mixture consists of ingredient(s) of unknown toxicity.

12. ECOLOGICAL INFORMATION

Ecotoxicity

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Persistence/Degradability

Biodegradability is 90% or better as determined by the Semi-Continuous Activated Sludge method.

Bioaccumulation

Not determined.

Mobility

Not determined

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

<u>DOT</u>	Not regulated
<u>IATA</u>	Not regulated
<u>IMDG</u>	Not regulated

15. REGULATORY INFORMATION**International Inventories**

TSCA	Listed
-------------	--------

Legend:*TSCA - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDSL - 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 313**

Not determined

US State Regulations**U.S. State Right-to-Know Regulations**

Not determined

16. OTHER INFORMATION

<u>NFPA</u>	Health Hazards	Flammability	Instability	Special Hazards
	0	0	0	Not determined
<u>HMIS</u>	Health Hazards	Flammability	Physical Hazards	Personal Protection
	0	0	0	B

Issue Date:	31-Jan-2002
Revision Date:	21-Apr-2022
Revision Note:	3-Year Update

Disclaimer

Information in the SDS is provided in good faith, but we assume no liability for its use or misuse. It is furnished without any warranty of merchantability or any other warranty, express or implied. We shall not be liable for any claims, losses or damages of any vendee or third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, however they arise. Users must make their own investigations to determine suitability.

End of Safety Data Sheet

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 05/26/2018

Reviewed on 05/26/2018

1 Identification

- **Product Identifier**

- **Trade Name: Lectroetch Electrolyte 117A**

- **Relevant identified uses of the substance or mixture and uses advised against:**

- **Product Description:**

Etching electrolyte for Aluminum Bronze, Bronze, Phosphor Bronze-Brass, Brass Electroplate, Cadmium Electroplate, Copper, Copper Electroplate, Silver, Silver Plate, Tin, Tin Plate, Zinc, Zinc Plating, their alloys and Electro-Galvanizing.

- **Application of the substance / the mixture:** Electrolytic etching solution

- **Details of the Supplier of the Safety Data Sheet:**

- **Manufacturer/Supplier:**

The Lectroetch Company
5342 Evergreen Parkway
Sheffield Village, OH 44054 USA
Phone: 440-934-1249

- **Emergency telephone number:** 440-934-1249

* 2 Hazard(s) Identification

- **Classification of the substance or mixture:**



GHS07

Eye Irrit. 2A H319 Causes serious eye irritation.

- **Label elements:**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms:**



GHS07

- **Signal word:** Warning

- **Hazard statements:**

H319 Causes serious eye irritation.

- **Precautionary statements:**

P264 Wash thoroughly after handling.

P280 Wear eye protection / 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.

P337+P313 If eye irritation persists: Get medical advice/attention.

- **Unknown acute toxicity:**

This value refers to knowledge of known, established toxicological or ecotoxicological values.

1.2 % of the mixture consists of component(s) of unknown toxicity.

- **Classification system:** NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme

- **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 0

Reactivity = 0

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Issue date 05/26/2018

Reviewed on 05/26/2018

Trade Name: Lectroetch Electrolyte 117A**· HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	0	Fire = 0
REACTIVITY	0	Physical Hazard = 0

· Hazard(s) not otherwise classified (HNOC): None known*** 3 Composition/Information on Ingredients****· Chemical characterization: Mixtures****· Description:** Mixture of substances listed below with non-hazardous additions.**· Dangerous Components:**

Trade Secret	☠ Ox. Sol. 3, H272; ⚠ Eye Irrit. 2A, H319	5-10%
Trade Secret	⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319	≤2.5%

· Additional information:

The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of §1910.1200 of 29 CFR 1910.1200 Trade Secrets.

4 First-Aid Measures**· Description of first aid measures****· After inhalation:** This product is not expected to present an inhalation hazard at ambient conditions.**· After skin contact:** Generally the product does not irritate the skin.**· After eye contact:**

Rinse opened eye for at least 15 minutes under running water. If symptoms persist, consult a doctor.

· After swallowing: If swallowed and symptoms occur, consult a doctor.**· Information for doctor****· Most important symptoms and effects, both acute and delayed:** No further relevant information available.**· Indication of any immediate medical attention and special treatment needed:**

No further relevant information available.

*** 5 Fire-Fighting Measures****· Extinguishing media****· Suitable extinguishing agents:** Use fire fighting measures that suit the environment.**· For safety reasons unsuitable extinguishing agents:** No further relevant information.**· Special hazards arising from the substance or mixture:**

If incinerated, product may release toxic gases including: Carbon Oxides, Nitrogen Oxides (NOx), Sulfur Oxides, Hydrogen Chloride gas, Sodium Oxides and Calcium Oxides.

· Advice for firefighters**· Special protective equipment for firefighters:**

As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.

*** 6 Accidental Release Measures****· Personal precautions, protective equipment and emergency procedures:** Not required.**· Environmental precautions:** Do not allow to enter sewers/surface or ground water.**· Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (i.e. sand, diatomite, acid binders, universal binders, sawdust).

Dispose of the collected material according to regulations.

· Reference to other sections:

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

(Contd. on page 3)

Safety Data Sheet (SDS)

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Trade Name: Lectroetch Electrolyte 117A

See Section 13 for disposal information.

Protective Action Criteria for Chemicals**PAC-1:**

None of the ingredients are listed.

PAC-2:

None of the ingredients are listed.

PAC-3:

None of the ingredients are listed.

7 Handling and Storage**Handling**

- **Precautions for safe handling:** No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.

Conditions for safe storage, including any incompatibilities

Store away from strong oxidizing agents and strong reducing agents.

Storage

- **Requirements to be met by storerooms and receptacles:** Store in the original container.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s):** No further relevant information available.

8 Exposure Controls/Personal Protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters:**
All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94). Use local exhaust at filling zones and where leakage and dust formation is probable. Use mechanical (general) ventilation for storage areas. Use appropriate ventilation as required to keep Exposure Limits in Air below TLV & PEL limits.
- **Components with occupational exposure limits:**
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 that were valid during the creation of this SDS were used as basis.
- **Exposure controls:**
- **Personal protective equipment**
- **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 and wash before reuse.
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

- **Material of gloves:** Not applicable.
- **Penetration time of glove material:** Not applicable.

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Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 05/26/2018

Reviewed on 05/26/2018

Trade Name: Lectroetch Electrolyte 117A· **Eye protection:**

Tightly sealed goggles

* **9 Physical and Chemical Properties**· **Information on basic physical and chemical properties**· **General Information**· **Appearance:**

Form: Liquid
Color: Clear, colorless

· **Odour:** Slight· **Odor threshold:** Not determined.· **pH-value @ 20 °C (68 °F):** 7.2· **Change in condition****Melting point/Melting range:** Not determined.**Boiling point/Boiling range:** ≥100 °C (≥212 °F)· **Flash point:** None· **Flammability (solid, gaseous):** Not applicable.· **Ignition temperature:** Not applicable· **Decomposition temperature:** Not determined.· **Auto igniting:** Product is not self-igniting.· **Danger of explosion:** Product does not present an explosion hazard.· **Explosion limits:****Lower:** 0.0 Vol %**Upper:** 0.0 Vol %· **Vapor pressure @ 20 °C (68 °F):** ≤23 hPa (≤17.3 mm Hg)· **Density @ 20 °C (68 °F):** 1.0662 g/cm³ (8.8974 lbs/gal)· **Relative density:** Not determined.· **Vapor 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:** Not determined.**Kinematic:** Not determined.· **Solvent content:****Water:** 85.8 %**VOC content:** 0.00 %**Solids content:** 13.0 %· **Other information:** No further relevant information available.

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Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 05/26/2018

Reviewed on 05/26/2018

Trade Name: Lectroetch Electrolyte 117A*** 10 Stability and Reactivity**

- **Reactivity:** No further relevant information available.
- **Chemical stability:** Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** No further relevant information available.
- **Incompatible materials:** Strong oxidizing agents and strong reducing agents.
- **Hazardous decomposition products:**
Carbon Oxides, Nitrogen Oxides (NOx), Sulfur Oxides, Hydrogen Chloride gas, Sodium Oxides and Calcium Oxides.

*** 11 Toxicological Information**

- **Information on toxicological effects:**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

Trade Secret

Oral LD50 3,900 mg/kg mg/kg (Rat)

- **Primary irritant effect:**
- **On the skin:** Irritant to skin and mucous membranes.
- **On the eye:** Irritating effect.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

- **Carcinogenic categories:**

- **IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

- **NTP (National Toxicology Program):**

None of the ingredients are listed.

- **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

*** 12 Ecological Information**

- **Toxicity:** The hazards for the aquatic environment are unknown.
- **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:**
- **General notes:**
Do not allow undiluted product or product that has not been neutralized 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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Safety Data Sheet (SDS)

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Issue date 05/26/2018

Reviewed on 05/26/2018

Trade Name: Lectroetch Electrolyte 117A

- **Other adverse effects:** No further relevant information available.

*** 13 Disposal Considerations**

- **Waste treatment methods**
- **Recommendation:**
Observe all federal, state and local environmental regulations when disposing of this material.
- **Uncleaned packaging**
- **Recommendation:** Dispose of packaging according to regulations on the disposal of packagings.

14 Transport Information

- **UN-Number:**
- **DOT, ADR/ADN, ADN, IMDG, IATA** Non-Regulated Material
- **UN proper shipping name:**
- **DOT, ADR/ADN, ADN, IMDG, IATA** Non-Regulated Material
- **Transport hazard class(es):**
- **DOT, ADR/ADN, ADN, IMDG, IATA**
- **Class:** Non-Regulated Material
- **Packing group:**
- **DOT, ADR/ADN, IMDG, IATA** Non-Regulated Material
- **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.
- **UN "Model Regulation":** Non-Regulated Material

*** 15 Regulatory Information**

- **Safety, health and environmental regulations/legislation specific for the substance or mixture:**
- **SARA (Superfund Amendments and Reauthorization):**

· Section 355 (extremely hazardous substances):
--

None of the ingredients are listed.

· Section 313 (Specific toxic chemical listings):
--

Trade Secret

· TSCA (Toxic Substances Control Act):

7732-18-5 Water, distilled water, deionized water

· TSCA new (21st Century Act) (Substances not listed)
--

Trade Secret

Trade Secret

· California Proposition 65:

· 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.

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Reviewed on 05/26/2018

Trade Name: Lectroetch Electrolyte 117A

• New Jersey Right-to-Know List:
None of the ingredients are listed.
• New Jersey Special Hazardous Substance List:
None of the ingredients are listed.
• Pennsylvania Right-to-Know List:
None of the ingredients are listed.
• Pennsylvania Special Hazardous Substance List:
None of the ingredients are listed.
• Carcinogenic categories:
• EPA (Environmental Protection Agency):
None of the ingredients are listed.
• TLV (Threshold Limit Value established by ACGIH):
None of the ingredients are listed.
• NIOSH-Ca (National Institute for Occupational Safety and Health):
None of the ingredients are listed.

• **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

• **Hazard pictograms:**

GHS07

• **Signal word:** Warning• **Hazard statements:**

H319 Causes serious eye irritation.

• **Precautionary statements:**

P264 Wash thoroughly after handling.

P280 Wear eye protection / 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.

P337+P313 If eye irritation persists: Get medical advice/attention.

• **National regulations:**

None of the ingredients are listed.

• **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.**16 Other Information**

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

• **Date of preparation / last revision:** 05/26/2018 / 1• **Abbreviations and acronyms:**

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road

ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

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Reviewed on 05/26/2018

Trade Name: Lectroetch Electrolyte 117A

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)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety and Health
OSHA: Occupational Safety & Health Administration
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Ox. Sol. 3: Oxidizing solids – Category 3
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

• *** Data compared to the previous version altered.**

SDS created by MSDS Authoring Services www.msdsauthoring.com +1-877-204-9106

Lectroetch Electrolyte 2611A

SECTION 1: IDENTIFICATION

Product Identifier:	Lectroetch Electrolyte 2611A
Other Means of Identification:	N/A
Recommended Use:	Electrolytic Etching Solution
Restrictions on Use:	None known
Supplier Identifier:	Sterling Marking Products Inc., 349 Ridout Street North, London, ON Canada N6A 2N8 1-800-265-5957, 519-434-5785
Emergency Phone Number:	CANUTEC (613) 966-6666, Cellular *666

SECTION 2: HAZARD IDENTIFICATION

Classified according to Canada's Hazardous Products Regulations (WHMIS 2015) and the U.S. Hazardous Communication Standard (HCS 2012)

Classification

Respiratory Sensitivity 1, H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Mutagenicity 2, H341 - Suspected of causing genetic defects.

Carcinogenicity 1B, H350 - May cause cancer.

Reproductive 1B, H360 - May damage fertility or the unborn child.

Skin Corrosive 1A, H314 - Causes severe skin burns and eye damage.

Aquatic Acute 1, H400 - Very toxic to aquatic life.

Aquatic Chronic 1, H410 - Very toxic to aquatic life with long lasting effects.

Eye Irritation – Category 2A, H319 - Causes serious eye irritation.

Skin Sensitivity – Category 2B, H317 - May cause an allergic skin reaction.

Label Elements:**Signal Word: Danger****Hazard Determining Components of Labelling:**

Cobalt Nitrate

Hazard Statements:

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Suspected of causing genetic defects.

May cause cancer.

May damage fertility or the unborn child.

Causes severe skin burns and eye damage.

Very toxic to aquatic life.

Very toxic to aquatic life with long lasting effects.

Causes serious eye irritation.

May cause an allergic skin reaction.

Precautionary Statements:

Keep container tightly closed

Wear protective gloves and eye protection

Wash hands and skin thoroughly after handling

Take off contaminated clothing and wash it before reuse. Contaminated clothing must not be removed from the workplace.

Avoid release to the environment.

Do not breathe dust or mists.

Wear respiratory protection.

If in eyes, 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.

If ingested, there is no specific antidote. Do not induce vomiting. Seek prompt medical attention.

If on skin, remove all contaminated clothing and rinse with water/shower.

7% of the mixture consists of ingredients of unknown toxicity.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Description: Mixture of substances listed below with non-hazardous additions

Dangerous Components:		
RTECS: EV 9800000	Trade Secret ⚠ Eye Irritant 2, H319	2% - 12%
CAS: 10141-05-6	Cobalt Nitrate ⚠ Respiratory Sensitivity 1, H334; Mutagenity 2, H341; Carcinogenity 1B, H350; Reproductive 1B, H360 ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410 ⚠ Skin Sensitivity – Category 2B, H317	2% - 12%
RTECS: BP 4550000	Trade Secret ⚠ Acute Toxicity 4, H302; Eye Irritant 2A, H319	2% - 12%
CAS: 77-92-9 RTECS: GE 7350000	Citric Acid ⚠ Eye Irritant 2A, H319	≤2.5%

Note: All ingredients are listed on the Domestic Substances List (DSL) and the Toxic Substances Control Act (TSCA) list or are exempt from requirements under 40 CFR 720.30.

SECTION 4: FIRST AID MEASURES

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.

Skin Contact: Immediately wash affected area with soap and water and rinse thoroughly. Remove contaminated clothing and shoes. Get medical attention if irritation occurs. Remove contaminated clothing and laundry before reuse

Ingestion: Do **NOT** induce vomiting. Never give anything by mouth to an unconscious or convulsing person. Give copious amount of water and fresh air. Seek immediate medical attention. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

Notes to Physician: No specific antidote. Treatment based on sound judgement of physician and individual reactions of patient.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media.

Suitable Extinguishing Media:

Water fog or fine spray, carbon dioxide, dry chemical, foam. Alcohol resistant foams (ATC type) are preferred if available. General purpose synthetic foams (including AFFF) or protein foams may function but much less effectively.

Specific Hazards arising from the Product:

Hazardous combustion products

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

Unusual Fire & Explosion Hazards:

Take precautionary measures against static discharges.

Specific Hazards:

Fire creates: Toxic gases/vapours/fumes of: Carbon monoxide (CO). Carbon dioxide (CO₂), Calcium Oxides, Cobalt/Cobalt Oxides, Hydrogen Chloride gas, Nitrogen Oxides (NO_x), Sulfur Oxides and Sodium Oxides.

Hazardous Decomposition/Combustion Materials (under fire conditions):

The smoke may contain unidentified toxic and/or irritating compounds. Carbon monoxide. Carbon dioxide.

Special Protective Equipment:

Fire fighters should wear full protective clothing including self-contained breathing equipment.

Special Fire Fighting Procedures:

Keep run-off water out of sewers and water sources. Dike for water control. If risk of water pollution occurs, notify appropriate authorities.

Use water to keep fire exposed containers cool and disperse vapours. Move container from fire area if it can be done without risk.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures:

Wear appropriate protective equipment. Avoid contact with skin and eyes.

Environmental Precautionary Measures:

Prevent entry into sewers or streams, dike if needed. Dilute with plenty of water.

Procedure for Clean-up:

Small spills can be flushed with large amounts of water; larger spills should be collected for disposal. Absorb with an inert dry material and place in an appropriate waste disposal container.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling:

None required other than normal safe material handling procedures.

Conditions for Safe Storage:

Keep containers tightly closed. Store away from strong acids, strong bases and strong oxidizing agents. Store in accordance with good industrial practice.

SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

Appropriate Engineering Controls:

Personal Protective Equipment

Respiratory Protection:

Gloves: Use gloves chemically resistant to this material. Examples of acceptable glove barrier materials include nitrile or latex gloves. **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.

Skin Protection: The selection of personal protective equipment varies depending upon conditions of use. Skin contact should be prevented through use of suitable protective clothing, gloves and footwear, selected for conditions of use and exposure potential. Consideration must be given both to durability as well as permeation resistance. Impervious clothing. Impervious boots.

Eyes: Chemical goggles; also wear a face shield if splashing hazard exists.

Other Personal Protection Data: Ensure that eyewash stations and safety showers are proximal to the work station location. Keep away from foodstuffs, beverages and feed. Immediately remove all soiled clothing and wash before reuse. Wash hands before breaks and at the end of work. Store protective clothing separately. Avoid contact with the eyes and skin.

Breathing equipment: is not required.

Description: Mixture of substances listed below with non-hazardous additions

Components with Occupational Exposure Limits:		
CAS Number	Name	Exposure Limits
RTECS: EV 9800000	Trade Secret	REL Short-Term Value: 20 mg/m ³ Long-Term Value: 10 mg/m ³ TLV Short-Term Value: 20 mg/m ³ Long-Term Value: 20 mg/m ³
CAS: 10141-05-6	Cobalt Nitrate	PEL Long-term Value: 0.1* mg/m ³ as Co; * for metal dust and fume REL Long-term Value: 0.05* mg/m ³ as Co; metal dust and fume TLV Long-term Value: 0.02* mg/m ³ as Co; BEI
Components with Biological Limit Values:		
CAS: 10141-05-6	Cobalt Nitrate	BEI 15 µg/L, urine, end of shift at end of workweek, Cobalt (background) BEI 1 µg/L, urine, end of shift at end of workweek, Cobalt (background, semi-quantitative)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid.

Colour: Red colour

Odor: Slight.

pH at 20°C (68°F): 2.0

Boiling Point: 100°C/212°F.

Freezing/Melting Point: Not determined

Vapour Pressure: Not determined

Vapour Density: Not determined

% Volatile by Volume: Not Available.

Evaporation Rate: Not Available.

Solubility: Completely soluble.

Viscosity: Not determined

Molecular Weight: Not available.

Other: Not available.

Not Flammable.

82.4% Water, 15% solids.

SECTION 10: STABILITY AND REACTIVITY

Reactivity:

Not reactive.

Chemical Stability:

Stable.

Hazardous Polymerization:

Will not occur.

Conditions to Avoid:

Materials to Avoid:

Oxidizing materials. Strong acids or bases, strong oxidizing agents and strong reducing agents

Additional Information:

No additional remarks.

Hazardous Decomposition Products: Carbon monoxide (CO). Carbon dioxide (CO₂), Calcium Oxides, Cobalt/Cobalt Oxides, Hydrogen Chloride gas, Nitrogen Oxides (NO_x), Sulfur Oxides and Sodium Oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

Likely Routes of Exposure:

Ingestion:

Swallowing will lead to a corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

Skin Contact: Strong caustic effect on skin and mucous membranes

Inhalation: Sensitization possible through inhalation.

Eye Contact: Irritating effect. Causes serious eye irritation.

Additional Information:

Acute Test of Product:

CAS Number	Name	LD50
RTECS: EV 9800000	Trade Secret	1,650 mg/kg (rat)
RTECS: EV 4550000	Trade Secret	2,301 mg/kg (rat)
CAS: 77-92-9	Citric Acid	Oral: 5,040 mg/kg (mouse), 5,400 mg/kg (rat) Dermal: >2,000 mg/kg (rat)

Carcinogenicity:

Carcinogenicity Comment: IARC (international Agency for Research on Cancer) – Substance is not listed, none of the ingredients are listed.

CAS: 10141-05-6	Cobalt Nitrate	2B
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NTP (National Toxicity Program) – None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration) – None of the ingredients are listed.

Reproductive Toxicity/Teratogenicity/Embryotoxicity/Mutagenicity: None known.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Aquatic Toxicity:

Avoid release into the environment. Run-off from fire control or dilution water may cause pollution.

Trade Secret	
EC-50	2,400 mg/l (Water Flea)

Other Information:

Ecotoxicity: material is very toxic to aquatic organisms on an acute basis. Poisonous to fish. Rinse off into drains may increase pH-values which may harm aquatic organisms. Must not be allowed to reach bodies of water or drainage ditches undiluted or on-neutralized. Even small amounts are a danger to drinking water if it leaks into the ground.

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal of Waste Method: Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations. Do not allow product to reach sewage systems.

Contaminated Packaging: Empty containers should be recycled or disposed of through an approved waste management facility.

SECTION 14: TRANSPORT INFORMATION

DOT (U.S.): Non-Regulated Material

DOT Shipping Name: Lectroetch 2611A

DOT Hazardous Class: Non-Regulated Material

DOT UN Number: Non-Regulated Material

DOT Packing Group: Non-Regulated Material Non-Regulated Material

DOT Reportable Quantity (lbs): Not available.

Note: No additional remarks.

Marine Pollutant: No.

TDG (Canada):

TDG Shipping Name: Lectroetch 2611A

Hazard Class: Non-Regulated Material

UN Number: Non-Regulated Material

Packing Group: Non-Regulated Material

Note: No additional Remarks

Marine Pollutant: No.

SECTION 15: REGULATORY INFORMATION

U.S. TSCA Inventory Status: All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt.

Canadian DSL Inventory Status: All components of this product are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.

Note: Not available.

U.S. Regulatory Rules:

California Proposition 65: Not Listed.
MA Right to Know List: Not Listed.
New Jersey Right-to-Know List: Not Listed.
Pennsylvania Right-to-Know List: Not Listed.

Classification

Respiratory Sensitivity 1, H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Mutagenicity 2, H341 - Suspected of causing genetic defects.
Carcinogenicity 1B, H350 - May cause cancer.
Reproductive 1B, H360 - May damage fertility or the unborn child.
Skin Corrosive 1A, H314 - Causes severe skin burns and eye damage.
Aquatic Acute 1, H400 - Very toxic to aquatic life.
Aquatic Chronic 1, H410 - Very toxic to aquatic life with long lasting effects.
Eye Irritation – Category 2A, H319 - Causes serious eye irritation.
Skin Sensitivity – Category 2B, H317 - May cause an allergic skin reaction.

Label Elements:**Signal Word: Danger****Hazard Determining Components of Labelling:**

Cobalt Nitrate

Hazard Statements:

May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Suspected of causing genetic defects.
May cause cancer.
May damage fertility or the unborn child.
Causes severe skin burns and eye damage.
Very toxic to aquatic life with long lasting effects.
Very toxic to aquatic life with long lasting effects.
Causes serious eye irritation.
May cause an allergic skin reaction.

**Precautionary Statements:**

Keep container tightly closed
Wear protective gloves and eye protection
Wash hands and skin thoroughly after handling
Take off contaminated clothing and wash it before reuse. Contaminated clothing must not be removed from the workplace.
Avoid release to the environment.
Do not breathe dust or mists.
Wear respiratory protection.
If in eyes, 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.
If ingested, there is no specific antidote. Do not induce vomiting. Seek prompt medical attention.
If on skin, remove all contaminated clothing and rinse with water/shower.

7% of the mixture consists of ingredients of unknown toxicity.

SECTION 16: OTHER INFORMATION

Additional Information: This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

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End of SDS.



Revision Number: 005.1

Issue date: 11/08/2016

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Product type: Restriction of Use: Company address:	LOCTITE 408 INSTANT ADHESIVE known as 408 Prism® Instant Adhesive Lo Cyanoacrylate None identified Henkel Corporation One Henkel Way Rocky Hill, Connecticut 06067	IDH number: Item number: Region: Contact information:	135441 40840 United States Telephone: (860) 571-5100 MEDICAL EMERGENCY Phone: Poison Control Center 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
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2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING: BONDS SKIN IN SECONDS.
 COMBUSTIBLE LIQUID.
 CAUSES EYE IRRITATION.

HAZARD CLASS	HAZARD CATEGORY
FLAMMABLE LIQUID	4
EYE IRRITATION	2B

PICTOGRAM(S)

None

Precautionary Statements

Prevention:	Keep away from heat, sparks, open flames, hot surfaces - no smoking. Wash thoroughly after handling. Wear protective gloves, eye protection, and face protection.
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 attention. In case of fire: Use foam, dry chemical or carbon dioxide to extinguish.
Storage:	Store in a well-ventilated place. Keep cool.
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*
Beta-Methoxyethyl Cyanoacrylate	27816-23-5	90 - 100

* 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:	Do not pull bonded skin apart. Soak in warm soapy water. Gently peel apart using a blunt instrument. If skin is burned due to the rapid generation of heat by a large drop, seek medical attention. If lips are bonded, apply warm water to the lips and encourage wetting and pressure from saliva in mouth. Peel or roll lips apart. Do not pull lips apart with direct opposing force.
Eye contact:	Immediately flush with plenty of water for at least 15 minutes. Get medical attention. If eyelids are bonded closed, release eyelashes with warm water by covering with a wet pad. Do not force eye open. Cyanoacrylate will bond to eye protein and will cause a lachrymatory effect which will help to debond the adhesive. Keep eye covered until debonding is complete, usually within 1-3 days. Medical attention should be sought in case solid particles of polymerized cyanoacrylate trapped behind the eyelid caused abrasive damage.
Ingestion:	Ensure breathing passages are not obstructed. The product will polymerize rapidly and bond to the mouth making it almost impossible to swallow. Saliva will separate any solidified product in several hours. Prevent the patient from swallowing any separated mass.
Symptoms:	See Section 11.
Notes to physician:	Surgery is not necessary to separate accidentally bonded tissues. Experience has shown that bonded tissues are best treated by passive, non-surgical first aid. If rapid curing has caused thermal burns they should be treated symptomatically after adhesive is removed.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Water spray (fog), foam, dry chemical or carbon dioxide.
Special firefighting procedures:	Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA).
Unusual fire or explosion hazards:	Not available.
Hazardous combustion products:	Trace amounts of toxic and/or irritating fumes may be released and the use of breathing apparatus is recommended.

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:	Ventilate area. Do not allow product to enter sewer or waterways.
Clean-up methods:	Do not use cloths for mopping up. Flood with water to complete polymerization and scrape off the floor. Cured material can be disposed of as non-hazardous waste. 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. Avoid contact with fabric or paper goods. Contact with these materials may cause rapid polymerization which can generate smoke and strong irritating vapors, and cause thermal burns.
- Storage:** Keep in a cool, well ventilated area away from heat, sparks and open flame. Keep container tightly closed until ready for use.

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
Beta-Methoxyethyl Cyanoacrylate	None	None	None	0.2 ppm TWA

- Engineering controls:** Use positive down-draft exhaust ventilation if general ventilation is insufficient to maintain vapor concentration below established 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.
- Skin protection:** Use nitrile gloves and aprons as necessary to prevent contact. Do not use PVC, nylon or cotton.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical state:** Liquid
- Color:** Colorless to light yellow
- Odor:** Odorless
- Odor threshold:** 1 - 2 ppm
- pH:** Not applicable
- Vapor pressure:** < 0.2 mm hg
- Boiling point/range:** > 149 °C (> 300.2 °F)None
- Melting point/ range:** Not determined
- Specific gravity:** 1.1
- Vapor density:** Not available.
- Flash point:** 80 °C (176°F) Tagliabue closed cup
- Flammable/Explosive limits - lower:** Not determined
- Flammable/Explosive limits - upper:** Not determined
- Autoignition temperature:** Not determined
- Flammability:** Not applicable
- Evaporation rate:** Not available.
- Solubility in water:** Polymerises in presence of water.
- Partition coefficient (n-octanol/water):** Not applicable
- VOC content:** 2 %; < 20 g/l California SCAQMD Method 316B
- Viscosity:** Not available.
- Decomposition temperature:** Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage conditions.
Hazardous reactions:	Rapid exothermic polymerization will occur in the presence of water, amines, alkalis and alcohols.
Hazardous decomposition products:	Oxides of carbon.
Incompatible materials:	Water, amines, alkalis and alcohols.
Reactivity:	Not available.
Conditions to avoid:	Spontaneous polymerization.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects/Symptoms

Inhalation:	Exposure to vapors above the established exposure limit results in respiratory irritation, which may lead to difficulty in breathing and tightness in the chest.
Skin contact:	May cause skin irritation. Bonds skin in seconds. Cyanoacrylates have been reported to cause allergic reaction but due to rapid polymerization at the skin surface, an allergic response is rare. Cyanoacrylates generate heat on solidification. In rare circumstances a large drop will burn the skin. Cured adhesive does not present a health hazard even if bonded to the skin.
Eye contact:	Irritating to eyes. Causes excessive tearing. Eyelids may bond.
Ingestion:	Not expected to be harmful by ingestion. Rapidly polymerizes (solidifies) and bonds in mouth. It is almost impossible to swallow.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Beta-Methoxyethyl Cyanoacrylate	None	Irritant, Allergen

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Beta-Methoxyethyl Cyanoacrylate	No	No	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: Not a RCRA hazardous waste.

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: Combustible liquid, n.o.s. (Cyanoacrylate ester)
Hazard class or division: Combustible Liquid
Identification number: NA 1993
Packing group: III

International Air Transportation (ICAO/IATA)

Proper shipping name: Aviation regulated liquid, n.o.s. (Cyanoacrylate ester)
Hazard class or division: 9
Identification number: UN 3334
Packing group: III

Water Transportation (IMO/IMDG)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

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: Immediate Health, Fire, Reactive

CERCLA/SARA Section 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). Beta-Methoxyethyl Cyanoacrylate (CAS# 27816-23-5).

California Proposition 65: No California Proposition 65 listed chemicals are known to be present.

Canada Regulatory Information

CEPA DSL/NDSL Status: Contains one or more components listed on the Non-Domestic Substances List. All other components are listed on or are exempt from listing on the Domestic Substances List. Components listed on the NDSL must be tracked by all Canadian Importers of Record as required by Environment Canada. They may be imported into Canada in limited quantities. Please contact Regulatory Affairs for additional details.

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: 11/08/2016

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MOLYKOTE(R) P-37 ANTISEIZE PASTE

Version 3.0 Revision Date: 09/14/2017 SDS Number: 836413-00012 Date of last issue: 03/21/2017
Date of first issue: 11/26/2014

SECTION 1. IDENTIFICATION

Product name : MOLYKOTE(R) P-37 ANTISEIZE PASTE

Product code : 000000000002322374

Manufacturer or supplier's details

Company name of supplier : Dow Corning Corporation

Address : South Saginaw Road
Midland Michigan 48686

PO box : 65091

Telephone : (989) 496-6000

Emergency telephone : 24 Hour Emergency Telephone : (989) 496-5900
CHEMTREC : (800) 424-9300

Recommended use of the chemical and restrictions on use

Recommended use : Lubricants and lubricant additives

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with 29 CFR 1910.1200**

Serious eye damage : Category 1

GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H318 Causes serious eye damage.

Precautionary Statements : **Prevention:**
P280 Wear eye protection/ face protection.

Response:
P305 + P351 + P338 + P310 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.

Other hazards

None known.

MOLYKOTE(R) P-37 ANTISEIZE PASTE

Version Revision Date: SDS Number: Date of last issue: 03/21/2017
3.0 09/14/2017 836413-00012 Date of first issue: 11/26/2014

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture
Chemical nature : Inorganic and organic compounds
Mixture

Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
White mineral oil (petroleum)	8042-47-5	>= 33 - <= 53
Graphite	7782-42-5	>= 19 - <= 29
Calcium hydroxide	1305-62-0	>= 12 - <= 18
Zirconium oxide	1314-23-4	>= 7 - <= 13
Silicon dioxide	7631-86-9	>= 0.6 - <= 1.6

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.

If inhaled : If inhaled, remove to fresh air.
Get medical attention if symptoms occur.

In case of skin contact : Wash with water and soap as a precaution.
Get medical attention if symptoms occur.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
If easy to do, remove contact lens, if worn.
Get medical attention immediately.

If swallowed : If swallowed, DO NOT induce vomiting.
Get medical attention if symptoms occur.
Rinse mouth thoroughly with water.

Most important symptoms and effects, both acute and delayed : Causes serious eye damage.

Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists.

Notes to physician : Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray
Alcohol-resistant foam
Carbon dioxide (CO₂)

MOLYKOTE(R) P-37 ANTISEIZE PASTE

Version 3.0 Revision Date: 09/14/2017 SDS Number: 836413-00012 Date of last issue: 03/21/2017
 Date of first issue: 11/26/2014

- Dry chemical
- Unsuitable extinguishing media : None known.
- Specific hazards during fire fighting : Exposure to combustion products may be a hazard to health.
- Hazardous combustion products : Carbon oxides
Metal oxides
Silicon oxides
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.
- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Follow safe handling advice and personal protective equipment recommendations.
- Environmental precautions : Discharge into the environment must be avoided.
Prevent further leakage or spillage if safe to do so.
Retain and dispose of contaminated wash water.
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.
For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.
Clean up remaining materials from spill with suitable absorbent.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

- Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

MOLYKOTE(R) P-37 ANTISEIZE PASTE

Version 3.0 Revision Date: 09/14/2017 SDS Number: 836413-00012 Date of last issue: 03/21/2017
 Date of first issue: 11/26/2014

- Local/Total ventilation : Use only with adequate ventilation.
- Advice on safe handling : Do not swallow.
 Do not get in eyes.
 Avoid prolonged or repeated contact with skin.
 Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
 Keep container tightly closed.
 Take care to prevent spills, waste and minimize release to the environment.
- Conditions for safe storage : Keep in properly labeled containers.
 Keep tightly closed.
 Store in accordance with the particular national regulations.
- Materials to avoid : Do not store with the following product types:
 Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
White mineral oil (petroleum)	8042-47-5	TWA (Mist)	5 mg/m ³	OSHA Z-1
		TWA (Inhalable fraction)	5 mg/m ³	ACGIH
		TWA (Mist)	5 mg/m ³	NIOSH REL
		ST (Mist)	10 mg/m ³	NIOSH REL
Graphite	7782-42-5	TWA (Respirable)	2.5 mg/m ³	NIOSH REL
		TWA (Respirable fraction)	2 mg/m ³	ACGIH
		TWA (Dust)	15 Million particles per cubic foot	OSHA Z-3
Calcium hydroxide	1305-62-0	TWA	5 mg/m ³	ACGIH
		TWA (total dust)	15 mg/m ³	OSHA Z-1
		TWA (respirable fraction)	5 mg/m ³	OSHA Z-1
		TWA	5 mg/m ³	NIOSH REL
Zirconium oxide	1314-23-4	TWA	5 mg/m ³ (Zirconium)	OSHA Z-1
		TWA	5 mg/m ³ (Zirconium)	ACGIH
		STEL	10 mg/m ³ (Zirconium)	ACGIH
		TWA	5 mg/m ³ (Zirconium)	NIOSH REL

SAFETY DATA SHEET

DOW CORNING

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		ST	10 mg/m ³ (Zirconium)	NIOSH REL
Silicon dioxide	7631-86-9	TWA (Dust)	20 Million particles per cubic foot (Silica)	OSHA Z-3
		TWA (Dust)	80 mg/m ³ / %SiO ₂ (Silica)	OSHA Z-3
		TWA	6 mg/m ³ (Silica)	NIOSH REL

These substance(s) are inextricably bound in the product and therefore do not contribute to a dust inhalation hazard.

|| Calcium hydroxide

|| Silicon dioxide

Engineering measures : Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations.

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection

Material : Chemical-resistant gloves

Remarks : Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.

Eye protection : Wear the following personal protective equipment:
 Chemical resistant goggles must be worn.
 If splashes are likely to occur, wear:
 Face-shield

Skin and body protection : Select appropriate protective clothing based on chemical

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resistance data and an assessment of the local exposure potential.
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

Hygiene measures : Ensure that eye flushing systems and safety showers are located close to the working place.
When using do not eat, drink or smoke.
Wash contaminated clothing before re-use.
These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	paste
Color	:	gray
Odor	:	none
Odor Threshold	:	No data available
pH	:	Not applicable
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	Not applicable
Flash point	:	> 170 °C Method: closed cup
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	Not classified as a flammability hazard
Self-ignition	:	The substance or mixture is not classified as pyrophoric. The substance or mixture is not classified as self heating.
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	Not applicable
Relative vapor density	:	No data available
Relative density	:	1.21
Solubility(ies)	:	
Water solubility	:	No data available

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Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	
Viscosity, dynamic	:	Not applicable
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Molecular weight	:	No data available
Particle size	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Can react with strong oxidizing agents. When heated to temperatures above 150 °C (300 °F) in the presence of air, trace quantities of formaldehyde may be released. Adequate ventilation is required. See OSHA formaldehyde standard, 29 CFR 1910.1048
Conditions to avoid	:	None known.
Incompatible materials	:	Oxidizing agents
Hazardous decomposition products	:	No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Skin contact
Ingestion
Eye contact

Acute toxicity

Not classified based on available information.

Ingredients:**White mineral oil (petroleum):**

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg
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Acute inhalation toxicity : LC50 (Rat): > 5 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
 Assessment: The substance or mixture has no acute dermal toxicity

Graphite:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
 Method: OECD Test Guideline 401
 Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 2 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Method: OECD Test Guideline 403
 Assessment: The substance or mixture has no acute inhalation toxicity

Calcium hydroxide:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
 Method: OECD Test Guideline 425
 Assessment: The substance or mixture has no acute oral toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,500 mg/kg
 Method: OECD Test Guideline 402
 Assessment: The substance or mixture has no acute dermal toxicity
 Remarks: Based on data from similar materials

Zirconium oxide:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 4.3 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Method: OECD Test Guideline 436
 Assessment: The substance or mixture has no acute inhalation toxicity

Silicon dioxide:

Acute oral toxicity : LD50 (Rat): > 3,300 mg/kg
 Assessment: The substance or mixture has no acute oral toxicity
 Remarks: Information taken from reference works and the literature.

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Acute inhalation toxicity : LC50 (Rat): > 2.08 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Information taken from reference works and the literature.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Information taken from reference works and the literature.

Skin corrosion/irritation

Not classified based on available information.

Product:

Species: Rabbit
Result: No skin irritation
Remarks: Based on data from similar materials

Ingredients:**White mineral oil (petroleum):**

Species: Rabbit
Result: No skin irritation

Graphite:

Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

Calcium hydroxide:

Species: Rabbit
Method: OECD Test Guideline 404
Result: Skin irritation

Zirconium oxide:

Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

Silicon dioxide:

Result: No skin irritation
Remarks: Information taken from reference works and the literature.

Serious eye damage/eye irritation

Causes serious eye damage.

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Ingredients:**White mineral oil (petroleum):**

Species: Rabbit
Result: No eye irritation

Graphite:

Species: Rabbit
Result: No eye irritation

Calcium hydroxide:

Species: Rabbit
Result: Irreversible effects on the eye
Method: OECD Test Guideline 405

Zirconium oxide:

Species: Rabbit
Result: No eye irritation
Remarks: Based on data from similar materials

Silicon dioxide:

Result: No eye irritation
Remarks: Information taken from reference works and the literature.

Respiratory or skin sensitization**Skin sensitization**

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Ingredients:**White mineral oil (petroleum):**

Test Type: Buehler Test
Routes of exposure: Skin contact
Species: Guinea pig
Result: negative

Graphite:

Test Type: Local lymph node assay (LLNA)
Routes of exposure: Skin contact
Species: Mouse
Result: negative

Zirconium oxide:

Test Type: Maximization Test
Routes of exposure: Skin contact
Species: Guinea pig
Result: negative

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Remarks: Based on data from similar materials

Silicon dioxide:

Assessment: Does not cause skin sensitization.

Test Type: Skin: test type not specified

Species: Guinea pig

Result: negative

Remarks: Information taken from reference works and the literature.

Germ cell mutagenicity

Not classified based on available information.

Ingredients:**White mineral oil (petroleum):**

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
 Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo
 cytogenetic assay)
 Species: Mouse
 Application Route: Intraperitoneal injection
 Method: OECD Test Guideline 474
 Result: negative
 Remarks: Based on data from similar materials

Graphite:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
 Result: negative

Calcium hydroxide:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
 Method: OECD Test Guideline 471
 Result: negative

Zirconium oxide:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
 Method: OECD Test Guideline 471
 Result: negative

Silicon dioxide:

Genotoxicity in vitro : Result: negative
 Remarks: Information taken from reference works and the literature.

Genotoxicity in vivo : Application Route: Ingestion
 Result: negative
 Remarks: Information taken from reference works and the literature.

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Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

Carcinogenicity

Not classified based on available information.

Ingredients:**White mineral oil (petroleum):**

Species: Rat
Application Route: Ingestion
Exposure time: 24 Months
Result: negative

Calcium hydroxide:

Species: Rat
Application Route: Ingestion
Exposure time: 104 weeks
Result: negative
Remarks: Based on data from similar materials

IARC

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Ingredients:**White mineral oil (petroleum):**

Effects on fertility : Test Type: One-generation reproduction toxicity study
Species: Rat
Application Route: Skin contact
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: Ingestion
Result: negative

Graphite:

Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: Ingestion

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Method: OECD Test Guideline 422
 Result: negative

Effects on fetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
 Species: Rat
 Application Route: Ingestion
 Method: OECD Test Guideline 422
 Result: negative

Calcium hydroxide:

Effects on fetal development : Test Type: Embryo-fetal development
 Species: Rat
 Application Route: Ingestion
 Result: negative
 Remarks: Based on data from similar materials

Zirconium oxide:

Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
 Species: Rat
 Application Route: Ingestion
 Method: OECD Test Guideline 422
 Result: negative
 Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
 Species: Rat
 Application Route: Ingestion
 Method: OECD Test Guideline 422
 Result: negative
 Remarks: Based on data from similar materials

STOT-single exposure

Not classified based on available information.

Ingredients:**Calcium hydroxide:**

Assessment: May cause respiratory irritation.
 Remarks: These substance(s) are inextricably bound in the product and therefore do not contribute to a dust inhalation hazard.

STOT-repeated exposure

Not classified based on available information.

Repeated dose toxicity**Ingredients:****White mineral oil (petroleum):**

Species: Rat

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LOAEL: > 160 mg/kg
Application Route: Ingestion
Exposure time: 90 Days

Species: Rat
LOAEL: >= 1 mg/l
Application Route: inhalation (dust/mist/fume)
Exposure time: 4 Weeks
Method: OECD Test Guideline 412

Graphite:

Species: Rat
NOAEL: 12 mg/m³
Application Route: inhalation (dust/mist/fume)
Exposure time: 28 Days
Method: OECD Test Guideline 412

Zirconium oxide:

Species: Rat
NOAEL: >= 3,150 mg/kg
Application Route: Ingestion
Exposure time: 17 Weeks
Remarks: Based on data from similar materials

Aspiration toxicity

Not classified based on available information.

Ingredients:**White mineral oil (petroleum):**

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Ingredients:****White mineral oil (petroleum):**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae : NOEC (Pseudokirchneriella subcapitata (green algae)): 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

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Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 1,000 mg/l
 Exposure time: 28 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 1,000 mg/l
 Exposure time: 21 d

Graphite:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 100 mg/l
 Exposure time: 96 h
 Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
 Exposure time: 48 h
 Method: OECD Test Guideline 202

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50: > 1,012.5 mg/l
 Exposure time: 3 h
 Method: OECD Test Guideline 209

Calcium hydroxide:

Toxicity to fish : LC50 (Gasterosteus aculeatus (threespine stickleback)): 457 mg/l
 Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 49.1 mg/l
 Exposure time: 48 h
 Method: OECD Test Guideline 202

Toxicity to algae : EC10 (Pseudokirchneriella subcapitata (green algae)): 79.22 mg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201

EC50 (Pseudokirchneriella subcapitata (green algae)): 184.57 mg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 32 mg/l
 Exposure time: 14 d

Toxicity to microorganisms : EC50: 300.4 mg/l
 Exposure time: 3 h
 Method: OECD Test Guideline 209

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Zirconium oxide:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 100 mg/l
 Exposure time: 96 h
 Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
 Exposure time: 48 h

Toxicity to algae : ErC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201
 Remarks: Based on data from similar materials

Persistence and degradability**Ingredients:****White mineral oil (petroleum):**

Biodegradability : Result: Not readily biodegradable.
 Biodegradation: 31 %
 Exposure time: 28 d

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Resource Conservation and Recovery Act (RCRA) : This product has been evaluated for RCRA characteristics and does not meet the criteria of hazardous waste if discarded in its purchased form.

Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
 If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION**International Regulations****UNRTDG**

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

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IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation**49 CFR**

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know****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 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Serious eye damage or eye irritation

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**Pennsylvania Right To Know**

White mineral oil (petroleum)	8042-47-5
Graphite	7782-42-5
Calcium hydroxide	1305-62-0
Zirconium oxide	1314-23-4
Polybutene	9003-29-6
Silicon dioxide	7631-86-9

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.

California List of Hazardous Substances

White mineral oil (petroleum)	8042-47-5
Graphite	7782-42-5
Calcium hydroxide	1305-62-0
Zirconium oxide	1314-23-4

California Permissible Exposure Limits for Chemical Contaminants

White mineral oil (petroleum)	8042-47-5
Graphite	7782-42-5
Calcium hydroxide	1305-62-0
Zirconium oxide	1314-23-4
Silicon dioxide	7631-86-9

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The ingredients of this product are reported in the following inventories:

- NZIoC : All ingredients listed or exempt.
- TSCA : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.
- || AICS : All ingredients listed or exempt.
- || IECSC : All ingredients listed or exempt.
- ENCS/ISHL : All components are listed on ENCS/ISHL or exempted from inventory listing.
- KECI : All ingredients listed, exempt or notified.
- || PICCS : All ingredients listed or exempt.
- DSL : All chemical substances in this product comply with the CEPA 1999 and NSNR and are on or exempt from listing on the Canadian Domestic Substances List (DSL).
- REACH : For purchases from Dow Corning EU legal entities, all ingredients are currently pre/registered or exempt under REACH. Please refer to section 1 for recommended uses. For purchases from non-EU Dow Corning legal entities with the intention to export into EEA please contact your DC representative/local office.
- TCSI : All ingredients listed or exempt.

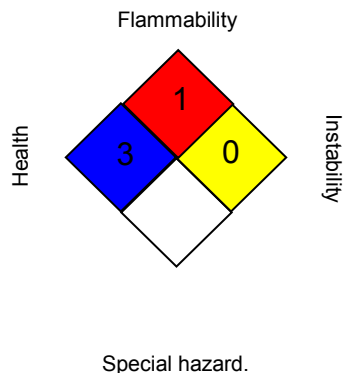
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SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS® IV:

HEALTH	/	3
FLAMMABILITY		1
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
OSHA Z-3	:	USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA Z-1 / TWA	:	8-hour time weighted average
OSHA Z-3 / TWA	:	8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECS - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Pre-

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vention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Revision Date : 09/14/2017

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

US / Z8

NITROGEN LIQUID

Product: PMC2215

Revision date: 2018/07/23

Section 1: PRODUCT AND COMPANY IDENTIFICATION

CHEMICAL FAMILY: NOT AVAILABLE.

PRODUCT USES: ARC WELDING.

SUPPLIER: SAME AS MANUFACTURER.

**MANUFACTURER
EMERGENCY PHONE
NUMBER:** 703-527-3887.
800-424-9300.

**INFORMATION PHONE
NUMBER:** 800-772-9247 (800-PRAXAIR).

MANUFACTURER: PRAXAIR, INC.
10 RIVERVIEW DRIVE
DANBURY, CT 06810-6268.

SYNONYMS: NITROGEN (CRYOGENIC LIQUID), NITROGEN, MEDIPURE LIQUID
NITROGEN.

PRODUCT NAME: NITROGEN, REFRIGERATED LIQUID.

Section 2: HAZARD IDENTIFICATION

GHS Classification

Health Hazard Class(es): No health hazard class.

Physical Hazard Class(es): Gas under pressure, Refrigerated liquefied gas.

Environmental Hazard Class(es): No environmental hazard class.

GHS Label Elements

SYMBOL:



Signal word: WARNING.

Hazard statement(s): H281 Contains refrigerated gas; may cause cryogenic burns or injury.
OSHA-H01 - May displace oxygen and cause rapid suffocation.

Precautionary statement(s): P202 Do not handle until all safety precautions have been read and understood.
P271 Use only outdoors or in a well-ventilated area.
P282 Wear cold insulating gloves and either face shield or protection.
P403 Store in a well-ventilated place.
P501 Dispose of contents/container in accordance with local/regional/national regulations.
CGA-PG05 - Use a back flow preventive device in the piping.
CGA-PG06 - Clean valve after each use and when empty.
CGA-PG24 - DO NOT change or force fit connections.
CGA-PG23 - Always keep container in upright position.

OTHER: ASPHYXIAN IN HIGH CONCENTRATIONS.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

C.A.S.	CONCENTRATION %	Ingredient Name
7727-37-9	100	NITROGEN

Section 4: FIRST AID MEASURES

SKIN CONTACT: TREAT FOR FROSTBITE IF NECESSARY BY GENTLY WARMING AFFECTED AREAS.
IF IRRITATION OCCURS, CONSULT A PHYSICIAN.

EYE CONTACT: FLUSH WITH WATER FOR AT LEAST 15 MINUTES, HOLDING EYELIDS OPEN WITH FINGERS.
OBTAIN IMMEDIATE MEDICAL ATTENTION.

INHALATION: REMOVE VICTIM TO FRESH AIR.
OBTAIN MEDICAL ATTENTION.
KEEP PERSON WARM AND AT REST.
IF NOT BREATHING, A QUALIFIED PERSONNEL SHOULD ADMINISTER ARTIFICIAL RESPIRATION.

INGESTION: NOT CONSIDERED A POTENTIAL ROUTE OF EXPOSURE.

ADDITIONAL INFORMATION: THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. THIS COMPANY SHALL NOT BE HELD LIABLE FOR ANY INACCURACIES.

Section 5: FIRE FIGHTING MEASURES

FLAMMABILITY: NOT FLAMMABLE.

IF YES, UNDER WHICH CONDITIONS?: SURROUNDING FIRE.

EXTINGUISHING MEDIA: USE APPROPRIATE EXTINGUISHING MEDIA FOR SURROUNDING FIRE.

SPECIAL PROCEDURES: SELF-CONTAINED BREATHING APPARATUS REQUIRED.
DO NOT GET WATER INSIDE CONTAINER.
FIREFIGHTERS SHOULD WEAR THE USUAL PROTECTIVE GEAR.
USE WATER SPRAY TO DISPERSE VAPORS.
USE WATER SPRAY TO COOL FIRE EXPOSED CONTAINERS.
STOP SPILL/RELEASE IF IT CAN BE DONE WITH MINIMAL RISK.

AUTO IGNITION TEMPERATURE: NOT AVAILABLE.

FLASH POINT (C), METHOD: NOT AVAILABLE.

LOWER FLAMMABLE LIMIT (% VOL): NOT AVAILABLE.

UPPER FLAMMABLE LIMIT (% VOL): NOT AVAILABLE.

SENSITIVITY TO STATIC DISCHARGE: NOT AVAILABLE.

SENSITIVITY TO IMPACT: PROTECT AGAINST PHYSICAL DAMAGE.

HAZARDOUS COMBUSTION PRODUCTS: NOT AVAILABLE.

T.D.G. FLAM. CLASS: NOT APPLICABLE.

RATE OF BURNING: NOT AVAILABLE.

EXPLOSIVE POWER: CYLINDERS ARE EQUIPPED WITH TEMPERATURE AND PRESSURE RELIEF DEVICES BUT MAY STILL RUPTURE UNDER FIRE CONDITIONS. VAPORS ARE HEAVIER THAN AIR. CONTAINERS MAY BUILD UP PRESSURE IF EXPOSED TO HEAT.

Section 6: ACCIDENTAL RELEASE MEASURES

LEAK/SPILL: ELIMINATE ALL SOURCES OF IGNITION.
EVACUATE ALL NON-ESSENTIAL PERSONNEL.
PREVENT ENTRY INTO DRAINS, SEWERS, AND OTHER WATERWAYS.
STOP LEAK WITHOUT RISK.
VENTILATE AREA.
WEAR APPROPRIATE PROTECTIVE EQUIPMENT.
REDUCE VAPOURS WITH FOG OR FINE WATER SPRAY.

Section 7: HANDLING AND STORAGE

HANDLING PROCEDURES AND EQUIPMENT: HANDLE AND OPEN CONTAINER WITH CARE.
PROTECT AGAINST PHYSICAL DAMAGE.
USE ADEQUATE VENTILATION.
WEAR PERSONAL PROTECTIVE EQUIPMENT APPROPRIATE TO TASK.
WASH THOROUGHLY AFTER HANDLING.
CONTENTS UNDER PRESSURE.
AVOID BREATHING GAS AND FUMES.
CLOSE VALVE WHEN NOT IN USE AND EMPTY.
DO NOT DRAG, SLIDE OR ROLL CYLINDERS.
USE A CHECK VALVE OR TRAP IN THE DISCHARGE LINE TO PREVENT HAZARDOUS BACK FLOW INTO THE CYLINDER.
MOVE CYLINDER WITH A HAND TRUCK.
FOR OUTDOOR USE ONLY.
DO NOT PIERCE OR BURN CONTAINER, EVEN AFTER USE.
NEVER LIFT CYLINDER BY THE CAP.
USE A BACK FLOW PREVENTIVE DEVICE IN THE PIPING.

STORAGE NEEDS: STORE IN A COOL AND WELL VENTILATED AREA.
STORE BELOW 52°C.
STORE CYLINDERS IN AN UPRIGHT POSITION.
NEVER TRANSPORT CYLINDERS IN TRUNKS OF VEHICLES, ENCLOSED VANS OR IN PASSENGER COMPARTMENTS.
USE A "FIRST IN-FIRST OUT" INVENTORY SYSTEM TO PREVENT FULL CYLINDERS BEING STORED FOR EXCESSIVE PERIODS OF TIME.
SEPARATE FULL AND EMPTY CONTAINERS.
STORE CYLINDERS WITH RESTRAINTS TO PREVENT POSSIBILITY OF RUPTURE.
NEVER PLACE A CONTAINER WHERE IT MAY BECOME PART OF AN ELECTRICAL CIRCUIT.
IF A LEAK OCCURS, CLOSE THE CONTAINER VALVE AND BLOW DOWN THE SYSTEM IN A SAFE AND ENVIRONMENTALLY CORRECT MANNER.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

GLOVES/ TYPE: COLD INSULATING GLOVES IF CONTACT IS LIKELY.

RESPIRATORY/TYPE: IF TLV IS EXCEEDED.
WEAR A POSITIVE PRESSURE AIR LINE RESPIRATOR.
WEAR A SELF-CONTAINED BREATHING APPARATUS.

EYE/TYPE: GOGGLES.
SAFETY GLASSES WITH SIDE-SHIELDS.
FACE SHIELD.

FOOTWEAR/TYPE: METATARSAL SHOES FOR CYLINDER HANDLING.

CLOTHING/TYPE: WEAR ADEQUATE PROTECTIVE CLOTHES.
WELDERS APRON.

OTHER/TYPE: EYE WASH FACILITY SHOULD BE IN CLOSE PROXIMITY.
EMERGENCY SHOWER SHOULD BE IN CLOSE PROXIMITY.

VENTILATION REQUIREMENTS: SAMPLING FOR LOW OXYGEN LEVELS SHOULD BE TAKEN.
LOCAL EXHAUST AND/OR MECHANICAL VENTILATION TO MAINTAIN EXPOSURE BELOW TLV.

INGREDIENTS:

C.A.S.	Ingredient Name	T.L.V.
7727-37-9	NITROGEN	SIMPLE ASPHYXIANT

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: GAS

APPEARANCE & ODOR: CLEAR
COLOURLESS, ODOURLESS GAS.

ODOR THRESHOLD (PPM): NOT AVAILABLE.

VAPOUR PRESSURE (MM HG): NOT APPLICABLE.

VAPOUR DENSITY (AIR=1): NOT AVAILABLE.

BY VOLUME: NOT AVAILABLE.

EVAPORATION RATE (BUTYL ACETATE = 1): NOT AVAILABLE.

FREEZING POINT °C: NOT AVAILABLE.

PH (AS IS): NOT APPLICABLE.

SOLUBILITY IN WATER (%): 20 MG/L.

COEFFICIENT OF WATER/OIL DIST.: NOT AVAILABLE.

MELTING POINT (°C): -210°C.

VOC: NOT AVAILABLE.

SPECIFIC GRAVITY @ 20° C: NOT AVAILABLE.

BOILING POINT: -195.8°C.

DENSITY: 808.5 KG/M3 LIQUID DENSITY AT BOILING POINT AND 1 ATM.

RELATIVE DENSITY: 0.8

AUTO IGNITION TEMPERATURE: NOT AVAILABLE.

FLASH POINT (C), METHOD: NOT AVAILABLE.

LOWER FLAMMABLE LIMIT (% VOL): NOT AVAILABLE.

UPPER FLAMMABLE LIMIT (% VOL): NOT AVAILABLE.

EXPLOSIVE POWER: CYLINDERS ARE EQUIPPED WITH TEMPERATURE AND PRESSURE RELIEF DEVICES BUT MAY STILL RUPTURE UNDER FIRE CONDITIONS. VAPORS ARE HEAVIER THAN AIR. CONTAINERS MAY BUILD UP PRESSURE IF EXPOSED TO HEAT.

Section 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: STABLE UNDER NORMAL CONDITIONS.

NO, WHICH CONDITIONS?: HIGH TEMPERATURES.
EXPOSURE TO LITHIUM, NEODYMIUM, TITANIUM, AND MAGNESIUM.

HAZARDOUS POLYMERIZATION: NOT AVAILABLE.

NO, WHICH ONES?: NONE

HAZARDOUS PRODUCTS OF DECOMPOSITION: UNDER CERTAIN CONDITIONS, NITROGEN CAN REACT VIOLENTLY WITH LITHIUM, NEODYMIUM, TITANIUM (ABOVE 1472°F/800°C), AND MAGNESIUM TO FORM NITRIDES AT HIGH TEMPERATURE, IT CAN ALSO COMBINE WITH OXYGEN AND HYDROGEN.

Section 11: TOXICOLOGICAL INFORMATION

ROUTE OF ENTRY: INHALATION.

EYE CONTACT: LIQUID MAY CAUSE FROST BITE AND COLD BURNS.

SKIN CONTACT: LIQUID MAY CAUSE FROSTBITE AND COLD BURNS.

INGESTION: NOT A LIKELY ROUTE OF EXPOSURE.

LD 50 OF MATERIAL, SPECIES & ROUTE: NO LD50 VALUE ESTABLISHED FOR THE PRODUCT.

LC 50 OF MATERIAL, SPECIES & ROUTE: NO LC50 VALUE ESTABLISHED FOR THE PRODUCT.

EXPOSURE LIMIT OF MATERIAL: NO TLV ESTABLISHED FOR THE PRODUCT.

SENSITIZING CAPABILITY OF MATERIAL: NOT AVAILABLE.

CARCINOGENIC EFFECTS: NOT AVAILABLE.

REPRODUCTIVE EFFECTS: NOT AVAILABLE.

TERATOGENICITY: NOT AVAILABLE.

MUTAGENICITY: NOT AVAILABLE.

SYNERGISTIC MATERIALS: NOT AVAILABLE.

INHALATION, CHRONIC: MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.

EFFECTS OF CHRONIC EXPOSURE: CRYOGENIC LIQUID CAUSES SEVERE FROSTBITE, A BURN-LIKE INJURY.

INGREDIENTS:	C.A.S.	Ingredient Name	LD/50	LC/50
	7727-37-9	NITROGEN	NOT AVAILABLE	NOT AVAILABLE

Section 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE: NONE KNOWN.

ENVIRONMENTAL TOXICITY: NONE KNOWN.

Section 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: IN ACCORDANCE WITH MUNICIPAL, PROVINCIAL AND FEDERAL REGULATIONS.
RETURN CYLINDER TO SUPPLIER.

Section 14: TRANSPORT INFORMATION

T.D.G. CLASSIFICATION: NITROGEN, REFRIGERATED LIQUID
UN1977
CLASS 2.2.

Section 15: REGULATORY INFORMATION

DSL STATUS: APPEARS ON DSL.

HARMONIZED SYSTEM CODE

CANADIAN: 2804.30.0000.

AMERICAN: 2804.30.0000.

Section 16: OTHER INFORMATION

SDS DATE: 2016/10/21.

DATA PREPARED BY: Conform-Action Data Systems
A division of 2843471 Canada inc.
1840 Transcanada
Dorval, QC H9P 1H7
Tel: (514) 683-2060 Fax: (514) 683-1445
24 hr. 1-800-990-5093 support@netmsds.com.

This SDS was generated by *Conform-Plus* Application Service. Visit us at www.netmsds.com.

MATERIAL SAFETY DATA SHEET



This material safety data sheet (MSDS) was prepared solely for the reference of, and as a courtesy to, Shurtape's customers. The adhesive tape product to which this MSDS refers is a manufactured item that meets the definition of an "article" under the OSHA Hazard Communication Standard (hereinafter "the Standard"), which exempts articles from the requirements of the Standard, including the requirement to provide an MSDS.

Under normal conditions of use this product is not expected to release hazardous chemicals, nor pose a physical hazard or health risk, such that the Standard would require Shurtape to provide an MSDS. However, failure to use this product in accordance with Shurtape's recommendations or under normal conditions could result in potential physical hazards, health risks, or other hazards.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

General Name:	P- 691 Series Pressure Sensitive Tape	HMIS® III	
		P- 691 Series Pressure Sensitive Tape	
Shurtape Technologies, LLC		Health	1
PO BOX 1530		Flammability	1
Hickory, N.C. 28603-1530		Physical Hazard	0
(828) 322-2700		Personal Protection	B
Prepared Date:	7/9/2014	Prepared By: EHS Group	

HMIS III® Icons are used with permission of the American Coatings Association (ACA)

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS Number</u>	<u>% Weight</u>
Cotton	None Established	< 30 %
Polymer Coatings	Proprietary	< 35 %
Hydrocarbon Resin	Proprietary	< 20 %
Thermoplastic Rubber Compound	Proprietary	< 20 %

3. HAZARDS IDENTIFICATION

Emergency Overview

May cause skin or eye irritation by mechanical abrasion or by sensitivity to polymers.

Note: If this product is subject to combustion it will undergo hazardous decomposition that will yield the formation and release of hazardous substances including but not limited to carbon dioxide, carbon monoxide, polycyclic organic matter, and smoke. Exposure may cause irritation of the eyes, skin, and respiratory tract. Symptoms such as coughing, tearing, and irritation should be regarded as potentially hazardous and measures should be taken to avoid exposure.

4. FIRST AID MEASURES

Eyes

If wearing contact lenses, remove. Hold eyelids apart and immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get medical attention if irritation persists.

Skin

Wash with soap and water. Seek medical attention if irritation develops or persists.

Ingestion:

Do not give anything by mouth to an unconscious person. Seek medical attention.

Inhalation

Not applicable.

5. FIRE FIGHTING MEASURES

Flash Point (°F)	<i>Not Determined</i>
LEL	<i>Not Determined</i>

Auto Ignition Temp (°F)	<i>Not Determined</i>
UEL	<i>Not Determined</i>

Hazardous Products of Combustion

If this product is subject to combustion it will undergo hazardous decomposition that will yield the formation and release of hazardous substances including but not limited to carbon dioxide, carbon monoxide, polycyclic organic matter, and smoke.

Fire and Explosion Hazards

Minimal fire hazard as supplied. Polymers in adhesive and polymer backed cloth will support

Extinguishing Media

X	Foam	X	Water Spray	X	CO ₂	X	Dry Chemical
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Fire Fighting Instruction

Wear a self-contained breathing apparatus with a full face piece operated in the positive pressure demand mode with appropriate turn-out gear and chemical resistant personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Not applicable.

7. HANDLING AND STORAGE

Handling

Material will be tacky/sticky. Recommend the use of light weight cloth or leather gloves for actual handling of material.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Eye Protection

Safety glasses with side-shields recommended

Skin Protection

Normal lightweight work clothing will minimize skin contact. Use of lightweight cloth or leather gloves recommended.

Respiratory Protections

No adverse respiratory exposure anticipated under normal use

Engineering Controls

No special engineering controls are required

Exposure Guidelines

Not applicable

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point	N/A	Melting Point	>100°C
Specific Vapor Density	N/A	Percent Volatiles	<1%
Specific Gravity	N/A	Evaporation Rate	N/A
Appearance	Various Colors, Opaque	State	Solid at Ambient Temperature
Odor	No Strong odor	pH	N/A
Viscosity	N/A	Freezing Point	N/A
Molecular Weight	N/A	Solubility in H ₂ O	negligible

10. STABILITY AND REACTIVITY

Hazardous Polymerization

Not anticipated under normal or recommended handling, use, or storage conditions.

Hazardous Decomposition

None anticipated under normal or recommended handling, storage, and use conditions.

If this product is subject to combustion it will undergo hazardous decomposition that will yield the formation and release of hazardous substances including but not limited to carbon dioxide, carbon monoxide, polycyclic organic matter and particulate matter. This is not the intended use for this product.

Chemical Stability

Stable

Incompatibility

Incompatible with: strong acids and oxidizing agents

11. TOXICOLOGICAL INFORMATION

Exposure to chemicals and possible effects will not occur with normal use.

12. ECOLOGICAL INFORMATION

No Data

13. DISPOSAL CONSIDERATION

Waste Management Information

This material is considered to be non-hazardous under EPA's RCRA regulations. Dispose of per appropriate local regulations. Shurtape® products are manufactured on a core using 90% recycled content and are packaged in containers with an average of 33% (5% pre-consumer and 28% post-consumer) recycled content. Additionally, the containers used to package Shurtape® products are 100% recyclable.

14. DOT Information – 49 CFR 172.101

DOT description:

Material is not a hazardous material when shipped

Container / Mode:

Various size packages can be utilized for shipping this material

NOS Component:

None

RQ (Reportable Quantity) – 49 CFR 172.101

Product Quantity (lbs) - None

Other Transportation Information:

The DOT Transport Information may vary with the container and mode of shipment

15. REGULATORY INFORMATION

US Federal Regulations

TSCA (Toxic Substances Control Act) Status

TSCA (UNITED STATES) The intentional ingredients of the product are listed.

CERCLA RQ – 40 CFR 302.4 (a)

None

CERCLA RQ – 40 CFR 302.4 (b)

None

SARA 302 Components – 40 CFR 355 Appendix A

None

Section 311 / 312 Hazard Class – 40 CFR 370.2

Immediate (X) Delayed () Fire (X) Reactive () Sudden Release of Pressure ()
Immediate for the molten liquid state only

OSHA Process Safety Management 29 CFR 1910

None listed

EPA Accidental Release Prevention 40 CFR 68

None listed

State and Local Regulations

California Proposition 65

Please see the Regulatory Compliance Letter for the most current information.

International Regulations

EU Packaging Directives

Please see the Regulatory Compliance Letter for the most current information.

DSL (Canada)

The intentional ingredients of this product are listed.

REACH

Please see the Regulatory Compliance Letter for the most current information.

16. OTHER INFORMATION

As defined by 29 CFR 1910. 1200, this product is considered to be an article, defined in the regulation as a “manufactured item other than a fluid or particle: (I) which is formed to a specific shape or design during manufacture; (II) has an end use function(s) dependent in whole or in part upon its shape or design during end use; and (III) which does not release more than very small quantities, e.g., minimal or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees.”

This information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable for their circumstances.

PMC427

Saint-Gobain Performance Plastics High Temperature Glass Fabric Pressure-Sensitive Adhesive Tape

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBERS/SERIES: 2905-, ~~2915~~; 23809, 2906-7, PDPS-70, 2914-7, 2916-7

OTHER/GENERIC NAMES:

PRODUCT USE:

MANUFACTURER: Saint-Gobain Performance Plastics
14 McCaffrey St., PO Box 320
Hoosick Falls, NY 12090-0320

FOR MORE INFORMATION: Product Safety Department: 518-686-7301 (8 AM to 5 PM, Eastern Time)

2. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS #	WEIGHT %
fibrous glass (fiberglass cloth)	65997-17-3	10-60
trimethylated silica	068988567	5-30
dimethyl siloxane, hydroxy-terminated	070131678	5-30

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Material is non toxic, insoluble in water, and non-biodegradable.

POTENTIAL HEALTH HAZARDS:

SKIN:	Contact with the pressure-sensitive adhesive face(s) may cause skin irritation or injury.
EYES:	not a likely route of entry
INHALATION:	not a likely route of entry
INGESTION:	not a likely route of entry
DELAYED EFFECTS:	none known

Ingredients found on one of the OSHA designated carcinogen lists are listed below.

INGREDIENT NAME	NTP STATUS	IARC STATUS	OSHA STANDARD
na	na	na	na

4. FIRST AID MEASURES

na for material as supplied, at room temperature

5. FIRE FIGHTING MEASURES

FLASH POINT:	na
AUTO IGNITION TEMPERATURE:	na
FLAMMABLE LIMITS IN AIR (% BY VOL.):	na, solid material
EXTINGUISHING MEDIA:	Use media appropriate to primary source of fire.
UNUSUAL FIRE HAZARDS:	none

Saint-Gobain Performance Plastics High Temperature Glass Fabric Pressure-Sensitive Adhesive Tape

6. ACCIDENTAL RELEASE MEASURES

na, solid material

Store and handle using good warehouse practices. Avoid excessive temperatures and high humidity.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: na

PERSONAL PROTECTIVE EQUIPMENT:

RESPIRATORY PROTECTION: Use appropriate NIOSH-approved respirator in presence of dust or decomposition fumes.

EYES AND FACE: Use of safety glasses is recommended.

HANDS, ARMS, AND BODY: Pressure-sensitive adhesive side may stick to skin and cause superficial injury. Contact with material being rewound or slit at high speed may cause extremities, hair, or clothing to be drawn into machinery. Edges of material are sharp and can produce cuts, particularly if material is being rewound or slit at high speed.

OTHER CLOTHING AND EQUIPMENT: na

EXPOSURE GUIDELINES: (Guidelines exist for the following ingredients)

INGREDIENT NAME	ACGIH TLV	OSHA PEL	OTHER LIMIT
fibrous glass dust	1 mg/m ³ as dust, 8 hr. TWA	Considered "nuisance dust," 5 mg/m ³	3 x 10 ⁺⁶ fibers/m ³

Other exposure limits for the decomposition products normally associated with product use are as follows: na

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	White or off-white coated fabric, with sticky, pressure-sensitive adhesive on one or both faces; may have a paper or plastic release liner.
PHYSICAL STATE:	solid
MOLECULAR WEIGHT:	na
CHEMICAL FORMULA:	na
ODOR:	odorless
SPECIFIC GRAVITY:	nd
SOLUBILITY IN WATER:	insoluble
pH:	na
BOILING POINT:	na
MELTING POINT:	na
VAPOR PRESSURE:	na
VAPOR DENSITY:	na
EVAPORATION RATE:	na
% VOLATILES:	nd
FLASH POINT:	na

10. STABILITY AND REACTIVITY

NORMALLY STABLE?	stable
INCOMPATIBILITIES:	strong oxidizers, acids, bases, organic solvents
HAZARDOUS DECOMPOSITION PRODUCTS:	no unusual hazards
HAZARDOUS POLYMERIZATION?	Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS:	No acute effects have been identified.
DELAYED (SUBCHRONIC & CHRONIC) EFFECTS	No delayed or cronic effects have been identified.
OTHER DATA:	na

Saint-Gobain Performance Plastics High Temperature Glass Fabric Pressure-Sensitive Adhesive Tape

12. ECOLOGICAL INFORMATION

These materials are non-toxic, non-water-soluble, non-biodegradeable.

13. DISPOSAL CONSIDERATIONS

OTHER DISPOSAL CONSIDERATIONS: Dispose in an approved landfill or by incineration, in compliance with federal, state, and local regulation

14. TRANSPORT

US DOT HAZARD CLASS: na

US DOT ID NUMBER: nd

15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA):

TSCA INVENTORY STATUS: All components are on the TSCA inventory.

OTHER TSCA ISSUES: na

SARA TITLE III / CERCLA:

Reportable Quantities (RQ's) and/or Threshold Planning Quantities (TPQ's) exist for the following ingredients.

INGREDIENT NAME	SARA/CERCLA	SARA EHS
na	na	na

Spills/releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center (1-800-424-8802) and to your Local Emergency Planning Committee.

SECTION 311 HAZARD CLASS: nd

SARA 313 TOXIC CHEMICALS

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:

CAS #	CHEMICAL NAME	% BY WEIGHT
na	na	na

STATE RIGHT TO KNOW:

In addition to the ingredients found in section 2, the following are listed for state right-to-know purposes:

CAS #	CHEMICAL NAME	% BY WEIGHT
na	na	na

ADDITIONAL REGULATORY INFORMATION: na

WHMIS CLASSIFICATION (CANADA): nd

FOREIGN INVENTORY STATUS: nd

16. OTHER INFORMATION

CURRENT ISSUE/REVIEW DATE: 9/21/01

PREVIOUS ISSUE/REVIEW DATE:

CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:

4/28/00..Added 2914-7 & 2916-7, chg'd Furon to Saint-Gobain Performance Plastics

11/16/99 Added 2906-7 & PDPS-70

1/28/98...Added 23809

10/1/95...Changed PSDS form requires additional information.

OTHER INFORMATION: na

PSDS No. FLGL- 0026 ND = Not Determined NA = Not Applicable Issue/Review Date:4/28/00 Page 3 of 3

Permabond®

Engineering Adhesives

SAFETY DATA SHEET

Permabond 910

1. Identification

Product identifier

Product name Permabond 910

Recommended use of the chemical and restrictions on use

Application Adhesive.

Details of the supplier of the safety data sheet

Supplier Permabond LLC
14 Robinson Street
Pottstown, PA 19464
USA
Telephone: 732-868-1372 or 800-640-7599
Website: www.permabond.com

Emergency telephone number

Emergency telephone Medical: Poison Control Center 866-827-6282 (toll free) or 303-389-1109 Transport: CHEMTREC 800-424-9300

2. Hazard(s) identification

Classification of the substance or mixture

OSHA Regulatory Status 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).

Physical hazards Flam. Liq. 4 - H227

Health hazards Skin Irrit. 2 - H315 Eye Irrit. 2A - H319 STOT SE 3 - H335

Label elements

Hazard symbols



Signal word Warning

Hazard statements H227 Combustible liquid.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Permabond 910

Precautionary statements	<p>P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.</p> <p>P261 Avoid breathing vapor/ spray.</p> <p>P264 Wash contaminated skin thoroughly after handling.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P302+P352 If on skin: Wash with plenty of water.</p> <p>P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.</p> <p>P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P312 Call a poison center/ doctor if you feel unwell.</p> <p>P332+P313 If skin irritation occurs: Get medical advice/ attention.</p> <p>P337+P313 If eye irritation persists: Get medical advice/ attention.</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.</p> <p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P403+P235 Store in a well-ventilated place. Keep cool.</p> <p>P405 Store locked up.</p> <p>Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.</p>
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Contains methyl 2-cyanoacrylate

Other hazards

None under normal conditions.

3. Composition/information on ingredients

Mixtures

methyl 2-cyanoacrylate	60-100%
CAS number: 137-05-3	

Classification

Flam. Liq. 4 - H227
 Skin Irrit. 2 - H315
 Eye Irrit. 2A - H319
 STOT SE 3 - H335

The full text for all hazard statements is displayed in Section 16.

Composition comments Exact percentage is a trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. First-aid measures

Description of first aid measures

Inhalation	Get medical attention if any discomfort continues.
Ingestion	On contact, immediate bonding of mouth could occur. Do not induce vomiting. Get medical attention.
Skin Contact	On contact, immediate bonding of the skin will occur. No attempt should be made to remove material from skin or to remove contaminated clothing, as the bonded skin can be easily torn. Wash skin thoroughly with soap and water.

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Eye contact Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes. If adhesive bonding occurs, do not force eyelids apart. Apply a pad soaked in warm water and allow the eyelids to separate. Get medical attention. Cured adhesive will not bond well to surface of eye, but corneal damage from abrasion may result.

Most important symptoms and effects, both acute and delayed

Inhalation Irritation of nose, throat and airway.

Ingestion On contact, immediate bonding of mouth could occur.

Skin contact Prolonged skin contact may cause redness and irritation.

Eye contact Irritating and may cause redness and pain.

Indication of immediate medical attention and special treatment needed

Notes for the doctor SKIN BONDING. Prise the skin apart slowly working from the edge of the bonded area. This can be eased by using warm soapy water. EYE BONDING. DO NOT force eyelids apart. Apply a pad soaked in warm water and allow the eye to separate itself.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media Extinguish with foam, carbon dioxide, dry powder or water fog.

Special hazards arising from the substance or mixture

Specific hazards Cloths used to wipe up spills may cause rapid polymerization that could generate sufficient heat to ignite the cloth.

Hazardous combustion products Decomposes upon heating to release toxic fumes of nitrogen oxides, carbon monoxide, carbon dioxide, and hydrogen cyanide.

Advice for firefighters

Protective actions during firefighting Avoid breathing fire gases or vapors.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions For personal protection, see Section 8. Provide adequate ventilation.

Environmental precautions

Environmental precautions Do not discharge into drains or watercourses or onto the ground.

Methods and material for containment and cleaning up

Methods for cleaning up Small spills: wipe up with cloth. Immediately soak cloth with water to polymerize the adhesive. Caution! Cloth containing adhesive may undergo autoignition if not soaked with water Large spills: flood area with water. When cured, remove film with a scraper.

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13.

7. Handling and storage

Precautions for safe handling

Usage precautions Ensure adequate ventilation of the working area. Avoid contact with skin, eyes and clothing. Avoid breathing vapours. Always replace cap after use.

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Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry and cool place. Keep away from heat, sparks and open flame. Keep container tightly sealed when not in use.

Specific end uses(s)

Specific end use(s) Adhesive.

8. Exposure controls/Personal protection

Control parameters

Occupational exposure limits

methyl 2-cyanoacrylate

Long-term exposure limit (8-hour TWA): ACGIH 0.2 ppm 1 mg/m³

ACGIH = American Conference of Governmental Industrial Hygienists.

Exposure controls

Appropriate engineering controls Observe any occupational exposure limits for the product or ingredients. Mechanical ventilation or local exhaust ventilation may be required.

Eye/face protection Chemical splash goggles or face shield. Personal protective equipment for eye and face protection should comply with OSHA 1910.133.

Hand protection Nitrile rubber or Viton™ gloves are recommended. Cotton or other absorbent gloves should not be worn.

Other skin and body protection Uniforms, coveralls, or a lab coat should be worn

Respiratory protection No specific recommendations. Respiratory protection must be used if the airborne contamination exceeds the recommended occupational exposure limit.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Liquid.
Color	Colorless.
Odor	Pungent. Irritating.
Odor threshold	1 - 2 ppm
pH	Not applicable.
Melting point	Not applicable.
Initial boiling point and range	>149°C (300°F)
Flash point	80°C – 93°C (176°F - 199.94°F)
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	Not available.
Vapor pressure	~0.6 mbar @ 25°C
Vapor density	Not applicable.
Relative density	1.1

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Bulk density	Not applicable.
Solubility(ies)	Hardens in contact with water. Insoluble in water. Miscible with the following materials: acetone
Partition coefficient	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	≈80 mPa s @ 23°C
Oxidizing properties	Not applicable.
Volatile organic compound	<2 %, 20 grams/liter (Estimated)

10. Stability and reactivity

Reactivity	The product reacts with water and will generate heat.
Stability	Stable at normal ambient temperatures and when used as recommended.
Possibility of hazardous reactions	Reactions with the following materials may generate heat: Water Alcohols. Alkalis. Amines.
Conditions to avoid	Do not add water directly to the product. It may cause a violent reaction.
Materials to avoid	Water. Amines. Alkalis. Alcohols.
Hazardous decomposition products	Heating may generate the following products: Toxic gases/vapors/fumes of: Carbon dioxide (CO ₂). Carbon monoxide (CO). Nitrous gases (NO _x). Hydrogen cyanide (HCN).

11. Toxicological information

Information on toxicological effects

Toxicological effects	The toxicological properties of this product have not been fully evaluated. Avoid direct contact with skin or eyes. Do not ingest or inhale.
<u>Skin corrosion/irritation</u>	
Skin corrosion/irritation	Irritating to skin.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Causes serious eye irritation.
<u>Respiratory sensitization</u>	
Respiratory sensitization	Based on available data the classification criteria are not met.
<u>Skin sensitization</u>	
Skin sensitization	Based on available data the classification criteria are not met.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Based on available data the classification criteria are not met.
<u>Carcinogenicity</u>	
Carcinogenicity	Does not contain any substances known to be carcinogenic.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	Based on available data the classification criteria are not met.

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Reproductive toxicity - development Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure STOT SE 3 - H335

Target organs Respiratory system, lungs

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Not classified as a specific target organ toxicant after a single exposure.

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

Inhalation May cause respiratory system irritation.

Ingestion On contact, immediate bonding of mouth could occur.

Skin Contact On contact, immediate bonding of the skin will occur. May cause skin irritation.

Eye contact Irritating to eyes. On contact, will bond eyelids together. Vapours are lachrymatory.

Route of exposure Ingestion Inhalation Skin and/or eye contact

Target Organs Respiratory system, lungs

Toxicological information on ingredients.

methyl 2-cyanoacrylate

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 4,440.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 2,000.1

Species Rabbit

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ dust/mist mg/l) 21.0

Species Rat

Skin corrosion/irritation

Animal data Erythema/eschar score: Well defined erythema (2). Irritating.

Serious eye damage/irritation

Serious eye damage/irritation Irritating to eyes.

Skin sensitization

Skin sensitization Guinea pig maximization test (GPMT) - Guinea pig: Not sensitizing.

Germ cell mutagenicity

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Genotoxicity - in vitro	Bacterial reverse mutation test: Negative.
Genotoxicity - in vivo	Gene mutation: Negative.
<u>Carcinogenicity</u>	
Carcinogenicity	There is no evidence that the product can cause cancer.
<u>Reproductive toxicity</u>	
Reproductive toxicity - development	No evidence of reproductive toxicity in animal studies.
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	No specific test data are available.
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	No specific test data are available.
<u>Aspiration hazard</u>	
Aspiration hazard	No data available.

12. Ecological information

Ecotoxicity There are no data on the ecotoxicity of this product.

Bioaccumulative potential

Partition coefficient Not available.

13. Disposal considerations

Waste treatment methods

General information Dispose of according to Federal, State/Provincial and local regulations. Refer to section 8 before handling.

14. Transport information

Sea transport notes Not classified.

Air transport notes Applies only to inner containers > 500ml. Inner packaging containing less than 500ml are unregulated for air transportation and may be shipped unrestricted. But inner packages containing more than 500ml meet the criteria of IATA 3.9.2.1 and are regulated. The "inner package" is the individual bottle, tube or drum, not the outer packaging such as a fiberboard box or carton containing many bottles.
Permabond 3g, 20gr, 1 ounce (28.4 gr), 1 pound (454gr) and 500ml, are not restricted for air transportation.

DOT transport notes This product is not regulated for road transportation in accordance with 49 CFR Exceptions. Please note that Cyanoacrylates are not restricted for domestic ground transportation in non bulk containers (The DOT defines a bulk container as a "Package" containing more than 450 liters. The "Package" is the individual bottle, tube or drum, not a carton containing many bottles

UN Number

UN No. (IMDG) Not applicable

UN No. (ICAO) 3334

UN No. (DOT) NA1993

UN proper shipping name

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Proper shipping name (IMDG) Not applicable

Proper shipping name (ICAO) AVIATION REGULATED LIQUID, N.O.S. (contains methyl cyanoacrylate)

Proper shipping name (DOT) COMBUSTIBLE LIQUID, N.O.S. (Cyanoacrylate ester)

Transport hazard class(es)

DOT hazard class Combustible Liquid

IMDG Class Not applicable

ICAO class/division 9

Packing group

IMDG packing group Not applicable

ICAO packing group III

DOT packing group III

Environmental hazards

Environmentally Hazardous Substance

No.

15. Regulatory information

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities

None above reporting limits.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

None above reporting limits

SARA Extremely Hazardous Substances EPCRA Reportable Quantities

None above reporting limits

SARA 313 Emission Reporting

None above reporting limits

SARA (311/312) Hazard Categories

Acute
Chronic
Fire
Reactivity

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm

Inventories

Canada - DSL/NDSL

All the ingredients are listed or exempt.

US - TSCA

All the ingredients are listed or exempt.

PermaBond 910

US - TSCA 12(b) Export Notification

None above reporting limits

16. Other information

Classification abbreviations and acronyms	Eye Irrit. = Eye irritation Flam. Liq. = Flammable liquid Skin Irrit. = Skin irritation STOT SE = Specific target organ toxicity-single exposure
Revision date	10/20/2020
Revision	6
Supersedes date	10/1/2018
Hazard statements in full	H227 Combustible liquid. H315 Causes skin irritation. H319 Causes serious eye irritation. H335 May cause respiratory irritation.

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 process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

1. IDENTIFICATION

Product Name	Polyken 221, 231
Recommended use of the chemical and restrictions on use	
Identified uses	Pressure Sensitive Adhesive
Company Identification	Berry Plastics Corporation 25 Forge Parkway Franklin, MA 02038
Customer Information Number	(800) 248-7659 (Monday – Friday 8:00 am to 5:00 pm) msdstechical@berryplastics.com
Emergency Telephone Number	
Chemtrec Number	Within USA and Canada: 1-800-424-9300 CCN22955 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)
Issue Date	June 26, 2014
Supersedes Date	March 8, 2010

Safety Data Sheet prepared in accordance with OSHA's Hazard Communication Standard (29 CFR 1910.1200) and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

2. HAZARD IDENTIFICATION

Hazard Classification
Acute hazard to the aquatic environment – Category 1 (This classification not adopted by OSHA)

Label Elements
Hazard Symbols



Signal Word: Warning

Hazard Statements
Very toxic to aquatic life.

Precautionary Statements

Prevention
Avoid release to the environment.

Response
Collect spillage.

2. HAZARD IDENTIFICATION

Storage

None

Disposal

Dispose of contents/container in accordance with local regulation.

Other Hazards

None identified.

Specific Concentration Limits

The values listed below represent the percentages of ingredients of unknown toxicity.

Acute oral toxicity	20 - 30%
Acute dermal toxicity	40 - 50%
Acute inhalation toxicity	90 - 100%
Acute aquatic toxicity	90 - 100%

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms:

This product is a mixture.

Component	CAS Number	Concentration
Polymers and Resins	N.A.	25 - 35%
Polymerized Rosin	N.A.	10 - 20%
Inorganic Compound(s)	N.A.	1 - 10%
Zinc Oxide	1314-13-2	1 - 10%

4. FIRST- AID MEASURES

Description of necessary first-aid measures**Eyes**

Immediately flood the eye with plenty of water. Obtain medical attention if symptoms persist.

Skin

Wash skin thoroughly with soap and water. Obtain medical attention if symptoms persist.

Ingestion

Obtain medical attention immediately.

Inhalation

Remove person to fresh air if symptoms occur. Seek medical attention if symptoms persist.

Most important symptoms/effects, acute and delayed

Aside from the information found under Description of necessary first aid measures (above) and Indication of immediate medical attention and special treatment needed, no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed**Notes to Physicians**

Treat symptomatically.

5. FIRE - FIGHTING MEASURES

Suitable Extinguishing Media

Water spray, carbon dioxide and dry chemical.

Specific hazards arising from the chemical

May release hazardous vapors during a fire.

Special Protective Actions for Fire-Fighters

Wear full protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Wear appropriate protective clothing.

Environmental Precautions

Prevent the material from entering drains or watercourses.

Methods and materials for containment and cleaning up

Pick up and transfer into suitable containers for recovery or disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Wear appropriate protective clothing.

Conditions for safe storage

Store away from sources of heat or ignition. Storage area should be: cool - dry - well ventilated - out of direct sunlight - away from sources of ignition(heat, sparks, flames, pilot lights) - away from incompatible materials (see Section 10)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Zinc Oxide

ACGIH: TLV 2 mg/m³ 8h TWA, respirable fraction, 15 min STEL 10 mg/m³

OSHA: Z-1 PEL 5 mg/m³, zinc oxide fume

OSHA: Z-1 PEL 5 mg/m³, respirable fraction

OSHA: Z-1 PEL 15 mg/m³, total dust

Appropriate engineering controls

No specific measures necessary. Good general room ventilation is expected to be adequate to control airborne levels.

Individual protection measures**Respiratory Protection**

Respiratory protection not normally required.

Skin Protection

Not required under normal conditions of use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye/Face Protection

Safety glasses

Body Protection

Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance**Physical State** Solid: Polyethylene coated cloth backing with a rubber based pressure sensitive adhesive**Color** White, silver ,black, or olive drab backing with beige adhesive**Odor**

Slight

Odor Threshold

No data available

pH

Not applicable

Density (g/yd²)

270 - 280

Boiling Range/Point (°C/F)

Not applicable

Melting Point (°C/F)

Not applicable

Flash Point (PMCC) (°C/F)

Not applicable

Vapor Pressure

Not applicable

Evaporation Rate (BuAc=1)

Not applicable

Solubility in Water

Negligible

Vapor Density (Air = 1)

Not applicable

VOC (%)

0

Partition coefficient (n-octanol/water)

Not applicable

Viscosity

Not applicable

Auto-ignition Temperature

No data available

Decomposition Temperature

No data available

Upper explosive limit

No data available

Lower explosive limit

No data available

Flammability (solid, gas)

No data available

10. STABILITY AND REACTIVITY

Reactivity

Data is not available.

Chemical Stability

Stable under normal conditions.

Possibility of hazardous reactions

Hazardous polymerization will not occur.

Conditions to Avoid

Heat, sparks, flames - high temperatures - contact with incompatible materials

Incompatible Materials

Strong acids - bases - oxidizers

10. STABILITY AND REACTIVITY

Hazardous Decomposition Products

Oxides of carbon – smoke – oxides of nitrogen – acrolein – aldehydes – alcohols – hydrocarbons – oligomers – waxes – sulfur oxides

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Available data indicates this product is not expected to be acutely toxic.

Specific Target Organ Toxicity (STOT) – single exposure

Available data indicates this product is not expected to cause target organ effects after a single exposure.

Specific Target Organ Toxicity (STOT) – repeat exposure

Available data indicates this product is not expected to cause target organ effects after repeated exposure.

Serious Eye damage/Irritation

Available data indicates this product is not expected to cause eye irritation.

Skin Corrosion/Irritation

Available data indicates this product is not expected to cause skin irritation.

Respiratory or Skin Sensitization

Available data indicates this product is not expected to cause respiratory sensitization.

Polymerized rosin: Not found to be a skin sensitizer in the Guinea Pig Maximization Test (GPMT), and showed potential for mild skin sensitization in the Local Lymph Node Assay (LLNA) test.

Carcinogenicity

Not considered carcinogenic by NTP, IARC, and OSHA.

Germ Cell Mutagenicity

Available data indicates this product is not expected to be mutagenic.

Reproductive Toxicity

Available data indicates this product is not expected to cause reproductive toxicity or birth defects.

Aspiration Hazard

Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

EcotoxicityZinc Oxide:

LC50 Rainbow trout, 96h, 1.1 mg/l

EC50 Daphnia magna, 48h, 0.098 mg/l

Aquatic Chronic - Category 1, Very toxic to aquatic life with long lasting effects (ECHA classification)

Mobility in soil

No relevant studies identified.

12. ECOLOGICAL INFORMATION

Persistence/Degradability

No relevant studies identified.

Bioaccumulative Potential

No relevant studies identified.

Other adverse effects

No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose of in accordance with all applicable local and national regulations.

14. TRANSPORT INFORMATION

DOT CFR 172.101 Data	Not Regulated
UN Proper Shipping Name	Not Regulated
UN Class	None
UN Number	None
UN Packaging Group	None
Classification for AIR Transportation (IATA)	Consult current IATA Regulations prior to shipping by air.
Environmental Hazards	Not a marine pollutant

15. REGULATORY INFORMATION

United States TSCA Inventory

All components of this product are in compliance or are exempt from inventory listing requirements of the US Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

Canada DSL Inventory

All components of this product have not been verified for inclusion or are exempt from listing on the Domestic Substance List (DSL).

WHMIS Classification

None

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

California Proposition 65

This product contains the following materials which the State of California has found to cause cancer, birth defects or other reproductive harm: None

SARA Title III Sect. 311/312 Categorization

None

SARA Title III Sect. 313

This product contains the following chemicals that are listed in Section 313 at or above de minimis concentrations: Zinc Oxide (1314-13-2)

16. OTHER INFORMATION

NFPA Ratings

NFPA Code for Flammability - 0
NFPA Code for Health - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards – None

HMIS Ratings

HMIS Code for Flammability - 0
HMIS Code for Health - 0
HMIS Code for Physical Hazard - 0
HMIS Code for Personal Protection - See Section 8
*Chronic

Legend

ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstracts Service
ECHA: European Chemicals Agency
IARC: International Agency for Research on Cancer
N/A: Denotes no applicable information found or available
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
SDS: Safety Data Sheet
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value

Information Source and References

This SDS is prepared by Hazard Communication Specialists based on information provided by internal company references.

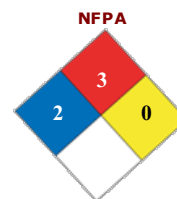
Prepared By: EnviroNet LLC.

The information and recommendations presented in this SDS are based on sources believed to be accurate. Berry Plastics Corporation assumes no liability for the accuracy or completeness of this information. It is the user's responsibility to determine the suitability of the **material** for their particular purposes. In particular, 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 ensure that any use **or disposal** of the material is in accordance with applicable Federal, State, and local laws and regulations.

SAFETY DATA SHEET

SECTION 1 : IDENTIFICATION

Product Name: PSQT1295
Product Code: PSQT1295
SDS Manufacturer Number: 3016LTDQTY
Product Description: Presaturated wipes containing 100% Acetone
Synonyms: Acetone, 2-Propanone, Dimethyl Ketone, Ketone Propane, beta-Ketopropane.
Manufacturer Name: Contec, Inc.
Address: 525 Locust Grove
 Spartanburg, South Carolina 29303
 USA
Website: www.contecinc.com
General Phone Number: +1-864-503-8333
Emergency Phone Number: Chemtrec® US: 1-800-424-9300 International: 1-703-527-3887
SDS Creation Date: September 03, 2014
SDS Revision Date: April 02, 2019



HMIS	
Health Hazard	2*
Fire Hazard	3
Reactivity	0
Personal Protection	X

* Chronic Health Effects

SECTION 2 : HAZARD(S) IDENTIFICATION

GHS Pictograms:



Signal Word: DANGER!

GHS Class: Flammable Liquid, Category 2..
 Eye Irritant, Category 2..
 Specific Target Organ Toxicity, Single Exposure, Category 3.

Hazard Statements: Highly flammable liquid and vapor.
 Causes serious eye irritation.
 May cause drowsiness or dizziness.

Precautionary Statements: Keep away from heat/sparks/open flames — No smoking.
 In case of fire: Use dry chemical, carbon dioxide to extinguish small fires. Use water for large fires.
 Wear protective gloves, protective clothing, and eye protection.
 Avoid breathing vapors.
 Store in a well-ventilated place. Keep container tightly closed.
 IF IN EYES: Rinse cautiously with water for several minutes.
 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 ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 Dispose of contents/container in accordance with Local, State, Federal and Provincial regulations.

Emergency Overview: DANGER! Highly flammable. Irritant.

Route of Exposure: Eyes. Skin. Inhalation.

Potential Health Effects:

Eye: Can cause moderate irritation, burning sensation, tearing, redness, and swelling. Overexposure may cause lacrimation, conjunctivitis, corneal damage and permanent injury.

Skin: Can cause skin irritation; itching, redness, rashes, hives, burning, and swelling.

Inhalation: Respiratory tract irritant. High concentration may cause dizziness, headache, and anesthetic effects.

Ingestion: Causes irritation, a burning sensation of the mouth, throat and gastrointestinal tract and abdominal pain.

Chronic Health Effects: Prolonged skin contact may lead to burning associated with severe reddening, swelling, and possible tissue destruction.

Signs/Symptoms: Overexposure can cause headaches, dizziness, nausea, and vomiting.

Target Organs: Eyes. Skin. Respiratory system. Digestive system. Central nervous system.

Aggravation of Pre-Existing Conditions: Individuals with pre-existing skin disorders, asthma, allergies or known sensitization may be more susceptible to the effects of this product.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

Acetone	67-64-1	100 by weight	200-662-2
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SECTION 4 : FIRST AID MEASURES

Eye Contact: Immediately flush eyes with plenty of water for at least 15 to 20 minutes. Ensure adequate flushing of the eyes by separating the eyelids with fingers. Get immediate medical attention.

Skin Contact: Immediately wash skin with plenty of soap and water for 15 to 20 minutes, while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.

Ingestion: If swallowed, do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

Other First Aid: Due to possible aspiration into the lungs, DO NOT induce vomiting if ingested. Provide a glass of water to dilute the material in the stomach. If vomiting occurs naturally, have the person lean forward to reduce the risk of aspiration.

SECTION 5 : FIRE FIGHTING MEASURES

Flammable Properties: Flammable.

Flash Point: -20°C (-4°F)

Flash Point Method: Tag closed cup. (TCC) ASTM D56

Auto Ignition Temperature: 837°F (465°C)

Lower Flammable/Explosive Limit: 2.6 % by volume

Upper Flammable/Explosive Limit: 12.8 % by volume

Fire Fighting Instructions: Evacuate area of unprotected personnel. Use cold water spray to cool fire exposed containers to minimize risk of rupture. Do not enter confined fire space without full protective gear. If possible, contain fire run-off water.

Extinguishing Media: Use carbon dioxide (CO₂) or dry chemical when fighting fires involving this material.

Protective Equipment: In the event of a fire, wear Self-Contained Breathing Apparatus (SCBA), approved or in accordance to NFPA, NIOSH, and/or European Standard EN 137 guidelines or equivalent and full protective gear.

NFPA Ratings:

NFPA Health:	2
NFPA Flammability:	3
NFPA Reactivity:	0

SECTION 6 : ACCIDENTAL RELEASE MEASURES

Personal Precautions: Evacuate area and keep unnecessary and unprotected personnel from entering the spill area.

Environmental Precautions: Avoid runoff into storm sewers, ditches, and waterways. Comply with all government regulations on reporting releases.

Spill Cleanup Measures: Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container. Provide ventilation. Collect spill with a non-sparking tool. Place into a suitable container for disposal. Clean up spills immediately observing precautions in the protective equipment section. After removal, flush spill area with soap and water to remove trace residue. Flammable, eliminate ignition sources. Vapors can form an ignitable mixture with air. Vapors can flow along surfaces to distant ignition sources and flash back. Ventilate area. Use proper personal protective equipment as listed in Section 8.

Methods for containment: Spills are very unlikely, because the wiper fabric has absorbed the liquid solvent solution. In the event of a spill, contain with an inert absorbent.

SECTION 7 : HANDLING and STORAGE

Handling: Use with adequate ventilation. Avoid breathing vapor, aerosol or mist. Do not reuse containers without proper cleaning or reconditioning.

Storage: Store in a cool, dry, well ventilated area away from sources of heat, combustible materials, direct sunlight, and incompatible substances. Keep container tightly closed when not in use.

Special Handling Procedures: Hazardous liquid or vapor residue may remain in emptied container. Do not reuse, heat, burn, pressurize, cut, weld, braze, solder, drill, grind, expose to sparks, flame, or ignition sources of empty containers without proper commercial cleaning or reconditioning.

Hygiene Practices: Wash thoroughly after handling.

SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls:	Use appropriate engineering control such as process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Good general ventilation should be sufficient to control airborne levels. Where such systems are not effective wear suitable personal protective equipment, which performs satisfactorily and meets OSHA or other recognized standards. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment.
Eye/Face Protection:	Safety glasses with side shields must be worn at all times. If splash hazard exists, wear chemical splash goggles and/or face shield.
Skin Protection Description:	Wear appropriate protective gloves and other protective apparel to prevent skin contact. Consult manufacturer's data for permeability data.
Respiratory Protection:	Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Comply with the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149 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.
Other Protective:	Facilities storing or utilizing this material should be equipped with an eyewash and a deluge shower safety station.

EXPOSURE GUIDELINES

Acetone:

Guideline ACGIH:	TLV-TWA: 500 ppm TLV-STEL: 750 ppm
Guideline OSHA:	OSHA-TWA: 1000 ppm

SECTION 9 : PHYSICAL and CHEMICAL PROPERTIES

Physical State Appearance:	Liquid soaked wipes.
Color:	colourless.
Boiling Point:	133°F (56°C)
Melting Point:	-142°F (-97°C)
Specific Gravity:	0.79
Solubility:	100 % @20°C
Vapor Density:	2.0 (air = 1)
Vapor Pressure:	185 mmHg @20°C
Percent Volatile:	100 % by weight
Evaporation Rate:	>10 (butyl acetate = 1)
pH:	Not determined.
Viscosity:	0.4 mm ² /s
Coefficient of Water/Oil Distribution:	-0.24
Flash Point:	-20°C (-4°F)
Flash Point Method:	Tag closed cup. (TCC) ASTM D56
Auto Ignition Temperature:	837°F (465°C)
Percent Solids by Weight	0

SECTION 10 : STABILITY and REACTIVITY

Chemical Stability:	Stable under normal temperatures and pressures.
Hazardous Polymerization:	Not reported.
Conditions to Avoid:	Extreme heat, sparks, and open flame. Incompatible materials, oxidizers and oxidizing conditions.
Incompatible Materials:	Oxidizing agents. Strong acids and alkalis.

SECTION 11 : TOXICOLOGICAL INFORMATION

Acetone:

Eye:	Eye - Human Standard Draize test.: 500 ppm Eye - Rabbit Standard Draize test.: 20 mg/24H Eye - Rabbit Standard Draize test.: 10 uL Eye - Human Standard Draize test.: 186300 ppm Eye - Rabbit Standard Draize test.: 20 mg
-------------	--

Skin: Administration onto the skin - Rabbit : 20 mL/kg [Details of toxic effects not reported other than lethal dose value]
Administration onto the skin - Guinea pig : >9400 uL/kg [Details of toxic effects not reported other than lethal dose value]
Administration onto the skin - Mouse : 31.6 ug/kg/2W (Intermittent) [Biochemical - Metabolism (Intermediary) - Other]
Administration onto the skin - Rabbit : 395 mg
Administration onto the skin - Rabbit : 500 mg/24H

Inhalation: Inhalation - Rat LC50: 50100 mg/m³ [Details of toxic effects not reported other than lethal dose value]
Inhalation - Rat LC50: 50100 mg/m³/8H [Details of toxic effects not reported other than lethal dose value]
Inhalation - Mouse LC50: 44 gm/m³/4H [Details of toxic effects not reported other than lethal dose value]

Ingestion: Oral - Rat LD50: 5800 mg/kg [Details of toxic effects not reported other than lethal dose value]
Oral - Rat LD50: 5800 mg/kg [Behavioral - Altered sleep time (including change in righting reflex) Behavioral - Tremor]
Oral - Mouse LD50: 3 gm/kg [Details of toxic effects not reported other than lethal dose value]

SECTION 12 : ECOLOGICAL INFORMATION

Ecotoxicity: No ecotoxicity data was found for the product.

Environmental Fate: No environmental information found for this product.

SECTION 13 : DISPOSAL CONSIDERATIONS

Waste Disposal: Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 or the EU Directive 2008/98/EC on waste for the classifications of hazardous waste prior to disposal. Furthermore, consult with your state, local, or provincial waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in accordance to the EPA and/or state and local guidelines.

Important Disposal Information: DANGER! Rags, steel wool and waste soaked with this product may spontaneously catch fire if improperly discarded or stored. To avoid a spontaneous combustion fire, immediately after use, place rags, steel wool or waste in a sealed, water-filled, metal container.

SECTION 14 : TRANSPORT INFORMATION

DOT Shipping Name: Solids Containing Flammable Liquid, n.o.s. (Acetone) (Limited Quantity)

DOT Hazard Class: 4.1

DOT Packing Group: II

IATA Shipping Name: Solids Containing Flammable Liquid, n.o.s. (Acetone)

IATA Hazard Class: 4.1

IATA Packing Group: II

IMDG UN Number : UN3175 (Limited Quantity)

IMDG Shipping Name : Solids Containing Flammable Liquid, n.o.s. (Acetone) (Limited Quantity)

IMDG Hazard Class : 4.1

IMDG Packing Group : II

Marine Pollutant: No.

SECTION 15 : REGULATORY INFORMATION

Canada WHMIS: MacIsaac & Associates
440 Gloucester Street, Suite 2111
Ottawa, Ontario, K1R 7T8 Canada
+1 (613) 236-2250

Risk Phrases: R11 - Highly flammable.
R36 - Irritating to eyes.
R66 - Repeated exposure may cause skin dryness or cracking.
R67 - Vapours may cause drowsiness and dizziness.

Safety Phrase: S 9 - Keep container in a well-ventilated place.
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.
S46 - If swallowed, seek medical advice immediately and show this container or label.
S 2 - Keep out of the reach of children.

Acetone :

TSCA Inventory Status: Listed

SARA: EPCRA - 40 CFR Part 372 - (SARA Title III) Section 313 Listed Chemical.

State Regulations: Listed in the State of Massachusetts Hazardous Substance List.
Listed in the New Jersey State Right to Know List.
Listed in the Pennsylvania State Hazardous Substances List.

Canada DSL: Listed

EC Number: 200-662-2

Canadian Regulations: WHMIS Hazard Class(es): B2
All components of this product are on the Canadian Domestic Substances List.

WHMIS Pictograms:



SECTION 16 : ADDITIONAL INFORMATION

HMIS Ratings:

HMIS Health Hazard: 2*

HMIS Fire Hazard: 3

HMIS Reactivity: 0

HMIS Personal Protection: X

SDS Creation Date: September 03, 2014

SDS Revision Date: April 02, 2019

SDS Author: Actio Corporation

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R40-2186-2 Part A

Safety Data Sheet

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 if possible).
First-aid measures after inhalation	Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.
First-aid measures after skin contact	Rinse immediately with plenty of water. Obtain medical attention if irritation develops or persists.
First-aid measures after eye contact	Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.
First-aid measures after ingestion	Do NOT induce vomiting. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

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

Symptoms/effects	Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after inhalation	May cause respiratory irritation.
Symptoms/effects after skin contact	May cause skin irritation.
Symptoms/effects after eye contact	May cause eye irritation.
Symptoms/effects after ingestion	Ingestion is likely to be harmful or have adverse effects.
Chronic symptoms	None expected under normal conditions of use.

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

If you feel unwell, seek medical advice (show the label where possible).

SECTION 5: Fire-Fighting measures

5.1. Extinguishing media

Suitable extinguishing media	Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	Do not use a heavy water stream. Use of heavy stream of water may spread fire. Application of water stream to hot product may cause frothing and increase fire intensity.

5.2. Special hazards arising from the substance or mixture

Fire hazard	Not considered flammable but may burn at high temperatures.
Explosion hazard	Product is not explosive.
Reactivity	Hazardous reactions will not occur under normal conditions.

5.3. Advice for firefighters

Precautionary measures fire	Exercise caution when fighting any chemical fire.
Firefighting instructions	Use water spray or fog for cooling exposed containers.
Protection during firefighting	Do not enter fire area without proper protective equipment, including respiratory protection.
Other information	Refer to Section 9 for flammability properties.

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Safety Data Sheet

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid all contact with skin, eyes, or clothing. Avoid breathing (vapor, mist, spray).

6.1.1. For non-emergency personnel

Protective equipment Use appropriate personal protective equipment (PPE).

Emergency procedures Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment Equip cleanup crew with proper protection.

Emergency procedures Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

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 Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for cleaning up Clean up spills immediately and dispose of waste safely. Spills should be contained with mechanical barriers. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Hygiene measures Handle in accordance with good industrial hygiene and safety procedures. 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

Technical measures Comply with applicable regulations.

Storage conditions Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

Incompatible products Strong acids. Strong bases. Strong oxidizers.

7.3. Specific end use(s)

To provide protection against shock, vibration, moisture, ozone, dust, chemical and other environmental hazards. For professional use only.

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), or OSHA (PEL).

Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica (68909-20-6)		
USA OSHA	OSHA PEL (TWA) (mg/m ³)	6 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	20 mppcf (80mg/m ³ /%SiO ₂)

8.2. Exposure controls

Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas.
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Ensure all national/local regulations are observed.
Protective goggles. Gloves. Protective clothing.

Personal protective equipment



Materials for protective clothing

Chemically resistant materials and fabrics.

Hand protection

Wear chemically resistant protective gloves.

Eye protection

Chemical goggles or safety glasses.

Skin and body protection

Wear suitable protective clothing.

Respiratory protection

If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn.

Environmental exposure controls

Do not allow the product to be released into the environment.

Consumer exposure controls

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	: Liquid
Appearance	: Black
Odor	: Odorless
Odor threshold	: No data available
pH	: No data available
Evaporation Rate	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: > 135 °C (> 275 °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
Specific Gravity	: > 1

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Solubility	: No data available
Partition coefficient: n-octanol/water	: No data available
Viscosity	: No data available

9.2. Other information

VOC content < 1 %

SECTION 10: Stability and reactivity

10.1. Reactivity

Hazardous reactions will not occur under normal conditions.

10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Ignition sources. Incompatible materials.

10.5. Incompatible materials

Strong acids, strong bases, strong oxidizers.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO₂). Silicon oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	Not classified
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/effects after inhalation	May cause respiratory irritation.
Symptoms/effects after skin contact	May cause skin irritation.
Symptoms/effects after eye contact	May cause eye irritation.
Symptoms/effects after ingestion	Ingestion is likely to be harmful or have adverse effects.
Chronic symptoms	None expected under normal conditions of use.

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Safety Data Sheet

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SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified.

12.2. Persistence and degradability

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Persistence and degradability	Not established.
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12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal : Dispose of waste material in accordance with all local, regional, national, and international regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT / IMDG / IATA

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. 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

All components of this product are listed or exempted from being listed on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

15.2. US State regulations

Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica (68909-20-6)

U.S. - Texas - Effects Screening Levels - Long Term

U.S. - Texas - Effects Screening Levels - Short Term

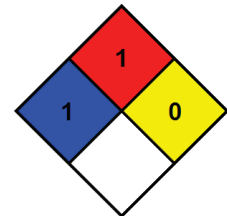
R40-2186-2 Part A

Safety Data Sheet

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SECTION 16: Other information, including date of preparation or last revision

Revision date	03/15/2017
Other information	This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.
Full text of H-phrases:	
NFPA health hazard	1 - Materials that, under emergency conditions, can cause significant irritation.
NFPA fire hazard	1 - Materials that must be preheated before ignition can occur.
NFPA reactivity	0 - Material that in themselves are normally stable, even under fire conditions.
Hazard Rating	
Health	1 Slight Hazard - Irritation or minor reversible injury possible
Flammability	1 Slight Hazard
Physical	0 Minimal Hazard



The information provided in this Safety Data Sheet (SDS) was prepared based on data believed to be accurate as of the date of this SDS. TO THE GREATEST EXTENT PERMITTED BY LAW, NUSIL TECHNOLOGY LLC AND ITS AFFILIATED COMPANIES ("NUSIL") EXPRESSLY DISCLAIMS ANY AND ALL REPRESENTATIONS AND WARRANTIES REGARDING THE INFORMATION CONTAINED HEREIN INCLUDING, WITHOUT LIMITATION, AS TO ACCURACY, COMPLETENESS, FITNESS FOR PURPOSE OR USE, MERCHANTABILITY, NON-INFRINGEMENT, PERFORMANCE, SAFETY, SUITABILITY AND STABILITY. This SDS is intended as a guide to the appropriate use, handling, storage and disposal of the product to which it relates by properly trained personnel, and is not intended to be comprehensive. Users of NuSil's products are advised to perform their own tests and to exercise their own judgment to determine the safety, suitability and appropriate use, handling, storage and disposal of each product and product combination for their own purposes and uses. TO THE GREATEST EXTENT PERMITTED BY LAW, NUSIL DISCLAIMS LIABILITY FOR, AND BY USING NUSIL'S PRODUCTS PURCHASER AGREES THAT UNDER NO CIRCUMSTANCES SHALL NUSIL BE LIABLE FOR, SPECIAL, INDIRECT, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES OF ANY TYPE OR KIND, INCLUDING WITHOUT LIMITATION, FOR LOSS OF PROFITS, REPUTATIONAL DAMAGE, PRODUCT RECALL OR BUSINESS INTERRUPTION.

Nusil US GHS SDS

R40-2186-2 Part B



Safety Data Sheet

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

Revision date:
03/15/2017

Date of issue:
04/09/2014

Version: 2.0

SECTION 1: Identification

1.1. Product identifier

Product Form: Mixtures
Product Name: R40-2186-2 Part B
Synonyms: Non-Slumping, Black Silicone Elastomer

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

Use of the substance/mixture: To provide protection against shock, vibration, moisture, ozone, dust, chemical and other environmental hazards. For professional use only.

1.3. Details of the supplier of the safety data sheet

NuSil Technology LLC
1050 Cindy Lane
Carpinteria, California 93013
USA
(805) 684-8780
ehs@nusil.com
www.nusil.com

1.4. Emergency telephone number

Emergency number: 800-424-9300 CHEMTREC (in US); +1 703-527-3887 CHEMTREC (International and Maritime)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Not classified

2.2. Label elements

GHS-US labeling

No labeling applicable

2.3. Other hazards

Other hazards not contributing to the classification: 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. Mixtures

Name	Product identifier	%	GHS-US classification
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	(CAS-No.) 68909-20-6	20 - 30	Not classified
Siloxanes and Silicones,	(CAS-No.) 68037-59-2	< 5	Flam. Liq. 4, H227

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dimethyl, methyl hydrogen			Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
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Full text of H-phrases: 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 if possible).
First-aid measures after inhalation	Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.
First-aid measures after skin contact	Rinse immediately with plenty of water. Obtain medical attention if irritation develops or persists.
First-aid measures after eye contact	Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.
First-aid measures after ingestion	Do NOT induce vomiting. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

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

Symptoms/effects	Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after inhalation	: May cause respiratory irritation.
Symptoms/effects after skin contact	May cause skin irritation.
Symptoms/effects after eye contact	May cause eye irritation.
Symptoms/effects after ingestion	Ingestion is likely to be harmful or have adverse effects.
Chronic symptoms	None expected under normal conditions of use.

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

If you feel unwell, seek medical advice (show the label where possible).

SECTION 5: Fire-Fighting measures

5.1. Extinguishing media

Suitable extinguishing media	Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	Do not use a heavy water stream. Use of heavy stream of water may spread fire. Application of water stream to hot product may cause frothing and increase fire intensity.

5.2. Special hazards arising from the substance or mixture

Fire hazard	Not considered flammable but may burn at high temperatures.
Explosion hazard	Product is not explosive.
Reactivity	Hazardous reactions will not occur under normal conditions.

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5.3. Advice for firefighters

Precautionary measures fire	Exercise caution when fighting any chemical fire. Under fire conditions, hazardous fumes will be present.
Firefighting instructions	Use water spray or fog for cooling exposed containers.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.
Other information	Refer to Section 9 for flammability properties.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures Avoid all contact with skin, eyes, or clothing. Avoid breathing (vapor, mist, spray).

6.1.1. For non-emergency personnel

Protective equipment Use appropriate personal protective equipment (PPE).
Emergency procedures Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment Equip cleanup crew with proper protection.
Emergency procedures Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

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 Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for cleaning up Clean up spills immediately and dispose of waste safely. Spills should be contained with mechanical barriers. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Hygiene measures Handle in accordance with good industrial hygiene and safety procedures. 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

Technical measures Comply with applicable regulations.
Storage conditions Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.
Incompatible products Strong acids. Strong bases. Strong oxidizers.

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7.3. Specific end use(s)

To provide protection against shock, vibration, moisture, ozone, dust, chemical and other environmental hazards. For professional use only.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), or OSHA (PEL).

Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica (68909-20-6)		
USA OSHA	OSHA PEL (TWA) (mg/m ³)	6 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	20 mppcf (80mg/m ³ /%SiO ₂)

8.2. Exposure controls

Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed. Protective goggles. Gloves. Protective clothing.

Personal protective equipment



Materials for protective clothing

Chemically resistant materials and fabrics.

Hand protection

Wear chemically resistant protective gloves.

Eye protection

Chemical goggles or safety glasses.

Skin and body protection

Wear suitable protective clothing.

Respiratory protection

If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn.

Environmental exposure controls

Do not allow the product to be released into the environment.

Consumer exposure controls

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	: Liquid
Appearance	: Translucent
Odor	: Odorless
Odor threshold	: No data available
pH	: No data available
Evaporation Rate	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: > 135 °C (> 275 °F)
Auto-ignition Temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available

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Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Specific Gravity	: > 1
Solubility	: No data available
Partition coefficient: n-octanol/water	: No data available
Viscosity	: No data available

9.2. Other information

VOC content < 1 %

SECTION 10: Stability and reactivity

10.1. Reactivity

Hazardous reactions will not occur under normal conditions.

10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Ignition sources. Incompatible materials.

10.5. Incompatible materials

Strong acids, strong bases, strong oxidizers.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO₂). Silicon oxides. Will decompose above 150 °C (> 300 °F) releasing formaldehyde vapors. Formaldehyde is a potential carcinogen and can act as a potential skin and respiratory sensitizer. Formaldehyde can also cause respiratory and eye irritation. May produce explosive hydrogen gas on contact with incompatibilities or upon thermal decomposition.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	Not classified
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/effects after inhalation	May cause respiratory irritation.
Symptoms/effects after skin contact	May cause skin irritation.
Symptoms/effects after eye contact	May cause eye irritation.

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Symptoms/effects after ingestion	Ingestion is likely to be harmful or have adverse effects.
Chronic symptoms	None expected under normal conditions of use.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general Not classified.

12.2. Persistence and degradability

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Persistence and degradability	Not established.
-------------------------------	------------------

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal Dispose of waste material in accordance with all local, regional, national, and international regulations.

Ecology - waste materials Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT / IMDG / IATA

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. 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

All components of this product are listed or exempted from being listed on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

15.2. US State regulations

Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica (68909-20-6)
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U.S. - Texas - Effects Screening Levels - Long Term

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Safety Data Sheet

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

U.S. - Texas - Effects Screening Levels - Short Term

SECTION 16: Other information, including date of preparation or last revision

Date of Preparation or Latest Revision 03/15/2017

Revision

Other information

This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

Full text of H-phrases:

Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 4	Flammable liquids Category 4
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H227	Combustible liquid
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation

NFPA health hazard

1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard

1 - Materials that must be preheated before ignition can occur.

NFPA reactivity

0 - Material that in themselves are normally stable, even under fire conditions.

Hazard Rating

Health

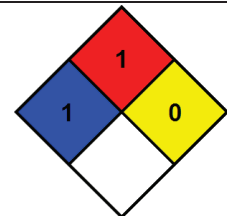
1 Slight Hazard - Irritation or minor reversible injury possible

Flammability

1 Slight Hazard

Physical

0 Minimal Hazard



The information provided in this Safety Data Sheet (SDS) was prepared based on data believed to be accurate as of the date of this SDS. TO THE GREATEST EXTENT PERMITTED BY LAW, NUSIL TECHNOLOGY LLC AND ITS AFFILIATED COMPANIES ("NUSIL") EXPRESSLY DISCLAIMS ANY AND ALL REPRESENTATIONS AND WARRANTIES REGARDING THE INFORMATION CONTAINED HEREIN INCLUDING, WITHOUT LIMITATION, AS TO ACCURACY, COMPLETENESS, FITNESS FOR PURPOSE OR USE, MERCHANTABILITY, NON-INFRINGEMENT, PERFORMANCE, SAFETY, SUITABILITY AND STABILITY. This SDS is intended as a guide to the appropriate use, handling, storage and disposal of the product to which it relates by properly trained personnel, and is not intended to be comprehensive. Users of NuSil's products are advised to perform their own tests and to exercise their own judgment to determine the safety, suitability and appropriate use, handling, storage and disposal of each product and product combination for their own purposes and uses. TO THE GREATEST

R40-2186-2 Part B

Safety Data Sheet

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

EXTENT PERMITTED BY LAW, NUSIL DISCLAIMS LIABILITY FOR, AND BY USING NUSIL'S PRODUCTS PURCHASER AGREES THAT UNDER NO CIRCUMSTANCES SHALL NUSIL BE LIABLE FOR, SPECIAL, INDIRECT, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES OF ANY TYPE OR KIND, INCLUDING WITHOUT LIMITATION, FOR LOSS OF PROFITS, REPUTATIONAL DAMAGE, PRODUCT RECALL OR BUSINESS INTERRUPTION.

Nusil US GHS SDS

SBS Number **78249**

Entry Date **10/04/2018** Log-In Administrator Name *Julian* Date MSDS Final Entry **10/04/2018**

Identifiers	
MFG_PROD	R40-2186-2 Part B
MFG_PN	
P&W_PROD	P&W_NUM
Synonyms	
CHEMNAME	CAS_NUMBER
New or Revision	<input type="checkbox"/> New <input type="checkbox"/> Revised <i>Note: Check one or the other.</i>
SAP ID#	231459 <i>Note:</i>
Manufacturer's Name	NuSill Technology LLC
Revision Date	3/15/2017

Hazardous Ingredients	Percentages (%)			Chemical Name
	Avg	Min	Max	
1	0	0	0	
2	0	0	0	
3	0	0	0	
4	0	0	0	
5	0	0	0	
6	0	0	0	
7	0	0	0	
8	0	0	0	
9	0	0	0	
10	0	0	0	
11	0	0	0	
12	0	0	0	
13	0	0	0	
14	0	0	0	
15	0	0	0	
16	0	0	0	
17	0	0	0	
18	0	0	0	
19	0	0	0	
20	0	0	0	
21	0	0	0	
22	0	0	0	
23	0	0	0	
24	0	0	0	
25	0	0	0	
26	0	0	0	
27	0	0	0	
28	0	0	0	
29	0	0	0	
30	0	0	0	
31	0	0	0	

Total %	0
----------------	----------

1 Identification

- **Product identifier**
- **Trade name: Resbond 907TS Red**
- **Article number:** 907TS-Red
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Cotronics Corp
131 47th Street
Brooklyn, NY 11232
USA
- **Information department:** In the event of an emergency please call Chemtrec at 1 800-424-9300 (24 hour)

* 2 Hazard(s) identification

- **Classification of the substance or mixture**



Acute Tox. 4 H302 Harmful if swallowed.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.

- **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:**
Silicate
- **Hazard statements**
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
- **Precautionary statements**
P233 Keep container tightly closed.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P285 In case of inadequate ventilation wear respiratory protection.
P301+P310 If swallowed: Immediately call a doctor.
P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
P302+P352 If on skin: Wash with plenty of water.
P304+P312 IF INHALED: Call a doctor if you feel unwell.
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.
P308+P313 IF exposed or concerned: Get medical attention.
P333+P313 If skin irritation or rash occurs: Get medical attention.
P337+P313 If eye irritation persists: Get medical attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P404 Store in a closed container.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Trade name: Resbond 907TS Red

(Contd. of page 1)

· **HMIS-ratings (scale 0 - 4)**

HEALTH	1	Health = 1
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:**

Nonhazardous materials will not be listed separately.
When encapsulated in a liquid mixture, powders are not expected to pose a health hazard when processed under normal conditions of use.
Nonhazardous materials will not be listed separately

· **Components:**

1344-09-8 Silicate	25-<50%
1344-28-1 Alumina Oxide	2.5-<10%
1317-65-3 Calcium carbonate	0.1-<1%
64742-95-6 Solvent naphtha (petroleum), light aroma	0.1-<1%

4 First-aid measures

· **Description of first aid measures**

· **General information:** Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Move to a place with fresh air and keep at rest.
In case of unconsciousness and call a doctor.
If transporting move stably into a side position for transportation.

· **After skin contact:**

Immediately rinse with water.
If skin irritation continues, consult a doctor.

· **After eye contact:**

Rinse opened eye for several minutes under running water.
Get medical attention

· **After swallowing:** Do not induce vomiting; immediately call a doctor.

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:** CO2, extinguishing powder or water spray.

· **Special hazards arising from the substance or mixture**

Aluminum oxide, Silicon oxides
Carbon oxides, acid fluorides, fluorinated compounds, hydrogen fluoride, carbonyl fluoride, decomposition products (PTFE)

· **Advice for firefighters** Wear self-contained breathing apparatus, if necessary

· **Protective equipment:** Use personal protective equipment.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Not required.

· **Environmental precautions:** No special measures required.

· **Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
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.

(Contd. on page 3)

Trade name: Resbond 907TS Red

See Section 13 for disposal information.

(Contd. of page 2)

7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
- **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:** Keep in sealed containers
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep sealed container(s) at room temperature
Recommended to keep in a cool, dry condition atmosphere.
- **Specific end use(s)** No further relevant information available.

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:**
1317-65-3 Calcium carbonate
PEL Long-term value: 15* 5** mg/m³
*Total dust; **Respirable fraction
REL Long-term value: 10* 5** mg/m³
*Total dust; **Respirable dust
- **Additional information:** Personal protection is required while machining this material. Use suitable face/eye/hand protection.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Do not eat or drink while working.
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 eat or drink while working.
- **Breathing equipment:** Use suitable respiratory protective device in case of insufficient ventilation.
- **Protection of hands:** Impervious gloves
- **Eye protection:**



Tightly sealed goggles

* 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
- **Form:** Suspension
- **Color:** Red
- **Odor:** Odorless
- **pH-value:** Not determined.
- **Change in condition**
- **Melting point/Melting range:** Not determined
- **Boiling point/Boiling range:** Not applicable
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Not Applicable.
- **Danger of explosion:** Product does not present an explosion hazard.

(Contd. on page 4)

Trade name: Resbond 907TS Red

(Contd. of page 3)

- **Explosion limits:**
 - Lower:** Not Applicable
 - Upper:** Not Applicable.
- **Vapor pressure at 20 °C (68 °F):** 23 hPa (17.3 mm Hg)
- **Density at 20 °C (68 °F):** 1.4 g/cm³ (11.68 lbs/gal)
- **Solubility in / Miscibility with Water:** Miscibile
- **Solvent content:**
 - Organic solvents:** 0.9 %
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability** Stable under recommended storage conditions.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
 - Strong acids
 - Strong acids
 - Finely divided aluminum, powdered metals, potent oxidizers, related compounds (PTFE)
 - Chloroformates, peroxides, strong acids (diiron trioxide)
- **Hazardous decomposition products:** Carbon oxides, acid fluorides, fluorinated compounds, hydrogen fluoride, carbonyl fluoride

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**
 - 64742-95-6 Solvent naphtha (petroleum), light aroma**
 - Oral LD50 >6800 mg/kg (Rat)
 - Dermal LD50 >3400 mg/kg (rab)
 - Inhalative LC50/4 h >10.2 mg/l (Rat)
- **Primary irritant effect:**
- **On the skin:** Irritating to skin.
- **On the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
 - The product shows the following dangers according to internally approved calculation methods for preparations:
 - Harmful
 - Irritant
 - Lung irritation, Asthma
 - Stomach - Irregularities - Based on Human Evidence
 - The thermal decomposition vapors of fluorinated polymers may cause polymer fume fever with flu-like symptoms in humans.
- **Carcinogenic categories**
 - Carcinogenicity - mouse - oral (Montmorillonite)
 - Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Liver: Tumors. (Montmorillonite)
- **IARC (International Agency for Research on Cancer)**
 - 9002-84-0 Polytetrafluoroethylene: 3
 - 102-71-6 Triethanolamine: 3
 - 1309-37-1 Ferric oxide: 3
 - 14808-60-7 Quartz (SiO₂): 1
 - 7631-86-9 Amorphous silica: 3
 - 111-42-2 2,2'-Iminodiethanol: 2B
 - 7440-02-0 nickel: 1
 - 7439-92-1 Lead: 2B
 - 7440-38-2 Arsenic: 1

(Contd. on page 5)

Trade name: Resbond 907TS Red

(Contd. of page 4)

- 7440-43-9 Cadmium: 1
- 7439-97-6 Mercury: 3
- **NTP (National Toxicology Program)**
- 14808-60-7 Quartz (SiO₂): K
- 7440-02-0 nickel: R
- 7439-92-1 Lead: R
- 7440-38-2 Arsenic: K
- 7440-43-9 Cadmium: K
- **OSHA-Ca (Occupational Safety & Health Administration)**
- 7440-38-2 Arsenic
- 7440-43-9 Cadmium

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:**
- **General notes:** Not known to be hazardous to water.
- **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:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Dispose material in accordance with federal, state, local and international regulations.

14 Transport information

- **UN-Number**
- **DOT, ADR, ADN, IMDG, IATA** Not Regulated for Transport
- **UN proper shipping name**
- **DOT, ADR, ADN, IMDG, IATA** Not Regulated for Transport
- **Transport hazard class(es)**
- **DOT, ADR, ADN, IMDG, IATA**
- **Class** Not Regulated for Transport
- **Packing group**
- **DOT, ADR, IMDG, IATA** Not Regulated for Transport
- **Environmental hazards:**
- **Marine pollutant:** No
- **Special precautions for user** Not applicable.
- **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.
- **UN "Model Regulation":** Not Regulated for Transport

***15 Regulatory information**

- **Safety, health and environmental regulations/legislation specific for the substance or mixture** No further relevant information available.
- **SARA**
- **Section 313 (specific toxic chemical listings):**
- 1344-28-1 Alumina Oxide

(Contd. on page 6)
— US —

Trade name: Resbond 907TS Red

(Contd. of page 5)

7440-50-8 Copper

111-42-2 2,2'-Iminodiethanol

7440-02-0 nickel

7439-92-1 Lead

7440-38-2 Arsenic

7440-43-9 Cadmium

7439-97-6 Mercury

· **Section 302 (extremely hazardous substance):**

None of the ingredients are listed

· **Section 304 (emergency release notification):**

None of the ingredients are listed

· **Sections 311/312 (hazards)**

1344-28-1 Alumina Oxide: Chronic, Acute

1302-78-9 Colloidal Clay: Chronic

1332-58-7 Hydrous Aluminum Silicate: Chronic

1309-37-1 Ferric oxide: Acute

64742-95-6 Solvent naphtha (petroleum), light aroma: Fire

14808-60-7 Quartz (SiO₂): Chronic

7631-86-9 Amorphous silica: Chronic, Acute

7440-02-0 nickel: Chronic, Acute

7439-92-1 Lead: Chronic, Acute

7440-43-9 Cadmium: Chronic, Acute

7439-97-6 Mercury: Chronic, Acute

· **TSCA (Toxic Substances Control Act):**

None of the ingredients is listed.

· **RCRA (Resource Conservation and Recovery Act)**

7439-92-1 Lead: D027

7440-38-2 Arsenic: D004

7440-43-9 Cadmium: D007

7439-97-6 Mercury: D029,U151

· **Proposition 65**

· **Chemicals known to cause cancer:**

1332-58-7 Hydrous Aluminum Silicate

9003-11-6 Polyethylene glycol,

14808-60-7 Quartz (SiO₂)

111-42-2 2,2'-Iminodiethanol

7440-02-0 nickel

7439-92-1 Lead

7440-38-2 Arsenic

7440-43-9 Cadmium

· **Chemicals known to cause reproductive toxicity:**

14808-60-7 Quartz (SiO₂)

7439-92-1 Lead

7440-43-9 Cadmium

7439-97-6 Mercury

· **Chemicals known to cause reproductive toxicity for females:**

7439-92-1 Lead

· **Chemicals known to cause reproductive toxicity for males:**

14808-60-7 Quartz (SiO₂)

7439-92-1 Lead

7440-43-9 Cadmium

· **Chemicals known to cause developmental toxicity:**

14808-60-7 Quartz (SiO₂)

7439-92-1 Lead

7440-43-9 Cadmium

7439-97-6 Mercury

· **Pennsylvania Right To Know Components**

1344-09-8 Silicate

(Contd. on page 7)

Trade name: Resbond 907TS Red

(Contd. of page 6)

1344-28-1 Alumina Oxide
9002-84-0 Polytetrafluoroethylene
1302-78-9 Colloidal Clay
1332-58-7 Hydrous Aluminum Silicate
1309-37-1 Ferric oxide
1317-65-3 Calcium carbonate
1310-73-2 Sodium Hydroxide
64742-95-6 Solvent naphtha (petroleum), light aroma

14808-60-7 Quartz (SiO₂)
7631-86-9 Amorphous silica
7440-50-8 Copper
7440-02-0 nickel
7439-92-1 Lead
7440-38-2 Arsenic

· **Massachusetts Right To Know Components**

1344-28-1 Alumina Oxide
1332-58-7 Hydrous Aluminum Silicate
1309-37-1 Ferric oxide
1317-65-3 Calcium carbonate
1310-73-2 Sodium Hydroxide
14808-60-7 Quartz (SiO₂)
7631-86-9 Amorphous silica
7440-50-8 Copper
7440-02-0 nickel
7439-92-1 Lead

7440-38-2 Arsenic
7440-43-9 Cadmium
7439-97-6 Mercury

· **New Jersey Right To Know Components**

1344-09-8 Silicate
1344-28-1 Alumina Oxide
9002-84-0 Polytetrafluoroethylene
1302-78-9 Colloidal Clay
1332-58-7 Hydrous Aluminum Silicate
1309-37-1 Ferric oxide
1317-65-3 Calcium carbonate
1310-73-2 Sodium Hydroxide
14808-60-7 Quartz (SiO₂)
7631-86-9 Amorphous silica
7440-50-8 Copper
7440-02-0 nickel
7439-92-1 Lead

7440-38-2 Arsenic
7439-97-6 Mercury

· **Rhode Island Right To Know Components**

7440-02-0 nickel
7439-97-6 Mercury

· **Minnesota Right To Know Components**

1317-65-3 Calcium carbonate
7439-97-6 Mercury

· **Florida Right To Know Components**

7440-43-9 Cadmium
7439-97-6 Mercury

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

7440-50-8 Copper: D
7439-92-1 Lead: B2

(Contd. on page 8)

Trade name: Resbond 907TS Red

(Contd. of page 7)

7440-38-2 Arsenic: A

7440-43-9 Cadmium: B1

7439-97-6 Mercury: D

· **TLV (Threshold Limit Value)**

1344-28-1 Alumina Oxide: A4

1332-58-7 Hydrous Aluminum Silicate: A4

1309-37-1 Ferric oxide: A4

14808-60-7 Quartz (SiO₂): A2

111-42-2 2,2'-Iminodiethanol: A3

7440-02-0 nickel: A5

7439-92-1 Lead: A3

7440-38-2 Arsenic: A1

7440-43-9 Cadmium: A2

7439-97-6 Mercury: A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

14808-60-7 Quartz (SiO₂)

7440-02-0 nickel

7440-38-2 Arsenic

7440-43-9 Cadmium

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS07

· **Signal word** Warning

· **Hazard-determining components of labeling:**

Silicate

· **Hazard statements**

H302 Harmful if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

· **Precautionary statements**

P233 Keep container tightly closed.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P285 In case of inadequate ventilation wear respiratory protection.

P301+P310 If swallowed: Immediately call a doctor.

P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.

P302+P352 If on skin: Wash with plenty of water.

P304+P312 IF INHALED: Call a doctor if you feel unwell.

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.

P308+P313 IF exposed or concerned: Get medical attention.

P333+P313 If skin irritation or rash occurs: Get medical attention.

P337+P313 If eye irritation persists: Get medical attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

P404 Store in a closed container.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

16 Other information

To the best of our knowledge, the information contained herein is correct. Cotronics 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. We do not guarantee that the hazards described herein are the only hazards that exist.

· **Department issuing SDS:** Environment protection department.

· **Contact:** Dr. Alan Reznik

· **Date of preparation / last revision** 11/12/2021 / 4

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

(Contd. on page 9)

Trade name: Resbond 907TS Red

(Contd. of page 8)

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)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
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 – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

· *** Data compared to the previous version altered.**

RTV159

SAFETY DATA SHEET

Classified in accordance with 29 CFR 1910.1200

1. Identification

Product identifier: RTV159

Other means of identification

Synonyms: POLYSILOXANE COMPOUND

Recommended use and restriction on use

Recommended use: Silicone Elastomer

Restrictions on use: For industrial use only.

Manufacturer/Importer/Distributor Information : Momentive Performance Materials LLC
260 Hudson River Road
Waterford NY 12188

Contact person : commercial.services@momentive.com

Telephone : General information
+1-800-295-2392

Emergency telephone number

Supplier : CHEMTREC
1-800-424-9300

2. Hazard(s) identification

Hazard Classification

Not classified

Label Elements

Hazard Symbol: No symbol

Signal Word: No signal word.

Hazard Statement: Not applicable

Precautionary Statements : Not applicable Not applicable

Hazard(s) not otherwise classified (HNOC): None.

SDS_US

RTV159

Substance(s) formed under the conditions of use: Generates acetic acid during cure.

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*	Notes
Red iron oxide	1309-37-1	1 - <5%	# This substance has workplace exposure limit(s).

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: No action shall be taken involving any personal risk or without suitable training.

Ingestion: If swallowed, do NOT induce vomiting. Give a glass of water.

Inhalation: If inhaled, remove to fresh air. If not breathing give artificial respiration using a barrier device. If breathing is difficult give oxygen. Get medical attention.

Skin Contact: To clean from skin, remove completely with a dry cloth or paper towel, before washing with detergent and water. If skin irritation occurs: Get medical advice/attention.

Eye contact: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Most important symptoms/effects, acute and delayed

Symptoms: No data available.

Hazards: No data available.

Indication of immediate medical attention and special treatment needed

Treatment: Treatment is symptomatic and supportive.

5. Fire-fighting measures

General Fire Hazards: Use standard firefighting procedures and consider the hazards of other involved materials. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

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Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: All standard extinguishing agents are suitable.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical: In case of fire, carbon monoxide and carbon dioxide may be formed. Use water spray to keep fire-exposed containers cool.

Special protective equipment and precautions for fire-fighters

Special fire-fighting procedures: Take precautionary measures against static discharges. Keep away from sources of ignition - No smoking.

Special protective equipment for fire-fighters: Firefighters must wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus with full face mask and full protective clothing.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Avoid contact with skin and eyes. Use only in well-ventilated areas. Remove contact lenses before using sealant. Do not handle lenses until all sealant has been cleaned from the finger and hands. Product releases acetic acid during application and curing. Keep out of reach of children. See Section 8 of the SDS for Personal Protective Equipment.

Methods and material for containment and cleaning up: Wipe, scrape or soak up in an inert material and put in a container for disposal. Wash walking surfaces with detergent and water to reduce slipping hazard. Wear proper protective equipment as specified in the protective equipment section.

Notification Procedures: ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). See Section 8 of the SDS for Personal Protective Equipment.

Environmental Precautions: Do not allow runoff to sewer, waterway or ground.

7. Handling and storage

Precautions for safe handling: Sensitivity to static discharge is not expected. Acetic acid is formed during processing. Wear appropriate personal protective equipment. Use only in well-ventilated areas. Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Keep containers tightly closed. See Section 8 of the SDS for Personal Protective Equipment.

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Conditions for safe storage, including any incompatibilities:

Keep away from heat, sparks and open flame. Keep container tightly closed in a cool, well-ventilated place.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
Red iron oxide - Respirable fraction.	TWA	5 mg/m ³	US. ACGIH Threshold Limit Values, as amended (03 2015)
Red iron oxide - Dust and fume. - as Fe	REL	5 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards, as amended (2010)
Red iron oxide - Fume.	PEL	10 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
	TWA	10 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended (1989)
	TWA	10 mg/m ³	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended (06 2008)
	TWA PEL	5 mg/m ³	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended (01 2015)
Red iron oxide - Total dust.	TWA	50 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (03 2016)
Red iron oxide - Respirable fraction.	TWA	5 mg/m ³	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (03 2016)
	TWA	15 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (03 2016)
Red iron oxide - Total dust.	TWA	15 mg/m ³	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (03 2016)
Red iron oxide	IDLH	2,500 mg/m ³	US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended (10 2017)

Appropriate Engineering Controls

Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

General information: No data available.

Eye/face protection: Safety glasses with side shields

Skin Protection

Hand Protection: Use chemical-resistant, impervious gloves.

Other: Wear suitable protective clothing and eye/face protection.

Respiratory Protection: If inhalation exposure is expected, NIOSH/MSHA approved respiratory protection should be worn. Supplied air respirators may be required for non-routine or emergency situations. Respiratory protection must be provided in accordance with OSHA regulations (see 29CFR 1910.134).

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Hygiene measures: Avoid contact with eyes, skin, and clothing. Ensure adequate ventilation, especially in confined areas. Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. When using do not eat, drink or smoke.

9. Physical and chemical properties

Appearance

Physical state:	solid
Form:	Paste
Color:	Red
Odor:	Acetic acid.
Odor threshold:	No data available.
pH:	Not applicable
Melting point/freezing point:	Not applicable
Initial boiling point and boiling range:	Not applicable
Flash Point:	> 94 °C (estimated) Product does not flash below 93.3C (200F) during test; no actual flash point >93.3 C was determined.
Evaporation rate:	< 1
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.
Heat of combustion:	No data available.
Vapor pressure:	No data available.
Vapor density:	No data available.
Density:	ca. 1.1 g/cm ³
Relative density:	ca. 1.10
Solubility(ies)	
Solubility in water:	Insoluble
Solubility (other):	Insoluble
Partition coefficient (n-octanol/water) Log Pow:	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
SADT:	No data available.
Viscosity, dynamic:	No data available.
Viscosity, kinematic:	No data available.
Minimum ignition temperature:	Not applicable
VOC:	42 g/l ;

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10. Stability and reactivity

Reactivity:	No dangerous reaction if used as recommended.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid:	Keep away from moisture.
Incompatible Materials:	Strong Acids, Strong Bases Water.
Hazardous Decomposition Products:	Carbon dioxide Acetic acid. Silicon dioxide. Measurements at temperatures above 150°C in presence of air (oxygen) have shown that small amounts of formaldehyde are formed due to oxidative degradation.

11. Toxicological information

Information on likely routes of exposure

Ingestion:	No data available.
Inhalation:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.

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 (list all possible routes of exposure)

Oral	
Product:	ATEmix: 7,391.31 mg/kg
Dermal	
Product:	Not classified for acute toxicity based on available data.
Inhalation	
Product:	Not classified for acute toxicity based on available data.

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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), as amended:

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro

Product: No data available.

In vivo

Product: No data available.

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.

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Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability

Biodegradation

Product: No data available.

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: No data available.

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Mobility in soil: No data available.

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Known or predicted distribution to environmental compartments

Red iron oxide No data available.

Other adverse effects: No data available.

13. Disposal considerations

General information: The generation of waste should be avoided or minimized wherever possible. See Section 8 for information on appropriate personal protective equipment. Do not discharge into drains, water courses or onto the ground.

Disposal instructions: Disposal should be made in accordance with federal, state and local regulations.

Contaminated Packaging: Dispose of as unused product.

14. Transport information

DOT
Not regulated.

IMDG
Not regulated.

IATA
Not regulated.

Special precautions for user: This product is not regarded as dangerous goods according to the national and international regulations on the transport of dangerous goods.

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.

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)
None present or none present in regulated quantities.

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US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended

<u>Chemical Identity</u>	<u>OSHA hazard(s)</u>
Dimethylpolysiloxane	No OSHA Hazards
Siloxanes and Silicones, di-Me, polymers with Me silsesquioxanes, hydroxy-terminated	No OSHA Hazards
Red iron oxide	Causes mild skin irritation.; Respiratory hazard.

CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Not classified

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

None present or none present in regulated quantities.

SARA 311/312 Hazardous Chemical

<u>Chemical Identity</u>	<u>Threshold Planning Quantity</u>
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US. EPCRA (SARA Title III Section 313 Toxic Chemical Release Inventory (TRI) Reporting

None present or none present in regulated quantities.

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.

US State Regulations

US. California Proposition 65

No ingredient requiring a warning under CA Prop 65.

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity

Dimethylpolysiloxane
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl) -, reaction products with ammonia, octamethylcyclotetrasiloxane and silica
Siloxanes and Silicones, di-Me, polymers with Me silsesquioxanes, hydroxy-terminated
Methyltriacetoxysilane

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Red iron oxide

US. Massachusetts RTK - Substance List

Chemical Identity

Red iron oxide

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity

Red iron oxide

US. Rhode Island RTK

Chemical Identity

Red iron oxide

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Inventory Status:

Australia Industrial Chem. Act (AIC):	On or in compliance with the inventory	Remarks: None.
Canada DSL Inventory List:	Q (quantity restricted)	Remarks: Please contact your supplier for further information on the inventory status of this material.
Canada NDSL Inventory:	Not in compliance with the inventory.	Remarks: None.
China Inv. Existing Chemical Substances:	On or in compliance with the inventory	Remarks: None.
Japan (ENCS) List:	On or in compliance with the inventory	Remarks: None.
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory	Remarks: None.
New Zealand Inventory of Chemicals:	On or in compliance with the inventory	Remarks: None.
Philippines PICCS:	On or in compliance with the inventory	Remarks: None.
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory	Remarks: None.
US TSCA Inventory:	On or in compliance with the inventory	Remarks: Commercial Status: Active
REACH:	If purchased from Momentive Performance Materials GmbH in Leverkusen, Germany, all substances in this product have been registered by Momentive Performance Materials GmbH or upstream in our supply chain or are exempt from registration under Regulation (EC) No 1907/2006 (REACH). For polymers, this includes the constituent monomers and other reactants.	Remarks: None.

16. Other information, including date of preparation or last revision

HMIS Hazard ID

Health	0
Flammability	0
Physical Hazards	1
PERSONAL PROTECTION	

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

RTV159

Issue Date: 02/06/2023
Revision Date: No data available.
Version #: 7.1
Further Information: No data available.
Disclaimer:

Notice to reader

Unless otherwise specified in section 1, Momentive products are intended for use in the manufacture and/or formulation of products and are not intended for direct consumer use. These products are not intended for long-lasting (> 30 days) implantation, injection or direct ingestion into the human body, nor for use in the manufacture of multiple use contraceptives. Keep out of the reach of children.

Further Information

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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SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION AND COMPANY DETAIL

Product Name: RV-151 Neutralizer
Product Code(s): RV-151
Recommended Use: For use in the Electro-Chemical Etching Process
Manufacturers Name: Monode Marking Products, Inc.
Address: 9200 Tyler Boulevard
Mentor, OH 44060

Emergency Telephone: (440) 975-8802, available during office hours,
8:00am - 5:00pm EST, Monday - Friday, in English.

Fax Number: (440) 975-8836
Date Prepared: 13 April 2015

HMIS	
H	1
F	0
R	1
PPE [†]	
†Sec. 8	

SECTION 2 – HAZARDS IDENTIFICATION



Hazardous Pictogram:

Signal Word: **WARNING**

Precautionary Statement: Harmful if swallowed.
Do not swallow.
Avoid Skin and Eye contact.

Inhalation: N/A
Ingestion: No significant effects known or expected.
Skin contact: Mild irritation.
Eye contact: Mild irritation.

This product, when used specifically as directed and for its intended purpose (i.e. mild electrolytic etching) and in conjunction with proper work procedures and policies and sound hygienic practices, does not constitute a hazard to personnel.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Components (specific chemical identity/ Common name):

SOLIDS: None

LIQUIDS: None

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



SAFETY DATA SHEET

SECTION 4 – FIRST AID MEASURES

Skin contact: Wash thoroughly with soap and water.
Eye contact: Flush thoroughly with water for fifteen minutes, consult physician.
Ingestion: Induce vomiting and call physician. Product contains alkanolamine soaps and alkanolamine.
Inhalation: N/A

Always seek medical attention if irritation continues.

SECTION 5 – FIRE-FIGHTING MEASURES

Suitable extinguishing media: N/A
Special fire fighting procedures: If water boils off; use carbon dioxide, foam, dry chemical.
Unusual fire and explosions hazards: None

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Steps to be taken in case material is released or spilled:

SMALL SPILLS: Dilute with water and mop up thoroughly to avoid any residual slipperiness.

LARGE SPILLS: Use suitable absorbent and dispose of in dot approved waste containers.

WASTE DISPOSAL: Carefully neutralize with acid to pH of 5-6, let settle and skim off any oil layer, Neutralize water layer to pH 7-8 and discharge to sewer or waste disposal system, capable of biological oxidation. Disposal of material should be in compliance with all current local, state and federal regulations.

SECTION 7 – PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in the event of spillage or chemical release:

Waste disposal method: Carefully neutralize with acid to pH of 5-6, let settle and skim off any oil layer, Neutralize water layer to pH 7-8 and discharge to sewer or waste disposal system, capable of biological oxidation. Disposal of material should be in compliance with all current local, state and federal regulations.

Precautions to be taken in Handling and Storage: Keep container tightly closed, and keep from freezing (32°F). Wash hands thoroughly after handling.

Other Precautions: Wear goggles and gloves when handling neat material.

SECTION 8 – EXPOSURE CONTROLS – PERSONAL PROTECTION

Occupation Exposure Limits: N/A

Personal Protective Equipment:

Respiratory System: N/A
Skin and Body: Optional apron
Hands: Optional - for sensitive skin wear rubber gloves.
Eyes: For extra protection; wear safety goggles.
Other/Special: Local exhaust is sufficient to control mist to PEL.



SAFETY DATA SHEET

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Fluorescent green
Odor:	Amine odor
Odor Threshold:	N/A
pH:	9.2 to 9.5
Boiling Point:	215°F
Melting / Freezing Point:	Melting - N/A / Freezing - below 32°F
Flash Point:	N/A
Fire Hazards in presence of various substances:	N/A
Auto-ignition temperature:	N/A
Explosive Properties:	N/A
Lower explosion limit:	N/A
Oxidizing properties:	N/A
Vapor Pressure:	Like water
Evaporation Rate:	Like water
Density:	N/A
Solubility:	Complete (100%)
Vapor Density:	Like water
% Volatile:	Greater than 60
Specific Gravity:	1.00 to 1.06

SECTION 10 – REACTIVITY DATA

Stability:	Stable
Conditions to avoid:	N/A
Incompatibility: (materials to avoid)	Strong oxidizers
Hazardous Decomposition or By-products:	Thermal, oxides of carbon and nitrogen.
Hazardous polymerization:	Will not occur.

SECTION 11 – TOXICOLOGICAL INFORMATION

Carcinogenicity: NTP: No IARC: No OSHA: No

Health Hazards (Acute & Chronic);

Mild irritation to eyes and skin.
Product contains alkanolamine soaps and alkanolamine.

SECTION 12 – ECOLOGICAL INFORMATION

N/A



SAFETY DATA SHEET

SECTION 13 – DISPOSAL CONSIDERATIONS

Carefully neutralize with acid to pH of 5-6, let settle and skim off any oil layer, Neutralize water layer to pH 7-8 and discharge to sewer or waste disposal system, capable of biological oxidation. Disposal of material should be in compliance with all current local, state and federal regulations.

SECTION 14 – TRANSPORT INFORMATION

Special Precautions: Keep container tightly closed. Keep from freezing (32 degrees [F]).

This is a Non-Hazardous product.

UN Number

US DOT (United States Department of Transportation): Not Regulated

IMO/IMDG (International Maritime Dangerous Goods): Not Regulated

IATA (International Air Transport Association): Not Regulated

ADR (Agreement on Dangerous Goods by Road (Europe)): Not Regulated

RID (Regulations Concerning The International Transport of Dangerous Goods (Europe)): Not Regulated

AND (European Agreement Concerning The Carriage of dangerous Goods by Inland Waterways): Not Regulated

SECTION 15 – TRANSPORT INFORMATION

IRRITANT

Safety Phrases: N/A

Risk Phrases: N/A

Regulations: N/A

SECTION 16 – OTHER INFORMATION

Source of key data used to

Compile Safety Data Sheet: Material Safety Data Sheet. Essentially similar to U.S. Department of Labor Form OSHA-20

Issue Date: 26 February 1987

Changes to Issue: 07 June 2016

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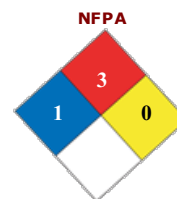
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SAFETY DATA SHEET

SECTION 1 : IDENTIFICATION

Product Name: SW420034
Product Code: SW420034
SDS Manufacturer Number: 3265SCFL
Product Description: Presaturated wipes containing 100% Isopropyl Alcohol
Manufacturer Name: Contec, Inc.
Address: 525 Locust Grove
Spartanburg, South Carolina 29303
USA
Website: www.contecinc.com
General Phone Number: +1-864-503-8333
Emergency Phone Number: Chemtrec® US: 1-800-424-9300 International: 1-703-527-3887
SDS Creation Date: April 30, 2013
SDS Revision Date: April 04, 2019



HMIS	
Health Hazard	1
Fire Hazard	3
Reactivity	0
Personal Protection	X

SECTION 2 : HAZARD(S) IDENTIFICATION

GHS Pictograms:



Signal Word: DANGER!
GHS Class: Flammable Liquid, Category 2..
Eye Irritant, Category 2..
Specific Target Organ Toxicity, Single Exposure, Category 3.

Hazard Statements: Highly flammable liquid and vapor.
Causes serious eye irritation.
May cause drowsiness or dizziness.

Precautionary Statements: Keep away from heat/sparks/open flames — No smoking.
In case of fire: Use dry chemical, carbon dioxide to extinguish small fires. Use water for large fires.
Wear protective gloves, protective clothing, and eye protection..
Avoid breathing vapors.
Store in a well-ventilated place. Keep container tightly closed.
Dispose of contents/container in accordance with Local, State, Federal and Provincial regulations.
IF IN EYES: Rinse cautiously with water for several minutes.
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 ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

Emergency Overview: DANGER! Flammable. Irritant. May cause drowsiness or dizziness.

Route of Exposure: Eyes. Skin. Inhalation.

Potential Health Effects:

Eye: Eye contact with product or vapors may result in irritation, redness, and blurred vision. May cause pain disproportionate to the level of irritation to eye tissues. Vapor may cause eye irritation experienced as mild discomfort and redness. May cause moderate corneal injury.

Skin: May cause irritation. Repeated exposure may cause a burning sensation and dryness or cracking. Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Inhalation: Inhalation of vapors, fumes or mists of the product may be irritating to the respiratory system. Excessive exposure (400 ppm) may cause eye, nose and throat irritation. Higher levels may cause incoordination, confusion, hypotension, hypothermia, circulatory collapse, respiratory arrest, and death may follow a longer duration and higher levels. In confined or poorly ventilated areas, vapors can readily accumulate and can cause unconsciousness and death.

Ingestion: May cause irritation. Ingesting large amounts may cause injury. May cause central nervous system depression, nausea and vomiting. Aspiration of material into the lungs can cause chemical pneumonitis which can be fatal.

Chronic Health Effects: Prolonged or repeated contact may cause skin irritation.
Repeated or prolonged inhalation may cause toxic effects.

Signs/Symptoms: Overexposure may cause headaches and dizziness. Signs and symptoms of excessive exposure include facial flushing, low blood pressure, irregular heartbeats.

Target Organs: Eyes. Skin. Respiratory system. Digestive system.

Aggravation of Pre-Existing Conditions: None generally recognized.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Ingredient Percent	EC Num.
Isopropyl alcohol	67-63-0	100 by Volume	200-661-7

SECTION 4 : FIRST AID MEASURES

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 occurs: Get medical advice/attention.
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.
Ingestion:	If swallowed, do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

SECTION 5 : FIRE FIGHTING MEASURES

Flash Point:	18 °C (65 °F)
Auto Ignition Temperature:	399 °C (750 °F)
Lower Flammable/Explosive Limit:	2.0 % by volume
Upper Flammable/Explosive Limit:	12.0 % by volume
Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, dry chemical, or water fog or spray when fighting fires involving this material.
Unsuitable Media:	Do not use a solid water stream as it may scatter and spread fire.
Protective Equipment:	In the event of a fire, wear Self-Contained Breathing Apparatus (SCBA), approved or in accordance to NFPA, NIOSH, and/or European Standard EN 137 guidelines or equivalent and full protective gear.
Unusual Fire Hazards:	Material burns with an invisible flame
Hazardous Combustion Byproducts:	Oxides of carbon, oxides of nitrogen and other organic substances may be formed.
Universal Fire And Explosion Hazards:	Vapors are heavier than air and may travel along the ground or may be moved by ventilation to locations distant from the point of material handling or release.
<u>NFPA Ratings:</u>	
NFPA Health:	1
NFPA Flammability:	3
NFPA Reactivity:	0


SECTION 6 : ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Evacuate area and keep unnecessary and unprotected personnel from entering the spill area. Avoid breathing vapor, aerosol or mist. Avoid contact with skin, eyes and clothing.
Environmental Precautions:	Avoid runoff into storm sewers, ditches, and waterways. Comply with all government regulations on reporting releases.
Methods for containment:	Spills are very unlikely, because the wiper fabric has absorbed the liquid solvent solution. In the event of a spill, contain with an inert absorbent.
Methods for cleanup:	Remove all sources of ignition. Collect the wipes with a non sparking tool and absorb or wipe any residual liquids. Place in a suitable container for proper disposal. Use appropriate protective apparel as described in Section 8. Avoid contact with skin and eyes.

SECTION 7 : HANDLING and STORAGE

Handling:	Use with adequate ventilation. Avoid breathing vapor and fumes. Use only in accordance with directions.
Storage:	Store in a cool, dry, well ventilated area away from sources of heat, combustible materials, direct sunlight, and incompatible substances. Keep container tightly closed when not in use. Keep away from aldehydes, halogenated organics, halogens, strong acids, strong oxidizers.
Hygiene Practices:	Wash thoroughly after handling. Avoid inhaling vapors, mists, or fumes.

SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls:	Use appropriate engineering control such as process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Where such systems are not effective wear suitable personal protective equipment, which performs satisfactorily and meets OSHA or other recognized standards. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment.
Eye/Face Protection:	Safety glasses with side shields must be worn at all times. If splash hazard exists, wear chemical splash goggles and/or face shield.
Hand Protection Description:	Wear appropriate protective gloves. Consult glove manufacturer's data for permeability data. Preferred glove materials include: polyethylene, neoprene, chlorinated polyethylene, natural rubber (latex), polyvinyl chloride (PVC or vinyl), nitrile/butadiene rubber (nitrile or NBR), ethyl vinyl alcohol laminate (EVAL). Avoid gloves made of polyvinyl alcohol (PVA).
Respiratory Protection:	Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Comply with the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149 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.
Other Protective:	Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
PPE Pictograms:	

EXPOSURE GUIDELINES

Isopropyl alcohol:

Guideline ACGIH:	TLV-TWA: 200 ppm TLV-STEL: 400 ppm
Guideline OSHA:	PEL-TWA: 400 ppm

SECTION 9 : PHYSICAL and CHEMICAL PROPERTIES

Physical State Appearance:	Liquid presaturated wipes.
Odor:	Alcohol-like
Odor Threshold:	Not determined.
Boiling Point:	82 - 89°C (180 - 192 °F)
Melting Point:	Not determined.
Specific Gravity:	0.785 @ 20°C (68°F)
Solubility:	Soluble in water.
Vapor Density:	Not determined.
Vapor Pressure:	43.0 hPa (32 mm Hg) @ 20°C (68°F)
Percent Volatile:	100%
Evaporation Rate:	Not determined.
pH:	Not determined.
Viscosity:	Not determined.
Coefficient of Water/Oil Distribution:	Not determined.
Flash Point:	18 °C (65 °F)
Auto Ignition Temperature:	399 °C (750 °F)

SECTION 10 : STABILITY and REACTIVITY

Chemical Stability:	Stable under normal temperatures and pressures.
Hazardous Polymerization:	Not reported.
Conditions to Avoid:	Keep away from heat, ignition sources and incompatible materials.
Incompatible Materials:	Aldehydes, halogenated organics, halogens, strong acids, strong oxidizers.

SECTION 11 : TOXICOLOGICAL INFORMATION

Isopropyl alcohol:

Eye:	Eye - Rabbit Standard Draize test.: 100 mg Eye - Rabbit Standard Draize test.: 10 mg Eye - Rabbit Standard Draize test.: 100 mg/24H (RTECS)
Skin:	Administration onto the skin - Rabbit Standard Draize test.: 500 mg Administration onto the skin - Rabbit LD50: 12800 mg/kg [Details of toxic effects not reported other than lethal dose value] (RTECS)

Inhalation:	Inhalation - Rat LC50: 16000 ppm/8H [Details of toxic effects not reported other than lethal dose value] Inhalation - Mouse LC50: 53000 mg/m ³ [Behavioral - General anesthetic Lungs, Thorax, or Respiration - Other changes] Inhalation - Rat LC50: 72600 mg/m ³ [Behavioral - General anesthetic Lungs, Thorax, or Respiration - Other changes] (RTECS)
Ingestion:	Oral - Rat LD50: 5045 mg/kg [Behavioral - Altered sleep time (including change in righting reflex) Behavioral - Somnolence (general depressed activity)] Oral - Mouse LD50: 3600 mg/kg [Behavioral - Altered sleep time (including change in righting reflex) Behavioral - Somnolence (general depressed activity)] Oral - Mouse LD50: 3600 mg/kg [Behavioral - General anesthetic] Oral - Rat LD50: 5000 mg/kg [Behavioral - General anesthetic] (RTECS)

SECTION 12 : ECOLOGICAL INFORMATION

Ecotoxicity:	No ecotoxicity data was found for the product.
Environmental Fate:	No environmental information found for this product.
<u>Isopropyl alcohol:</u>	
Ecotoxicity:	LC50; Species: 1400000 ug/L for 48 hr Crangon crangon (Common Shrimp) LC50; 10000000 ug/L for 24 hr Species: Daphnia magna (Water Flea) LD50; >5000 mg/L for 24 hr Species: Carassius auratus (goldfish) LC50; 11,130 mg/L for 48 hr Species: Pimephales promelas (fathead minnows)
Environmental Fate:	Isopropanol is expected to have very high mobility in soil.
Bioaccumulation:	Bioconcentration in aquatic organisms is low.

SECTION 13 : DISPOSAL CONSIDERATIONS

Waste Disposal:	Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 or the EU Directive 2008/98/EC on waste for the classifications of hazardous waste prior to disposal. Furthermore, consult with your state, local, or provincial waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in accordance to the EPA and/or state and local guidelines.
Contaminated Packaging:	Do not reuse containers without proper cleaning or reconditioning.



SECTION 14 : TRANSPORT INFORMATION

DOT Shipping Name:	Solids Containing Flammable Liquid, n.o.s. (Isopropanol).
DOT Hazard Class:	4.1
DOT Packing Group:	II
IATA Shipping Name:	Solids Containing Flammable Liquid, n.o.s. (Isopropanol).
IATA Hazard Class:	4.1
IATA Packing Group:	II
IMDG UN Number :	UN3175
IMDG Shipping Name :	Solids Containing Flammable Liquid, n.o.s. (Isopropanol).
IMDG Hazard Class :	4.1
IMDG Packing Group :	II
Marine Pollutant:	No.

SECTION 15 : REGULATORY INFORMATION

Canada WHMIS:	MacIsaac & Associates 440 Gloucester Street, Suite 2111 Ottawa, Ontario, K1R 7T8 Canada +1 (613) 236-2250 Controlled - Class: B2 Flammable Liquid. Controlled - Class: D2B Toxic
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Isopropyl alcohol:

TSCA Inventory Status:	Listed
Canada DSL:	Listed
EC Number:	200-661-7
WHMIS Pictograms:	 

SECTION 16 : ADDITIONAL INFORMATION

HMIS Ratings:

HMIS Health Hazard: 1
HMIS Fire Hazard: 3
HMIS Reactivity: 0
HMIS Personal Protection: X

SDS Creation Date: April 30, 2013

SDS Revision Date: April 04, 2019

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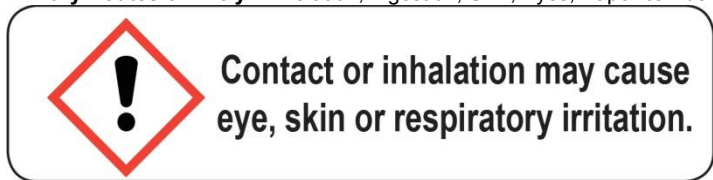


Section 1: PRODUCT AND COMPANY INFORMATION

Product Name: Tiodize T8E Paste Lubricant
SDS Prep Date: 04/03/2015
SDS Revision #: A
Supplier: Tiodize Co., Inc.
Address: 5858 Engineer Drive, Huntington beach, CA 92649
Phone #: 714-898-4377, Email: tiodize@tiodize.com
Emergency: 1-800-255-3924 (U.S. & Canada) or 1-813-248-0585 (International)

Section 2: HAZARDS IDENTIFICATION

Primary Routes of Entry: Inhalation, Ingestion, Skin, Eyes, Vapor can be flammable.



SIGNS & SYMPTOMS OF EXPOSURE:

Inhalation: May cause irritation to upper respiratory system..
Ingestion: Do not ingest, Harmful is ingested.
Skin Contact: May cause irritation and rashes.
Eye Contact: May cause irritation and could be harmful to eyes.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Preparation: Proprietary Formula – Specific Chemicals have been withheld

Chemical or Common Name	CAS Number	PEL:	TLV:
Molybdenum compound	Proprietary	5 mg/m ³	5 mg/m ³
Barium Compound	Proprietary	2.5 mg/m ³	2.5 mg/m ³
Tellurium Compound	Proprietary	5 mg/m ³	5 mg/m ³
Boron Compound	Proprietary	N/E	N/E
Ethanol	64-17-5	1900 ppm	1000 mg/m ³
Water	7732-18-5	None	

NOTE: All SARA Title III materials have been reported. All ingredients contained in this formula are listed on the TSCA Inventory (Toxic Substances Chemical Inventory)

Section 4: FIRST AID MEASURES

Medical Conditions Generally Aggravated by Exposure: Long-term exposure or high concentrations of vapor may result in central nervous system depression and narcosis.

Signs and Symptoms of Exposure: May cause damage to lungs, eyes, skin, liver, kidneys, etc.

Emergency and First Aid Procedures: Eyes: Flush with water for 15 minutes or as needed. Skin: Remove contaminated clothing if needed and wash skin with soap and water. Inhalation: Remove to fresh air. Ingestion: If swallowed, induce vomiting; keep warm, quiet and get medical attention.

Carcinogenicity: Not carcinogenic

Health Hazards (acute and chronic): Overexposure may temporarily affect the nervous system with depression, dizziness, headache or loss of consciousness, and may also cause irregular pulse.

Section 5: FIRE FIGHTING MEASURES



Flash Point: 78°F (Ethanol) PMCC **Flammability Limits:** LEL=NE, UEL=NE **Auto Ignition Threshold:** NA

Extinguishing Media: ATL Foam Alcohol, Carbon Dioxide, Dry Chemical

Fire Fighting Procedures: Keep container closed; Isolate from heat.

Fire & Explosion Hazards: Moderately flammable in paste form when exposed to heat or flame.

Section 6: ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: For small spills, absorb with dry sand or absorbent cloth. For large spills immediately evacuate the area and shut off potential ignition sources. Only personnel equipped with proper respiratory and skin/eye protection should be permitted in the area. Dike the area to contain the spill. Take precautions as necessary to prevent contamination of ground or surface waters. Recover with a wet vacuum or absorb spilled material in sawdust or vermiculite and sweep into closed containers for disposal. After all visible traces have been removed, thoroughly wet vacuum area again. **DO NOT FLUSH INTO SEWER.**

Section 7: HANDLING AND STORAGE

Precautions to be taken in Storage & Handling: Keep away from open flame or other ignition sources. Do not store above 120°F. Maintain adequate ventilation and keep from children. Note that some vapors are heavier than air and can displace air in low areas or confined spaces such as pits or tanks. Do not enter those areas where large quantities of vapors are suspected or collecting until exchanging the air or using special breathing apparatus with an observer present for possible assistance.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory Protection/Ventilation: Not required for normal work situations where adequate ventilation is provided (see next section). Use NIOSH approved self-contained positive pressure respirators for emergencies and in situations where air may be displaced by vapors or in confined areas with low air exchange rates. Follow OSHA Std. 29CFR 1910.134.

Ventilation: Use local exhaust at filling zones and where leakage is probable. Use mechanical ventilation for storage areas. For general dilution or local exhaust maintain adequate air exchange to avoid vapor build-up. All ventilation should be designed in accordance with OSHA Std. 29CFR 1910.94.

Skin Protection: Polyethylene, Neoprene or PVC protective gloves if there is prolonged and repeated contact with skin.

Eye Protection: Where there is reasonable probability of liquid contact, wear splash-proof goggles. Contact lenses should not be worn under such conditions.

Other Protective Clothing: Safety shower and eye-wash fountain in manufacturing areas. Personal protective clothing and use of equipment must be in accordance with 29CFR 1910.132 and 29CFR 1910.133.

Work and Hygienic Practices: Do not smoke, eat or drink while using this product. Wash hands with soap and water before smoking, eating, drinking or using toilet facilities. Launder contaminated clothing before reuse.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 196°F (Liquids)	Specific Gravity: 1.38 g/ml	Melting Point: N/A
Vapor Pres.: Not determined	Appearance: Black, dispersible	Evaporation Rate: Not Determined
Sol. in Water: Water Reducible	Evaporation Rate: NA	Pour Point: Not determined
Vapor Density (Air=1): Not determined	Odor: Sweet Mild Solvent	VOC: 325 g/l

Section 10: STABILITY AND REACTIVITY

Stability: Stable **Incompatibility:** Acids, bases and oxidizers **Hazardous Polymerization:** Will not occur

Conditions to avoid: Sources of ignition such as sparks, hot spots, welding, flames, and cigarettes.

Hazardous Decomposition Products: Barium, Tellurium, Fluoride, Carbon Monoxide and Phosphorous oxide.

Section 11: TOXICOLOGICAL INFORMATION

Acute or Chronic Health Hazards: May cause damage to lungs, eyes, skin. Liver and kidneys, etc..

Signs and Symptoms of Exposure: Skin and eye irritation.

Medical Conditions Generally Aggravated by Exposure: Long-term exposure or high concentrations of vapor may result in central nervous system depression, headache or loss of consciousness, and may also cause irregular pulse.

Emergency and First Aid Procedures: When symptoms occur, remove to fresh air, provide oxygen when breathing is difficult; call physician immediately. See section 4.

NOTE: This material is not known to contain any carcinogen required to be listed under the *Hazard Communication Standard* 29CFR 1910.1200 from the *National Toxicology Program* (NTP) or the *International Agency for Research on Cancer* (IARC) sources.



Section 12: ECOLOGICAL INFORMATION

Not Established.

Section 13: DISPOSAL INFORMATION

Waste Disposal: Recovered liquids may be reprocessed, or incinerated, or treated in a permitted hazardous waste management facility. Care must be taken when using or disposing of chemical materials and/or their containers to prevent environmental contamination. Dispose of chemical materials and/or their containers in accordance with the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, as well as any other Federal, State, or local laws and regulations regarding disposal.

Section 14: TRANSPORT INFORMATION

IATA Dangerous Goods Regulations: Paint Related Material, Class 3, UN1263, Packing Group III.

Section 15: REGULATORY INFORMATION

Not established

Section 16: OTHER INFORMATION

SARA TITLE III NOTIFICATION: To comply with the reporting requirements of SARA Title III, EPA Regulations, the following is a list of the chemicals that are subject to customer written notification under section 313:

Substance	CAS Number
Barium	Proprietary
Ethanol	64-17-5

RESPONSIBILITY:

The information contained herein is furnished without expressed warranty of any kind. Data contained herein has been assembled by the manufacturer based on its own studies and is believed to be correct as of the data issued. However, there is no warranty implied as to the accuracy, completeness, or Adequacy of the information obtained.

The manufacturer shall not be liable, regardless of fault, to the vendee, the vendee's employees, or anyone, for any direct, special or consequential damages arising out of or in connection with the normal safe usage of the product. If there are any questions, please contact: Tiodize Co, inc. at 714/898-4377.



Article Information Sheet

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Document Group:	26-0562-4	Version Number:	2.00
Issue Date:	12/11/14	Supersedes Date:	Initial Issue

SECTION 1: Identification

1.1. Product identifier

3M™ Vinyl Tape 470, 471, 471+, MA471, 4712, 472, 477, 4731, 5700, & 5702, 3M™ Lithographers Tape 616, and 3M™ Electroplating/Anodizing Tape 484

1.2. Recommended use and restrictions on use

Recommended use

Marking/Masking, Industrial use

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)

3M™ Vinyl Tape 471, 471+, MA471, 4712, 472, 477, & 4731

3M™ Electroplating Tape 470

3M™ Safety Stripe Tape 5700 & 5702

3M™ Lithographers Tape 616

SECTION 2: Hazard identification

This product is exempt from hazard classification according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 3: Composition/information on ingredients

3M™ Vinyl Tape 470, 471, 471+, MA471, 4712, 472, 477, 4731, 5700, & 5702, 3M™ Lithographers Tape 616, and 3M™ Electroplating/Anodizing Tape 484 12/11/14

Ingredient	C.A.S. No.	% by Wt
Vinyl Backing	Trade Secret*	51 - 99
Rubber Adhesive	Trade Secret*	1 - 49
Paper Liner (4712 only)	None	Not Applicable

*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:

No need for first aid is anticipated.

Skin Contact:

No need for first aid is anticipated.

Eye Contact:

No need for first aid is anticipated.

If Swallowed:

No need for first aid is anticipated.

SECTION 5: Fire-fighting measures

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Not applicable.

6.2. Environmental precautions

Not applicable.

6.3. Methods and material for containment and cleaning up

Not applicable.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions.

7.2. Conditions for safe storage including any incompatibilities

No special storage requirements.

SECTION 8: Exposure controls/personal protection

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical

under normal use conditions. No engineering controls or personal protective equipment (PPE) are necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Solid
Specific Physical Form:	Roll of Tape
Odor, Color, Grade:	various colored vinyl tape.
Odor threshold	<i>Not Applicable</i>
pH	<i>Not Applicable</i>
Melting point	<i>Not Applicable</i>
Boiling Point	<i>Not Applicable</i>
Flash Point	<i>Not Applicable</i>
Evaporation rate	<i>Not Applicable</i>
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>
Vapor Pressure	<i>Not Applicable</i>
Vapor Density	<i>Not Applicable</i>
Specific Gravity	<i>Not Applicable</i>
Solubility in Water	Nil
Solubility- non-water	<i>Not Applicable</i>
Partition coefficient: n-octanol/ water	<i>Not Applicable</i>
Autoignition temperature	<i>Not Applicable</i>
Decomposition temperature	<i>Not Applicable</i>
Viscosity	<i>Not Applicable</i>
Volatile Organic Compounds	<i>Not Applicable</i>
Percent volatile	<i>Not Applicable</i>
VOC Less H2O & Exempt Solvents	<i>Not Applicable</i>

SECTION 10: Stability and reactivity

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

SECTION 11: Toxicological information

Inhalation:

No health effects are expected

Skin Contact:

No health effects are expected

Eye Contact:

No health effects are expected

Ingestion:

No health effects are expected

Additional Information:

This product, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. However, use or processing of the product in a manner not in accordance with the product's directions for use may affect the performance of the product and may present potential health and safety hazards.

SECTION 12: Ecological information

This article is expected to present a low environmental risk either because use and disposal are unlikely to result in a significant release of components to the environment or because those components that may be released are expected to have insignificant environmental impact.

SECTION 13: Disposal considerations

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

SECTION 14: Transport Information

Not regulated per U.S. DOT, IATA or IMO.

*These transportation classifications are provided as a customer service. As the shipper YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. 3M transportation classifications are based on product formulation, packaging, 3M policies and 3M understanding of applicable current regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and **not the packaging, labeling, or marking requirements**. The original 3M package is certified for U.S. ground shipment only. If you are shipping by air or ocean, the package may not meet applicable regulatory requirements.*

SECTION 15: Regulatory information

Chemical Inventories

This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory requirements.

For additional regulatory information on this product, refer to www.3M.com/regs.

SECTION 16: Other information

NFPA Hazard Classification

Health: 0 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:	26-0562-4	Version Number:	2.00
Issue Date:	12/11/14	Supersedes Date:	Initial Issue

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WB17 Adhesive Wax

*** SAFETY DATA SHEET ***

*****1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION*****

IDENTIFICATION OF THE SUBSTANCE OR PREPARATION

Adhesive Wax Blend

USE OF SUBSTANCE/PREPARATION

Adhesive wax blend is used for temporary fastening of paper, photographs, and plastics in graphic layout work. It is also used to hold parts such as gaskets and washers in position during equipment assembly.

COMPANY IDENTIFICATION:

Schaefer Machine Co.
32 New Road
Madison, CT 06443
(860) 526-4000 800-243-5143

EMERGENCY PHONES:

Chemtrec: 800-424-9300 (24 hours)
Schaefer: 860-526-4000

*****2. HAZARDOUS IDENTIFICATION*****

GHS CLASSIFICATION :Not classified as dangerous under EC/GHS-criteria

HUMAN HEALTH HAZARDS :None

PHYSICO-CHEMICAL AND ENVIRONMENTAL HAZARDS AND EFFECTS: :None

HMIS RATING USA:

Health: 0 Flammability: 1 Reactivity: 0 PPI:-

*****3. COMPOSITION/INFORMATION ON INGREDIENTS*****

INGREDIENT	% BY WEIGHT	CAS #	HAZARD	DANGER SYMBOL(S)
MICROCRYSTALLINE WAXES	85%	63231-60-7	-	-
HYDROCARBON RESIN	< 10%	68527-25-3	-	-
POLYISOBUTYLENE (PIB)	< 10%	9003-27-4	H320 – Eye irritant	-

*****4. FIRST-AID MEASURES*****

SWALLOWING

WHEN MOLTEN ONLY (molten product can cause thermal burns). Obtain medical attention immediately. This is not a toxic substance.

INHALATION: No emergency care anticipated. WHEN MOLTEN ONLY (molten product can cause thermal burns). Obtain medical attention immediately. Exposed persons should be kept under medical observation for at least 48 hours because delayed effects may occur.

SKIN:

WHEN MOLTEN ONLY (molten product can cause thermal burns) – In serious cases, use emergency shower immediately. Immediately flush skin thoroughly with cold water for at least 15 minutes while removing contaminated clothing and shoes. Obtain medical attention.

EYE CONTACT:

WHEN MOLTEN ONLY (molten product can cause thermal burns) – Immediately flush eyes with water and continue washing for at least 15 minutes. Obtain medical attention.

*****5. FIREFIGHTING MEASURES*****

FLASH POINT:

>93.4°C (200°F) PMCC ASTM D93

NFPA CLASSIFICATION USA

Health: 0 Flammability: 1 Reactivity: 0 Special provisions: -

EXTINGUISHING MEDIA:

- Suitable: Treat as an oil fire:
 - Dry chemical
 - Carbon dioxide (in case of small fires)
 - Water fog
 - Foam

Unsuitable: Do not use water jet. Oil will float on water and can spread any fire

SPECIAL FIREFIGHTING PROCEDURES:

Do not direct solid stream of water or foam into burning material; this may cause spattering and spread the fire.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS:

Self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Following products may be produced during a fire: Oxides of carbon

*****6. ACCIDENTAL RELEASE MEASURES*****

PERSONAL PRECAUTIONS

Wear suitable protective equipment.

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. After cooling, scrape and/or shovel material. 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

No exposure limits have been established

OCCUPATIONAL EXPOSURE CONTROLS

Respiratory protection

None expected to be needed

HAND PROTECTION/PROTECTIVE GLOVES

Wear oil resistant gloves. WHEN MOLTEN ONLY: wear gloves impervious to this material and able to resist and protect employees from the elevated temperature

EYE PROTECTION

WHEN MOLTEN ONLY: Face shield or chemical splash goggles in case of splashing

SKIN PROTECTION

WHEN MOLTEN ONLY: Wear protective clothing, such as long sleeves to minimize skin contact.

ENVIRONMENTAL EXPOSURE CONTROLS

None expected to be needed.

*****9. PHYSICAL AND CHEMICAL PROPERTIES*****

APPEARANCE:

PHYSICAL STATE:	Solid
COLOR:	White to yellow
ODOR:	None or mild Petroleum
ODOR THRESHOLD:	N/A

IMPORTANT HEALTH, SAFETY AND ENVIRONMENTAL INFORMATION

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:	>0.80 g/cm ³ at 100°C
BULT DENSITY:	Not available
SOLUBILITY IN WATER:	Insoluble
SOLUBILITY IN ORGANIC SOLVENTS:	Soluble
KINEMATIC VISCOSITY:	13 – 18 mm ² /s at 100°C
BOILING POINT:	>230°C
PH:	N/A
SPECIFIC GRAVITY (H2O=1):	<1
PARTITIONING COEFFICIENT:	log POW:>6 This product is soluble in oil.
PERCENTAGE VOLATILES:	Nil
AUTOIGNITION TEMPERATURE:	No Data
MELTING POINT:	54 - 102°C unless specified below

*****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

***** 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. TRANSPORTATION INFORMATION*****

ADR/RID

(when transported at <100°C) This product is not regulated by ADR.

When transported above <100°C) – UN3257 ELEVATED TEMPERAURE LIQUIDS, N.O.X. (9), III **Class:** 9 (M9), **UN No.:** 3257, **Packaging Group:** III, **Hazard No.:** 99, **Label:** 9, **Technical Description:** Microcrystalline Wax

Freight Description Road: 65 Petroleum Oil, N.O.I.B.N.

IMDG/ICAO

This product is not regulated by IMDG/ICAO.

FORBIDDEN BY AIR @ > = 100°C (molten)

TDG-CANADA

This product is not regulated by TDG.

*****15. REGULATORY INFORMATION*****

EC/GHS classification

According to EC/GHS regulations this product is not classified or labeled

New Jersey Worker and Community Right-To-Know Act (Labeling Requirements)

Chemical name	CAS#	New Jersey TS Number
Microcrystalline Wax	63231-60-7	

EPA Hazard Categories (SARA 311,312): None

WHMIS Classification: This product is not a WHMIS controlled product.

Chemical Inventory

Canada:	The ingredients of this product are on the DSL.
Europe:	The ingredients of this product are on the EINECS inventory
United States:	The ingredients of this product are on the TSCA inventory
Australia:	The ingredients of this product are on the AICS inventory
Japan:	The ingredients of this product are on the ENCS inventory

*****16. OTHER INFORMATION*****

HMIS® Hazard Ratings:

Health 1
Flammability 1
Reactivity 0
PPI – eye protection if working with molten material

Recommended uses and restriction

Please consult the product and/or application information bulletins for this product

Further information, Europe

Where appropriate, use CE approved personal protection equipment.

ISSUED DATE: June 1, 2020

The opinions expressed herein are those of qualified experts within Schaefer Machine Co., 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 of these opinions and the conditions of use of this product are not within the control of Schaefer Machine Co., Inc. it is the user’s obligation to determine the conditions of safe use of the products.

Hazard Communication Compliance Declaration

Newell-Rubbermaid (NWL) writing instruments comply with U.S. OSHA GHS Hazard Communication Standard of 29 CFR section 1910.1200 (OSHA HazCom 2012) by virtue of exemption as 'articles' and as 'consumer products' per 29 CFR section 1910.1200(b)(6)(v) and (ix). Therefore, GHS Safety Data Sheets are not required for our writing instruments.

An 'article' is defined in Section 1910.1200(c) "as a manufactured item other than a fluid or particle:

- Which is formed to a specific shape or design during manufacture;
- Which has end use function(s) dependent in whole or in part on its shape or design during end use; and
- Which, under normal conditions of use, does not release other than very small (minute or trace) amounts of a hazardous chemical and does not pose a physical hazard or health risk to employees."

The 'consumer product' exemption in 29 C.F.R. section 1910.1200(b)(6)(ix) states that:

- Any consumer product or hazardous substance, as those terms are defined in the Consumer Product Safety Act (15 U.S.C. 2051 et seq.) and Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.) respectively, where the employer can show that it is used in the workplace for the purpose intended by the chemical manufacturer or importer of the product, 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 purpose intended.

OSHA has consistently taken the position, in various rulemaking documents and interpretation letters, "most office products (such as pens, pencils, adhesive tape) to be exempt under the provisions of the rule, either as articles or as consumer products." Markers also fall into these exempted categories. This position is cited currently on [OSHA's website](#) in a letter from OSHA Assistant Secretary John A. Pendergrass to U.S. Congressman Jim Bunning. These examples are cited again in OSHA's FAQs on the [Hazard Communication Standard](#) which further reinforces that Newell-Rubbermaid writing products are exempt from Hazard Communication requirements, specifically GHS Safety Data Sheet documentation.

A non-exhaustive list is provided below of Newell-Rubbermaid writing instruments that qualify as 'articles' and 'consumer products' that are exempt from GHS Safety Data Sheet requirements:

- Prismacolor Premier Colored Pencils and Sharpeners
- Prismacolor Nupastels and Art Stix and Erasers
- Sharpie Permanent Markers
- Sharpie Pens
- Sharpie Highlighters (Clearview, Accent, etc)
- Paper Mate Pens (InkJoy, FlexGrip, Replay, etc)
- Paper Mate Mechanical Pencils
- Paper Mate Flair Pens
- Paper Mate Pearl Erasers
- Paper Mate Replay Premium Erasable Pens
- Expo Dry Erase Markers
- Expo Whiteboard Cleaner Wipes
- Expo Learning Boards
- Liquid Paper Correction Pens
- Liquid Paper Dryline Correction Tape
- Parker Fountain Pens
- Waterman Fountain Pens
- Rotring Tikky Ballpoint Pens
- Woodcase Pencils (Mongol, Mirado, etc)
- uni-ball pens