DAVIS
MECHANICAL
SYSTEMS

# SDS

# 2024

# Safety Data Sheet

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|---|---|---|---|
| **Document Group:** | 19-9776-6 | **Version Number:** | 8.00 |
| **Issue Date:** | 08/13/14 | **Supercedes Date:** | 08/13/14 |

## SECTION 1: Identification

**1.1. Product identifier**
3M FireBarrier™ Sealant IC 15 WB+

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

**1.2. Recommended use and restrictions on use**

**Recommended use**
Fire Barrier Sealant.

**1.3. Supplier's details**

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

**1.4. Emergency telephone number**
1-800-364-3577 or (651) 737-6501 (24 hours)

## SECTION 2: Hazard identification

**2.1. Hazard classification**
Serious Eye Damage/Irritation: Category 2B.
Carcinogenicity: Category 1A.

**2.2. Label elements**
**Signal word**
Danger

**Symbols**
Health Hazard |

**Pictograms**

**Hazard Statements**
Causes eye irritation.
May cause cancer.

**Precautionary Statements**
**General:**
Keep out of reach of children.

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

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

**Storage:**
Store locked up.

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

**2.3. Hazards not otherwise classified**
None.

## SECTION 3: Composition/information on ingredients

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

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

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

## SECTION 4: First aid measures

**4.1. Description of first aid measures**

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

**Skin Contact:**
Wash with soap and water. If signs/symptoms develop, get medical attention.

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

**If Swallowed:**
Rinse mouth. If you feel unwell, get medical attention.

**4.2. Most important symptoms and effects, both acute and delayed**
See Section 11.1. Information on toxicological effects.

**4.3. Indication of any immediate medical attention and special treatment required**
Not applicable

## SECTION 5: Fire-fighting measures

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

**5.2. Special hazards arising from the substance or mixture**
None inherent in this product.

**Hazardous Decomposition or By-Products**

| Substance | Condition |
|---|---|
| Carbon monoxide | During Combustion |
| Carbon dioxide | During Combustion |

**5.3. Special protective actions for fire-fighters**
No special protective actions for fire-fighters are anticipated.

## SECTION 6: Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

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

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

## SECTION 7: Handling and storage

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

**7.2. Conditions for safe storage including any incompatibilities**
No special storage requirements.

# SECTION 8: Exposure controls/personal protection

**8.1. Control parameters**

**Occupational exposure limits**

| Ingredient | C.A.S. No. | Agency | Limit type | Additional Comments |
|---|---|---|---|---|
| Calcium Carbonate | 1317-65-3 | OSHA | TWA(as total dust):15 mg/m3;TWA(respirable fraction):5 mg/m3 | |
| Quartz Silica | 14808-60-7 | ACGIH | TWA(respirable fraction):0.025 mg/m3 | A2: Suspected human carcin. |
| Quartz Silica | 14808-60-7 | OSHA | TWA concentration(as total dust):0.3 mg/m3;TWA concentration(respirable):0.1 mg/m3(2.4 millions of particles/cu. ft.) | |
| Fiberglass | 65997-17-3 | Manufacturer determined | TWA(as dust):10 mg/m3 | |

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
OSHA : United States Department of Labor - Occupational Safety and Health Administration
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

**8.2. Exposure controls**

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

**8.2.2. Personal protective equipment (PPE)**

**Eye/face protection**

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

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

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

**Respiratory protection**

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

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

## SECTION 9: Physical and chemical properties

**9.1. Information on basic physical and chemical properties**

| | |
|---|---|
| **General Physical Form:** | Solid |
| **Specific Physical Form:** | Paste |
| **Odor, Color, Grade:** | Light yellow viscous paste with a mild odor |
| **Odor threshold** | *No Data Available* |
| **Melting point** | *No Data Available* |
| **Boiling Point** | *Not Applicable* |
| **Flash Point** | Flash point > 93 °C (200 °F) |
| **Flammability (solid, gas)** | Not Classified |
| **Flammable Limits(LEL)** | *Not Applicable* |
| **Flammable Limits(UEL)** | *Not Applicable* |
| **Specific Gravity** | 1.4 [*Ref Std:* WATER=1] |
| **Solubility in Water** | Moderate |
| **Solubility- non-water** | *No Data Available* |
| **Autoignition temperature** | *No Data Available* |
| **Decomposition temperature** | *No Data Available* |
| **Volatile Organic Compounds** | < 2 g/l |
| **VOC Less H2O & Exempt Solvents** | < 2 g/l |

## SECTION 10: Stability and reactivity

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

**10.2. Chemical stability**
Stable.

**10.3. Possibility of hazardous reactions**
Hazardous polymerization will not occur.

**10.4. Conditions to avoid**
None known.

**10.5. Incompatible materials**
None known.

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

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

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

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

**Carcinogenicity:**
Contains a chemical or chemicals which can cause cancer.

| Ingredient | C.A.S. No. | Class Description | Regulation |
|---|---|---|---|
| Generic: GLASS FILAMENTS | 65997-17-3 | Anticipated human carcinogen | National Toxicology Program Carcinogens |
| Generic: GLASS FILAMENTS | 65997-17-3 | Grp. 2B: Possible human carc. | International Agency for Research on Cancer |
| Quartz Silica | 14808-60-7 | Grp. 1: Carcinogenic to humans | International Agency for Research on Cancer |
| SILICA, CRYS AIRRESP | 14808-60-7 | Known human carcinogen | National Toxicology Program Carcinogens |

**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 |
| Calcium Carbonate | Dermal | Rat | LD50 > 2,000 mg/kg |
| Calcium Carbonate | Inhalation-Dust/Mist (4 hours) | Rat | LC50 3.0 mg/l |
| Calcium Carbonate | Ingestion | Rat | LD50 6,450 mg/kg |
| Polymer NJTS Reg. No. 04499600-7314 | Ingestion | Rat | LD50 > 2,000 mg/kg |
| ZIinc Borate 2335 | Dermal | Rabbit | LD50 > 10,000 mg/kg |
| ZIinc Borate 2335 | Ingestion | Rat | LD50 > 10,000 mg/kg |
| Sodium Silicate | Dermal | Rabbit | LD50 > 4,640 mg/kg |
| Sodium Silicate | Ingestion | Rat | LD50 500 mg/kg |
| Fiberglass | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| Fiberglass | Ingestion | | LD50 estimated to be 2,000 - 5,000 mg/kg |
| Quartz Silica | Dermal | | LD50 estimated to be > 5,000 mg/kg |

| | | | |
|---|---|---|---|
| Quartz Silica | Ingestion | | LD50 estimated to be > 5,000 mg/kg |

ATE = acute toxicity estimate

## Skin Corrosion/Irritation

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

## Serious Eye Damage/Irritation

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

## Skin Sensitization

| Name | Species | Value |
|---|---|---|
| Sodium Silicate | Mouse | Not sensitizing |

## Respiratory Sensitization

| Name | Species | Value |
|---|---|---|

## Germ Cell Mutagenicity

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

## Carcinogenicity

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

## Reproductive Toxicity

## Reproductive and/or Developmental Effects

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

## Target Organ(s)

## Specific Target Organ Toxicity - single exposure

| Name | Route | Target Organ(s) | Value | Species | Test Result | Exposure Duration |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| Calcium Carbonate | Inhalation | respiratory system | All data are negative | Rat | NOAEL 0.812 mg/l | 90 minutes |
| Sodium Silicate | Inhalation | respiratory irritation | May cause respiratory irritation | official classification | NOAEL Not available | |

**Specific Target Organ Toxicity - repeated exposure**

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

**Aspiration Hazard**

| Name | Value |
|---|---|

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

# SECTION 12: Ecological information

## Ecotoxicological information

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

## Chemical fate information

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

# SECTION 13: Disposal considerations

### 13.1. Disposal methods

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

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

**EPA Hazardous Waste Number (RCRA):** Not regulated

# SECTION 14: Transport Information

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

# SECTION 15: Regulatory information

## 15.1. US Federal Regulations

Contact 3M for more information.

**311/312 Hazard Categories:**

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

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

| Ingredient | C.A.S. No | % by Wt |
|---|---|---|
| ZIinc Borate 2335 (ZINC COMPOUNDS) | 138265-88-0 | 3 - 7 |

## 15.2. State Regulations

Contact 3M for more information.

**California Proposition 65**

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

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

## 15.3. Chemical Inventories

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

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

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

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

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

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

Contact 3M for more information.

## 15.4. International Regulations

Contact 3M for more information.

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

## SECTION 16: Other information

**NFPA Hazard Classification**
**Health:** 1 **Flammability:** 1 **Instability:** 0 **Special Hazards:** None

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

| | | | |
|---|---|---|---|
| **Document Group:** | 19-9776-6 | **Version Number:** | 8.00 |
| **Issue Date:** | 08/13/14 | **Supercedes Date:** | 08/13/14 |

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**3M USA SDSs are available at www.3M.com**

# SAFETY DATA SHEET

Acetylene

## Section 1. Identification

**GHS product identifier** : Acetylene

**Chemical name** : acetylene

**Other means of identification** : Ethyne; Ethine; Narcylen; C2H2; Acetylen; UN 1001; Vinylene

**Product type** : Gas.

**Product use** : Synthetic/Analytical chemistry.

**Synonym** : Ethyne; Ethine; Narcylen; C2H2; Acetylen; UN 1001; Vinylene

**SDS #** : 001001

**Supplier's details** : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

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

## Section 2. Hazards identification

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

**Classification of the substance or mixture** : FLAMMABLE GASES - Category 1
GASES UNDER PRESSURE - Compressed gas

**GHS label elements**

**Hazard pictograms** :

**Signal word** : Danger

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

**Precautionary statements**

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

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

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

**Storage** : Protect from sunlight. Store in a well-ventilated place.

**Disposal** : Not applicable.

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

# Section 3. Composition/information on ingredients

**Substance/mixture** : Substance

**Chemical name** : acetylene

**Other means of identification** : Ethyne; Ethine; Narcylen; C2H2; Acetylen; UN 1001; Vinylene

**Product code** : 001001

## CAS number/other identifiers

**CAS number** : 74-86-2

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

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

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

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

# Section 4. First aid measures

## Description of necessary first aid measures

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

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

**Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

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

## Most important symptoms/effects, acute and delayed

### Potential acute health effects

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

**Inhalation** : No known significant effects or critical hazards.

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

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

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

### Over-exposure signs/symptoms

**Eye contact** : No specific data.

**Inhalation** : No specific data.

**Skin contact** : No specific data.

**Ingestion** : No specific data.

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

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

**Specific treatments** : No specific treatment.

## Section 4. First aid measures

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

**See toxicological information (Section 11)**

## Section 5. Fire-fighting measures

### Extinguishing media

**Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media** : None known.

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

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

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

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

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

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

### Methods and materials for containment and cleaning up

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

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

# Section 7. Handling and storage

## Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Use only non-sparking tools. Avoid contact with eyes, skin and clothing. Empty containers retain product residue and can be hazardous. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.

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

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

# Section 8. Exposure controls/personal protection

## Control parameters

### Occupational exposure limits

| Ingredient name | Exposure limits |
|---|---|
| acetylene | **NIOSH REL (United States, 10/2016).**<br>CEIL: 2662 mg/m³<br>CEIL: 2500 ppm<br>**ACGIH TLV (United States, 3/2017). Oxygen Depletion [Asphyxiant].**<br><br>**California PEL for Chemical Contaminants (*Table AC-1*) (United States). Oxygen Depletion [Asphyxiant].** |

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

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

## Individual protection measures

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

## 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: safety glasses with side-shields.

**Skin protection**

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

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

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

**Respiratory protection** : 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. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 9. Physical and chemical properties

**Appearance**

**Physical state** : Gas.

**Color** : Colorless.

**Odor** : Mild. Ethereal.

**Odor threshold** : Not available.

**pH** : Not available.

**Melting point** : -81°C (-113.8°F)

**Boiling point** : Not available.

**Critical temperature** : 35.25°C (95.5°F)

**Flash point** : Closed cup: -18.15°C (-0.67°F)

**Evaporation rate** : Not available.

**Flammability (solid, gas)** : Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and oxidizing materials.
Highly flammable in the presence of the following materials or conditions: heat.

**Lower and upper explosive (flammable) limits** : Lower: 2.5%
Upper: 100%

**Vapor pressure** : 635 (psig)

**Vapor density** : 0.907 (Air = 1)

**Specific Volume (ft $^3$/lb)** : 14.7058

**Gas Density (lb/ft $^3$)** : 0.0691

**Relative density** : Not applicable.

**Solubility** : Not available.

**Solubility in water** : 1.2 g/l

**Partition coefficient: n-octanol/water** : 0.37

**Auto-ignition temperature** : 305°C (581°F)

## Section 9. Physical and chemical properties

**Decomposition temperature** : Not available.

**Viscosity** : Not applicable.

**Flow time (ISO 2431)** : Not available.

**Molecular weight** : 26.04 g/mole

**Aerosol product**

**Heat of combustion** : -48257522 J/kg

## Section 10. Stability and reactivity

**Reactivity** : No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability** : The product is stable.

**Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

**Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

**Incompatible materials** : Oxidizers

**Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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

## Section 11. Toxicological information

**Information on toxicological effects**

**Acute toxicity**

Not available.

**Irritation/Corrosion**

Not available.

**Sensitization**

Not available.

**Mutagenicity**

Not available.

**Carcinogenicity**

Not available.

**Reproductive toxicity**

Not available.

**Teratogenicity**

Not available.

**Specific target organ toxicity (single exposure)**

Not available.

**Specific target organ toxicity (repeated exposure)**

Not available.

**Aspiration hazard**

# Section 11. Toxicological information

Not available.

**Information on the likely routes of exposure** : Not available.

**Potential acute health effects**

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

**Inhalation** : No known significant effects or critical hazards.

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

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

**Symptoms related to the physical, chemical and toxicological characteristics**

**Eye contact** : No specific data.

**Inhalation** : No specific data.

**Skin contact** : No specific data.

**Ingestion** : No specific data.

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

**Short term exposure**

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

**Long term exposure**

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

**Potential chronic health effects**

Not available.

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

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

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : No known significant effects or critical hazards.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

**Numerical measures of toxicity**

**Acute toxicity estimates**

Not available.

# Section 12. Ecological information

**Toxicity**

Not available.

**Persistence and degradability**

Not available.

**Bioaccumulative potential**

## Section 12. Ecological information

| Product/ingredient name | $LogP_{ow}$ | BCF | Potential |
|---|---|---|---|
| acetylene | 0.37 | - | low |

**Mobility in soil**

**Soil/water partition coefficient ($K_{OC}$)** : Not available.

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

## Section 13. Disposal considerations

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

## Section 14. Transport information

| | DOT | TDG | Mexico | IMDG | IATA |
|---|---|---|---|---|---|
| **UN number** | UN1001 | UN1001 | UN1001 | UN1001 | UN1001 |
| **UN proper shipping name** | ACETYLENE, DISSOLVED | ACETYLENE, DISSOLVED | ACETYLENE, DISSOLVED | ACETYLENE, DISSOLVED | ACETYLENE, DISSOLVED |
| **Transport hazard class(es)** | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 |
| **Packing group** | - | - | - | - | - |
| **Environmental hazards** | No. | No. | No. | No. | No. |

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

**Additional information**

**DOT Classification** : **Limited quantity** Yes.
**Quantity limitation** Passenger aircraft/rail: Forbidden. Cargo aircraft: 15 kg.

**TDG Classification** : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2).

**Explosive Limit and Limited Quantity Index**
0

**Passenger Carrying Ship Index**
75

**Passenger Carrying Road or Rail Index**
Forbidden

## Section 14. Transport information

**Special provisions**
38

**IATA** : **Quantity limitation** Passenger and Cargo Aircraft: Forbidden. Cargo Aircraft Only: 15 kg.

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

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

## Section 15. Regulatory information

**U.S. Federal regulations** : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

**Clean Air Act (CAA) 112 regulated flammable substances**: acetylene

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

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

**SARA 302/304**

**Composition/information on ingredients**

No products were found.

**SARA 304 RQ** : Not applicable.

**SARA 311/312**

**Classification** : Refer to Section 2: Hazards Identification of this SDS for classification of substance.

**State regulations**

**Massachusetts** : This material is listed.

**New York** : This material is not listed.

**New Jersey** : This material is listed.

**Pennsylvania** : This material is listed.

**International regulations**

**Chemical Weapon Convention List Schedules I, II & III Chemicals**

Not listed.

**Montreal Protocol (Annexes A, B, C, E)**

Not listed.

**Stockholm Convention on Persistent Organic Pollutants**

Not listed.

**Rotterdam Convention on Prior Informed Consent (PIC)**

Not listed.

**UNECE Aarhus Protocol on POPs and Heavy Metals**

# Section 15. Regulatory information

Not listed.

## Inventory list

| | |
|---|---|
| **Australia** | : This material is listed or exempted. |
| **Canada** | : This material is listed or exempted. |
| **China** | : This material is listed or exempted. |
| **Europe** | : This material is listed or exempted. |
| **Japan** | : **Japan inventory (ENCS)**: This material is listed or exempted.<br>**Japan inventory (ISHL)**: Not determined. |
| **Malaysia** | : Not determined. |
| **New Zealand** | : This material is listed or exempted. |
| **Philippines** | : This material is listed or exempted. |
| **Republic of Korea** | : This material is listed or exempted. |
| **Taiwan** | : This material is listed or exempted. |
| **Thailand** | : Not determined. |
| **Turkey** | : This material is listed or exempted. |
| **United States** | : This material is listed or exempted. |
| **Viet Nam** | : Not determined. |

# Section 16. Other information

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

| | | |
|---|---|---|
| **Health** | / | 0 |
| **Flammability** | | 4 |
| **Physical hazards** | | 3 |

**Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.**

**The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.**

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

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

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

## Procedure used to derive the classification

| Classification | Justification |
|---|---|
| FLAMMABLE GASES - Category 1<br>GASES UNDER PRESSURE - Compressed gas | Expert judgment<br>According to package |

# Section 16. Other information

## History

| | | |
|---|---|---|
| **Date of printing** | : | 1/18/2018 |
| **Date of issue/Date of revision** | : | 1/18/2018 |
| **Date of previous issue** | : | 10/10/2017 |
| **Version** | : | 1.01 |
| **Key to abbreviations** | : | ATE = Acute Toxicity Estimate<br>BCF = Bioconcentration Factor<br>GHS = Globally Harmonized System of Classification and Labelling of Chemicals<br>IATA = International Air Transport Association<br>IBC = Intermediate Bulk Container<br>IMDG = International Maritime Dangerous Goods<br>LogPow = logarithm of the octanol/water partition coefficient<br>MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)<br>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
# GB001 Bare Copper based brazing rods.

AFROX
A Member of The Linde Group

**Version number:** 1
**Replaces SDS:** 2009-11-23
**Issued:** 2014-04-01

**Not for sale in the USA**

## Section 1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

*1.1 Product identifier*

**Trade name** BARE COPPER BASED BRAZING RODS
(Easiflo Flux, Easyflo Flux Paste, Tenacty no. Flux Paste Stainless Steel Grade, Silverflo 55, Silverflo 40, Silverflo 30, Fridgebraze Bare, Fluxocoat 402, Silvercoat 30, Flux Coated Fridgebraze, Silvercoat 18)

**Article-no**

| *Product Packaging Data* | *Diameter (mm)* | *Consumable Length (mm)* | *Pack Mass (kg)* | *Item Number* |
|---|---|---|---|---|
| **Afrox M15 Bronze** | 2,0 | 750 | 5,0 | W000504 |
| | 3,2 | 750 | 5,0 | W000500 |
| | 5,0 | 750 | 5,0 | W000501 |
| | 6,3 | 750 | 5,0 | W000502 |
| **Afrox Fluxobronze M15** | 2,5 | 450 | 5,0 | W000375 |
| | 3,2 | 450 | 5,0 | W000376 |
| **Afrox Nickel Bronze DB** | 1,5 | 700 | 5,0 | W000520 |
| | 2,0 | 700 | 5,0 | W000522 |
| | 3,2 | 700 | 5,0 | W000521 |

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

**Article type** Gas Brazing: Bare copper based brazing rod Classification: AWS SFA A5.8/5.27 (or other)
**Use** Oxy-Fuel brazing

*1.3 Details of the supplier of the safety data sheet*


**Supplier** Afrox
Street address 23 Webber Street, Selby
Johannesburg, 2001
South Africa
Telephone +27 (0) 11 490 0400
Fax +27 (0) 860 020201
**Email** Customer.service@afrox.linde.com


*1.4 Emergency telephone number*

**Available outside office hours** Yes
**Emergency phone number** 0860 02 02 02

Other

| | |
|---|---|
| **Additional product information** | **Web site: www.afrox.co.za** |

## Section 2. HAZARDS IDENTIFICATION

*2.1 Classification of the substance or mixture*

Classification according to Regulation (EC) 1271/2008 [CLP] applicable

*2.2 Label elements*

Not applicable

*2.3 Other hazards*

Do not touch hot parts.

Overexposure to the fumes and gases can give rise to dryness of the nose, throat and eyes, respiratory irritation and, in some cases, longer term health effects such as irreversible central nervous system damage and lung deposits.

## Section 3. COMPOSITION / INFORMATION ON INGREDIENTS

*3.1 Substances*

This product is a mixture and please refer to Section 3.2

*3.2 Mixtures*

| AWS Classification | Cu | Ag | Zn | Sn | Fe | Mn | Ni | P | Si |
|---|---|---|---|---|---|---|---|---|---|
| BCu-1 | 99.9 min | - | - | - | - | - | - | 0.075 | - |
| RBCuZn-X | 46.0-61.0 | - | Bal. | 1.1 | 1.20 | 0.50 | 11.0 | 0.25 | 0.25 |
| BcuP-X | Bal. | 1.8-15.5 | - | - | - | - | - | 4.8-7.5 | - |

## Section 4. FIRST AND MEASURES

*4.1 Description of first aid measures*

| | |
|---|---|
| **Inhalation** | IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms occur. |
| **Skin contact** | Burns should be treated by a doctor. |
| **Eye contact** | Generally not applicable |
| **Ingestion** | Contact a doctor if more than an insignificant amount has been swallowed. |

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

| | |
|---|---|
| **Inhalation** | Inhalation of vapours may cause irritation of the respiratory system in very susceptible persons.<br>Copper, magnesium, aluminium, antimony, iron, manganese, nickel, zinc (and their compounds) in brazing al give rise to thermally produced particulates of smaller dimension than may be produced if the metals are divided mechanically. Where insufficient ventilation or respiratory protection is available these particulates may produce “metal fume fever” in workers from an acute or long term exposure.<br>Onset occurs in 4-6 hours generally on the evening following exposure. |

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

Not applicable

## Section 5. FIRE-FIGHTING MEASURES

*5.1 Extinguishing media*

| | |
|---|---|
| **Suitable extinguishing media** | There is no restriction on the type of extinguisher which may be used.<br>Use extinguishing media suitable for surrounding area |

*5.2 Special hazards arising from the substance or mixture*

Not applicable

*5.3 Advice for fire fighters*

| | |
|---|---|
| **Special protective equipment for fire fighters** | Wear self contained breathing apparatus |

## Section 6. ACCIDENTAL RELEASE MEASURES

*6.1 Personal precautions, protective equipment and emergency procedures*

General ventilation and local fume extraction must be adequate to keep fume concentrations within safe limits. Use respiratory equipment when brazing in a confined space. Wear protective clothing and eye protection appropriate to welding. Skin contact should be avoided to prevent possible allergic reactions.

*6.2 Environmental precautions*

Try to prevent the material from entering drains or water courses.

*6.3 Methods and material for containment and cleaning up*

Not applicable

*6.4 Reference to other sections*

For *Personal protection* see section 8. For *Disposal* see section 13. For *Environmental precautions* see section 12. For *Precautions for safe handling* see 7.1.

## Section 7. HANDLING AND STORAGE

*7.1 Precautions for safe handling*

| | |
|---|---|
| **Preventive handling precautions** | Ensure adequate ventilation for the welder and others. Use respiratory equipment when brazing in a confined space. Wear protective clothing and eye protection appropriate to welding. Remove all flammable materials and liquids before welding. |
| **General hygiene** | Wash hands before breaks and immediately after handling the product. |

*7.2 Conditions for safe storage, including any incompatibilities*

Store welding consumables inside a room without humidity. Do not store welding consumables directly on the ground or beside walls. Store away from chemical substances like acids which could cause chemical reactions.

*7.3 Specific end use(s)*

Welding process.

## Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

*8.1 Control parameters*

| Welding fume component | CAS No. | ES-TWA | ES-STEL |
|---|---|---|---|
| Copper, fume | 7440-50-8 | 0.2 | |
| Manganese and its inorganic compounds (as Mn) | 7439-96-5 | 0.5 | |
| Zinc oxide, fume | 1314-13-2 | 5 | 10 |
| Nickel and its inorganic compounds<br>Water soluble<br>Water insoluble | | <br>0.1<br>0.5 | |
| Silver compounds (as Ag) | | 0.01 | |
| Diphosphorus pentoxide | 1314-56-3 | | 2 |
| Tin compounds, inorganic (as Sn) | 7440-31-5 | 2 | 4 |
| Iron oxide fume (as Fe) | 1309-37-1 | 5 | 10 |
| Silica, amorphous<br>(total inhalable dust)<br>(respirable dust) | - | <br>6<br>2.4 | |
| Carbon Dioxide | 124-38-9 | 5000ppm | 15000ppm |
| Carbon Monoxide | 630-08-0 | 30ppm | 200ppm |

*8.2 Exposure controls*

*Environmental Exposure Control = Refer to Section 6 of this SDS*

| | |
|---|---|
| **Technical precaution measures** | General ventilation and local fume extraction must be adequate to keep fume concentrations within safe limits. |
| **Eye / face protection** | Wear eye protection appropriate for welding. |
| **Safety gloves** | Skin contact should be avoided to prevent possible allergic reactions. |
| **Other skin protection** | Wear body protection which helps to prevent injury from radiation, sparks and electric shock. |
| **Respiratory protection** | Use respiratory equipment when welding in a confined space. Wear protective clothing |

| | |
|---|---|
| | and eye protection appropriate to arc welding. |

## Section 9. PHYSICAL AND CHEMICAL PROPERTIES

*9.1 Information on basic physical and chemical properties*

| | |
|---|---|
| **Appearance, colour** | Metal rods; does not mix with water |
| **Appearance, physical state** | Rod |
| **Auto-ignition temperature** | Not applicable |
| **Auto-inflammability** | Not auto-flammable |
| **Decomposition temperature** | Not applicable |
| **Evaporation rate** | Not applicable |
| **Explosive properties** | Not explosive |
| **Flammability (solid gas)** | Not applicable |
| **Flash point** | Not applicable |
| **Form** | Fast |
| **Initial boiling point and boiling range** | Not applicable |
| **Melting point / Freezing point** | Not applicable |
| **Odour** | Odourless |
| **Odour threshold** | Not applicable |
| **Oxidising properties** | Not applicable |
| **Partition coefficient: n-octanol / water** | Not applicable |
| **pH value** | Not applicable |
| **Relative density** | Not applicable |
| **Solubility** | Not applicable |
| **Solubility in water** | Insoluble |
| **Upper / lower flammability or explosive limits** | Not applicable |
| **Vapour density** | Not applicable |
| **Vapour pressure** | Not applicable |
| **Viscosity** | Not applicable |

*9.2 Other information*

| | |
|---|---|
| Other | Not applicable |

| | |
|---|---|
| | 8.96g/cm$^3$ |

## Section 10. STABILITY AND REACTIVITY

*10.1 Reactivity*

Not applicable

*10.2 Chemical stability*

Stable at normal conditions.

*10.3 Possibility of hazardous reactions*

Not applicable

*10.4 Conditions to avoid*

None under normal conditions

*10.5 Incompatible materials*

Not applicable

*10.6 Hazardous decomposition products*

Welding fumes and gases. Additional fume may arise from coatings and contaminants on the base material.

| Welding fume component | CAS No. | Classification (67/548EEC) | CLP (1272/2008) | | Concentration of classified fume components |
|---|---|---|---|---|---|
| Copper oxide (Cu) | 1317-38-0 | - | - | - | 30.0 to 60.0 |
| Zinc (Zn) | 7440-66-6 | - | - | - | 30.0 to 60.0 |
| Nickel (Ni) | 7440-02-0 | R40: Limited evidence of carcinogenic effect<br>R43: May cause sensitisation by skin contact<br>R48/23: Toxic danger of serious damage to health by prolonged exposure through inhalation<br>R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment | Carc. 2<br>Skin sens 1<br>STOT RE 1 | H351<br>H317<br>H372 | 0.0 to 15.0 |
| Manganese (Mn) | 7439-96-5 | - | - | - | 0.0 to 5.0 |

| | | | | | |
|---|---|---|---|---|---|
| Silicon (Si) | 7440-21-3 | - | - | - | 0.0 to 1.0 |
| Tin compounds (Sn) | 7440-31-5 | - | - | - | 0.0 to 5.0 |
| Iron oxide (Fe) | 1332-37-2 | - | - | - | Not specified |

| Classification | H phrase | Text |
|---|---|---|
| Skin sensitiser: Category 1 | H317 | May cause an allergic skin reaction |
| Carcinogenicity: Category 2 | H351 | Suspected of causing cancer |
| STOT RE: Category 1 | H372 | Causes damage to organs |

The classification information above relates to the fume during use

## Section 11. TOXICOLOGICAL INFORMATION

*11.1 Information on toxicological effects*

Conditions to avoid: none in the form supplied

When welding, fumes and gases generated can be dangerous to health.

| | |
|---|---|
| **Acute toxicology** | Excessive exposures may affect human health, as follows: Aspiration may cause pulmonary oedema and pneumonitis Short-term overexposure can cause dizziness, nausea and irritation of the nose, throat or eyes. |
| **Irritation** | Not applicable |
| **Corrosive effects** | Not applicable |
| **Sensitisation** | May cause sensitisation by skin contact |
| **Mutagenicity** | Not applicable |
| **Carcinogenicity** | Welding fumes are possibly carcinogenic to humans |
| **Repeated dose toxicity** | Not applicable |
| **Reproductive toxicity** | Not applicable |

## Section 12. ECOLOGICAL INFORMATION

*12.1 Toxicity*

Not Available. Refer to individual constituents

*12.2 Persistence and degradability*

Not applicable

*12.3 Bio accumulative potential*

No data available

*12.4 Mobility in Soil*

Not applicable

*12.5 Results of PBT and vPvB assessment*

Not applicable

*12.6 Other adverse effects*

Not applicable

## Section 13. DISPOSAL CONSIDERATIONS

*13.1 Waste treatment methods*

| | |
|---|---|
| **Disposal considerations** | Dispose of any product, residue or packing material according to national and local regulations. Spent ;fume extraction filters shall be disposed of as dangerous waste. |

Other

| | |
|---|---|
| **Waste code (EWC)** | 12 01 13 – welding waste |

## Section 14. TRANSPORT INFORMATION

*14.1 UN number*

Not applicable

*14.2 UN proper shipping name*

Not applicable

*14.3 Transport hazard class(es)*

Not applicable

*14.4 Packing group*

Not applicable

*14.5 Environmental hazards*

Not applicable

*14.6 Special precautions for user*

Not applicable

*14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code*

Not applicable

Other

**Dangerous goods** No

## Section 15. REGUATORY INFORMATION

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

***EU regulations*** *The product does not need to be labelled in accordance with EC directives or respective national laws.*

***National regulations*** *EH40/2005 Workplace exposure limits*
*The Waste Regulations 2011 No. 988*
*Local laws and regulations should be carefully observed.*

*15.2 Chemical safety assessment*

*Not applicable*

## Section 16. OTHER INFORMATION

**References to key literature and data sources**

Regulation (EC) No 1907/2006 of the European Parliament and of the Council, (REACH).
Regulation (EC) No 1272/2008 of the European Parliament and of the Council.
EH40/2005 Workplace exposure limits.
The Waste regulations 2011 No.988
KIFS 2005:7
www.prevent.se
C&L Inventory database
Annex VI CLP Regulation (EC) 1272/2008

**Phrase meaning**

| | |
|---|---|
| H317 | May cause an allergic skin reaction |
| H351 | Suspected of causing cancer |
| H372 | Causes damage to organs |

Other

**Manufacturer's notes** *Read this Safety Data Sheet carefully and become aware of hazards implied and the safety*

*information.*

End of document

# SAFETY DATA SHEET

Carbon Dioxide

## Section 1. Identification

**GHS product identifier** : Carbon Dioxide

**Chemical name** : Carbon dioxide

**Other means of identification** : Carbonic, Carbon Dioxide, Carbonic Anhydride, R744

**Product use** : Synthetic/Analytical chemistry.

**Synonym** : Carbonic, Carbon Dioxide, Carbonic Anhydride, R744

**SDS #** : 001013

**Supplier's details** : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

**Emergency telephone number (with hours of operation)** : 1-866-734-3438

## Section 2. Hazards identification

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

**Classification of the substance or mixture** : GASES UNDER PRESSURE - Liquefied gas
Simple asphyxiant.

**GHS label elements**

**Hazard pictograms** :

**Signal word** : Warning

**Hazard statements** : Contains gas under pressure; may explode if heated.
May cause frostbite.
May displace oxygen and cause rapid suffocation.
May increase respiration and heart rate.

**Precautionary statements**

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

**Prevention** : Use and store only outdoors or in a well ventilated place.

**Response** : Not applicable.

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

**Disposal** : Not applicable.



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## Section 2. Hazards identification

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

## Section 3. Composition/information on ingredients

**Substance/mixture** : Substance

**Chemical name** : Carbon dioxide

**Other means of identification** : Carbonic, Carbon Dioxide, Carbonic Anhydride, R744

### CAS number/other identifiers

**CAS number** : 124-38-9

**Product code** : 001013

| Ingredient name | % | CAS number |
|---|---|---|
| Carbon Dioxide | 100 | 124-38-9 |

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

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

## Section 4. First aid measures

### Description of necessary first aid measures

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

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

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

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

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

**Eye contact** : No known significant effects or critical hazards.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : No known significant effects or critical hazards.

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

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

#### Over-exposure signs/symptoms

**Eye contact** : No specific data.

**Inhalation** : No specific data.

**Skin contact** : No specific data.



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## Section 4. First aid measures

**Ingestion** : No specific data.

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

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

**Specific treatments** : No specific treatment.

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

**See toxicological information (Section 11)**

## Section 5. Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media** : None known.

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

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

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

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

## Section 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

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

**Methods and materials for containment and cleaning up**

**Small spill** : Immediately contact emergency personnel. Stop leak if without risk.

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



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# Section 7. Handling and storage

## Precautions for safe handling

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

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

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

# Section 8. Exposure controls/personal protection

## Control parameters

### Occupational exposure limits

| Ingredient name | Exposure limits |
|---|---|
| Carbon Dioxide | **ACGIH TLV (United States, 3/2012). Oxygen Depletion [Asphyxiant].**<br>STEL: 54000 mg/m³ 15 minutes.<br>STEL: 30000 ppm 15 minutes.<br>TWA: 9000 mg/m³ 8 hours.<br>TWA: 5000 ppm 8 hours.<br>**NIOSH REL (United States, 1/2013).**<br>STEL: 54000 mg/m³ 15 minutes.<br>STEL: 30000 ppm 15 minutes.<br>TWA: 9000 mg/m³ 10 hours.<br>TWA: 5000 ppm 10 hours.<br>**OSHA PEL (United States, 6/2010).**<br>TWA: 9000 mg/m³ 8 hours.<br>TWA: 5000 ppm 8 hours.<br>**OSHA PEL 1989 (United States, 3/1989).**<br>STEL: 54000 mg/m³ 15 minutes.<br>STEL: 30000 ppm 15 minutes.<br>TWA: 18000 mg/m³ 8 hours.<br>TWA: 10000 ppm 8 hours. |

**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

## Section 8. Exposure controls/personal protection

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

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

**Skin protection**

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

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

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

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

## Section 9. Physical and chemical properties

**Appearance**

**Physical state** : Gas. [Liquefied compressed gas.]

**Color** : Colorless.

**Molecular weight** : 44.01 g/mole

**Molecular formula** : C-O2

**Melting/freezing point** : Sublimation temperature: -79°C (-110.2 to °F)

**Critical temperature** : 30.85°C (87.5°F)

**Odor** : Odorless.

**Odor threshold** : Not available.

**pH** : Not available.

**Flash point** : [Product does not sustain combustion.]

**Burning time** : Not applicable.

**Burning rate** : Not applicable.

**Evaporation rate** : Not available.

**Flammability (solid, gas)** : Not available.

**Lower and upper explosive (flammable) limits** : Not available.

**Vapor pressure** : 830 (psig)

**Vapor density** : 1.53 (Air = 1) Liquid Density@BP: Solid density = 97.5 lb/ft3 (1562 kg/m3)

**Specific Volume (ft $^3$/lb)** : 8.7719

## Section 9. Physical and chemical properties

| | | |
|---|---|---|
| **Gas Density (lb/ft $^3$)** | : | 0.114 |
| **Relative density** | : | Not applicable. |
| **Solubility** | : | Not available. |
| **Solubility in water** | : | Not available. |
| **Partition coefficient: n-octanol/water** | : | 0.83 |
| **Auto-ignition temperature** | : | Not available. |
| **Decomposition temperature** | : | Not available. |
| **SADT** | : | Not available. |
| **Viscosity** | : | Not applicable. |

## Section 10. Stability and reactivity

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

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Not available.

#### Irritation/Corrosion

Not available.

#### Sensitization

Not available.

#### Mutagenicity

Not available.

#### Carcinogenicity

Not available.

#### Reproductive toxicity

Not available.

#### Teratogenicity

Not available.



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# Section 11. Toxicological information

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

**Information on the likely routes of exposure** : Not available.

### Potential acute health effects

**Eye contact** : No known significant effects or critical hazards.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : No known significant effects or critical hazards.

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

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : No specific data.

**Inhalation** : No specific data.

**Skin contact** : No specific data.

**Ingestion** : No specific data.

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

#### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Potential chronic health effects

Not available.

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

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

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : No known significant effects or critical hazards.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.



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# Section 12. Ecological information

## Toxicity

Not available.

## Persistence and degradability

Not available.

## Bioaccumulative potential

| Product/ingredient name | $LogP_{ow}$ | BCF | Potential |
|---|---|---|---|
| Carbon Dioxide | 0.83 | - | low |

## Mobility in soil

**Soil/water partition coefficient ($K_{OC}$)** : Not available.

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

# Section 13. Disposal considerations

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

# Section 14. Transport information

| | DOT | TDG | Mexico | IMDG | IATA |
|---|---|---|---|---|---|
| **UN number** | UN1013 | UN1013 | UN1013 | UN1013 | UN1013 |
| **UN proper shipping name** | CARBON DIOXIDE | CARBON DIOXIDE | CARBON DIOXIDE | CARBON DIOXIDE | CARBON DIOXIDE |
| **Transport hazard class(es)** | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 |
| **Packing group** | - | - | - | - | - |
| **Environment** | No. | No. | No. | No. | No. |
| **Additional information** | **Limited quantity** Yes.<br><br>**Packaging instruction**<br>**Passenger aircraft** Quantity limitation: 75 kg<br><br>**Cargo aircraft** | **Explosive Limit and Limited Quantity Index** 0.125<br><br>**Passenger Carrying Road or Rail Index** 75 | - | - | **Passenger and Cargo Aircraft**Quantity limitation: 75 kg<br>**Cargo Aircraft Only** Quantity limitation: 150 kg |



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## Section 14. Transport information

| | | | | | |
|---|---|---|---|---|---|
| | Quantity limitation: 150 kg | | | | |

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

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

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

## Section 15. Regulatory information

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

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

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

**SARA 302/304**

**Composition/information on ingredients**

No products were found.

**SARA 304 RQ** : Not applicable.

**SARA 311/312**

**Classification** : Sudden release of pressure

**Composition/information on ingredients**

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

**State regulations**

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

**Canada inventory** : This material is listed or exempted.



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# Section 15. Regulatory information

## International regulations

**International lists** : **Australia inventory (AICS)**: This material is listed or exempted.
**China inventory (IECSC)**: This material is listed or exempted.
**Japan inventory**: This material is listed or exempted.
**Korea inventory**: This material is listed or exempted.
**Malaysia Inventory (EHS Register)**: Not determined.
**New Zealand Inventory of Chemicals (NZIoC)**: This material is listed or exempted.
**Philippines inventory (PICCS)**: This material is listed or exempted.
**Taiwan inventory (CSNN)**: Not determined.

**Chemical Weapons Convention List Schedule I Chemicals** : Not listed

**Chemical Weapons Convention List Schedule II Chemicals** : Not listed

**Chemical Weapons Convention List Schedule III Chemicals** : Not listed

## Canada

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

# Section 16. Other information

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

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

| | |
|---|---|
| Health | 1 |
| Flammability | 0 |
| Physical hazards | 3 |

**Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.**

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

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

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# Section 16. Other information

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

## History

**Date of printing** : 5/26/2015.

**Date of issue/Date of revision** : 5/26/2015.

**Date of previous issue** : 5/21/2015.

**Version** : 1

**Key to abbreviations** : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United NationsACGIH – American Conference of Governmental Industrial Hygienists
AIHA – American Industrial Hygiene Association
CAS – Chemical Abstract Services
CEPA – Canadian Environmental Protection Act
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act (EPA)
CFR – United States Code of Federal Regulations
CPR – Controlled Products Regulations
DSL – Domestic Substances List
GWP – Global Warming Potential
IARC – International Agency for Research on Cancer
ICAO – International Civil Aviation Organisation
Inh – Inhalation
LC – Lethal concentration
LD – Lethal dosage
NDSL – Non-Domestic Substances List
NIOSH – National Institute for Occupational Safety and Health
TDG – Canadian Transportation of Dangerous Goods Act and Regulations
TLV – Threshold Limit Value
TSCA – Toxic Substances Control Act
WEEL – Workplace Environmental Exposure Level
WHMIS – Canadian Workplace Hazardous Material Information System

**References** : Not available.

**Indicates information that has changed from previously issued version.**

## Notice to reader



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# Section 16. Other information

**To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.**
**Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.**



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# SAFETY DATA SHEET

Oxygen

## Section 1. Identification

**GHS product identifier** : Oxygen

**Chemical name** : oxygen

**Other means of identification** : Molecular oxygen; Oxygen molecule; Pure oxygen; O2; UN 1072; Dioxygen; Oxygen USP, Aviator's Breathing Oxygen (ABO)

**Product use** : Synthetic/Analytical chemistry.

**Synonym** : Molecular oxygen; Oxygen molecule; Pure oxygen; O2; UN 1072; Dioxygen; Oxygen USP, Aviator's Breathing Oxygen (ABO)

**SDS #** : 001043

**Supplier's details** : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

**Emergency telephone number (with hours of operation)** : 1-866-734-3438

## Section 2. Hazards identification

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

**Classification of the substance or mixture** : OXIDIZING GASES - Category 1
GASES UNDER PRESSURE - Compressed gas

**GHS label elements**

**Hazard pictograms** :

**Signal word** : Danger

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

**Precautionary statements**

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

**Prevention** : Keep away from clothing, incompatible materials and combustible materials. Keep reduction valves free from grease and oil. Use and store only outdoors or in a well ventilated place.

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

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

**Disposal** : Not applicable.



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## Section 2. Hazards identification

**Hazards not otherwise classified** : None known.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Substance

**Chemical name** : oxygen

**Other means of identification** : Molecular oxygen; Oxygen molecule; Pure oxygen; O2; UN 1072; Dioxygen; Oxygen USP, Aviator's Breathing Oxygen (ABO)

### CAS number/other identifiers

**CAS number** : 7782-44-7

**Product code** : 001043

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

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

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

## Section 4. First aid measures

### Description of necessary first aid measures

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

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

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

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

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

**Eye contact** : May cause eye irritation. Contact with rapidly expanding gas may cause burns or frostbite.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : May cause skin irritation. Contact with rapidly expanding gas may cause burns or frostbite.

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

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

#### Over-exposure signs/symptoms

**Eye contact** : No specific data.

**Inhalation** : No specific data.

**Skin contact** : No specific data.



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## Section 4. First aid measures

**Ingestion** : No specific data.

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

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

**Specific treatments** : No specific treatment.

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

**See toxicological information (Section 11)**

## Section 5. Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media** : None known.

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

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

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

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

## Section 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

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

**Methods and materials for containment and cleaning up**

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



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## Section 6. Accidental release measures

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

## Section 7. Handling and storage

### Precautions for safe handling

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

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

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

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

None.

**Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

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

### Individual protection measures

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

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

### Skin protection



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## Section 8. Exposure controls/personal protection

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

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

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

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

## Section 9. Physical and chemical properties

**Appearance**

**Physical state** : Gas. [Compressed gas.]

**Color** : Colorless. Blue.

**Molecular weight** : 32 g/mole

**Molecular formula** : O2

**Boiling/condensation point** : -183°C (-297.4°F)

**Melting/freezing point** : -218.4°C (-361.1°F)

**Critical temperature** : -118.15°C (-180.7°F)

**Odor** : Odorless.

**Odor threshold** : Not available.

**pH** : Not available.

**Flash point** : [Product does not sustain combustion.]

**Burning time** : Not applicable.

**Burning rate** : Not applicable.

**Evaporation rate** : Not available.

**Flammability (solid, gas)** : Extremely flammable in the presence of the following materials or conditions: reducing materials, combustible materials and organic materials.

**Lower and upper explosive (flammable) limits** : Not available.

**Vapor pressure** : Not available.

**Vapor density** : 1.1 (Air = 1)

**Specific Volume (ft $^3$/lb)** : 12.0482

**Gas Density (lb/ft $^3$)** : 0.083

**Relative density** : Not applicable.

**Solubility** : Not available.

**Solubility in water** : Not available.

**Partition coefficient: n-octanol/water** : 0.65

**Auto-ignition temperature** : Not available.

**Decomposition temperature** : Not available.



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## Section 9. Physical and chemical properties

**SADT** : Not available.

**Viscosity** : Not applicable.

## Section 10. Stability and reactivity

**Reactivity** : No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability** : The product is stable.

**Possibility of hazardous reactions** : Hazardous reactions or instability may occur under certain conditions of storage or use. Conditions may include the following:
contact with combustible materials
Reactions may include the following:
risk of causing fire

**Conditions to avoid** : No specific data.

**Incompatibility with various substances** : Extremely reactive or incompatible with the following materials: oxidizing materials, reducing materials and combustible materials.

**Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Not available.

#### Irritation/Corrosion

Not available.

#### Sensitization

Not available.

#### Mutagenicity

Not available.

#### Carcinogenicity

Not available.

#### Reproductive toxicity

Not available.

#### Teratogenicity

Not available.

#### Specific target organ toxicity (single exposure)

Not available.

#### Specific target organ toxicity (repeated exposure)



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# Section 11. Toxicological information

Not available.

### Aspiration hazard

Not available.

**Information on the likely routes of exposure** : Not available.

### Potential acute health effects

**Eye contact** : May cause eye irritation. Contact with rapidly expanding gas may cause burns or frostbite.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : May cause skin irritation. Contact with rapidly expanding gas may cause burns or frostbite.

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

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : No specific data.

**Inhalation** : No specific data.

**Skin contact** : No specific data.

**Ingestion** : No specific data.

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

#### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Potential chronic health effects

Not available.

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

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

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : No known significant effects or critical hazards.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.



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# Section 12. Ecological information

## Toxicity

Not available.

## Persistence and degradability

Not available.

## Bioaccumulative potential

| Product/ingredient name | $LogP_{ow}$ | BCF | Potential |
|---|---|---|---|
| oxygen | 0.65 | - | low |

## Mobility in soil

**Soil/water partition coefficient ($K_{OC}$)** : Not available.

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

# Section 13. Disposal considerations

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

# Section 14. Transport information

| | DOT | TDG | Mexico | IMDG | IATA |
|---|---|---|---|---|---|
| **UN number** | UN1072 | UN1072 | UN1072 | UN1072 | UN1072 |
| **UN proper shipping name** | OXYGEN, COMPRESSED | OXYGEN, COMPRESSED | OXYGEN, COMPRESSED | OXYGEN, COMPRESSED | OXYGEN, COMPRESSED |
| **Transport hazard class(es)** | 2.2 (5.1) | 2.2 (5.1) | 2.2 (5.1) | 2.2 (5.1) | 2.2 (5.1) |
| **Packing group** | - | - | - | - | - |
| **Environment** | No. | No. | No. | No. | No. |
| **Additional information** | **Limited quantity** Yes.<br><br>**Packaging instruction**<br>**Passenger aircraft** Quantity limitation: 75 kg<br><br>**Cargo aircraft** | **Explosive Limit and Limited Quantity Index** 0.125<br><br>**ERAP Index** 3000<br><br>**Passenger Carrying Ship Index** | - | - | **Passenger and Cargo Aircraft**Quantity limitation: 75 kg<br>**Cargo Aircraft Only** Quantity limitation: 150 kg |



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## Section 14. Transport information

| | | | | | |
|---|---|---|---|---|---|
| | Quantity limitation: 150 kg<br><br>**Special provisions**<br>A52 | 50<br><br>**Passenger Carrying Road or Rail Index**<br>75<br><br>**Special provisions**<br>42 | | | |

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

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

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

## Section 15. Regulatory information

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

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

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

**SARA 302/304**

**Composition/information on ingredients**

No products were found.

**SARA 304 RQ** : Not applicable.

**SARA 311/312**

**Classification** : Sudden release of pressure

**Composition/information on ingredients**

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

**State regulations**

**Massachusetts** : This material is listed.



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## Section 15. Regulatory information

**New York** : This material is not listed.

**New Jersey** : This material is listed.

**Pennsylvania** : This material is listed.

**Canada inventory** : This material is listed or exempted.

**International regulations**

**International lists** : **Australia inventory (AICS)**: This material is listed or exempted.
**China inventory (IECSC)**: This material is listed or exempted.
**Japan inventory**: Not determined.
**Korea inventory**: This material is listed or exempted.
**Malaysia Inventory (EHS Register)**: Not determined.
**New Zealand Inventory of Chemicals (NZIoC)**: This material is listed or exempted.
**Philippines inventory (PICCS)**: This material is listed or exempted.
**Taiwan inventory (CSNN)**: Not determined.

**Chemical Weapons Convention List Schedule I Chemicals** : Not listed

**Chemical Weapons Convention List Schedule II Chemicals** : Not listed

**Chemical Weapons Convention List Schedule III Chemicals** : Not listed

**Canada**

**WHMIS (Canada)** : Class A: Compressed gas.
Class C: Oxidizing material.

**CEPA Toxic substances**: This material is not listed.
**Canadian ARET**: This material is not listed.
**Canadian NPRI**: This material is not listed.
**Alberta Designated Substances**: This material is not listed.
**Ontario Designated Substances**: This material is not listed.
**Quebec Designated Substances**: This material is not listed.

## Section 16. Other information

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

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

| | |
|---|---|
| Health | 0 |
| Flammability | 0 |
| Physical hazards | 3 |

**Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.**

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

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



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# Section 16. Other information

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

## History

**Date of printing** : 10/16/2014.

**Date of issue/Date of revision** : 10/16/2014.

**Date of previous issue** : 9/29/2014.

**Version** : 0.02

**Key to abbreviations** : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United NationsACGIH – American Conference of Governmental Industrial Hygienists
AIHA – American Industrial Hygiene Association
CAS – Chemical Abstract Services
CEPA – Canadian Environmental Protection Act
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act (EPA)
CFR – United States Code of Federal Regulations
CPR – Controlled Products Regulations
DSL – Domestic Substances List
GWP – Global Warming Potential
IARC – International Agency for Research on Cancer
ICAO – International Civil Aviation Organisation
Inh – Inhalation
LC – Lethal concentration
LD – Lethal dosage
NDSL – Non-Domestic Substances List
NIOSH – National Institute for Occupational Safety and Health
TDG – Canadian Transportation of Dangerous Goods Act and Regulations
TLV – Threshold Limit Value
TSCA – Toxic Substances Control Act
WEEL – Workplace Environmental Exposure Level
WHMIS – Canadian Workplace Hazardous Material Information System

**References** : Not available.

**Indicates information that has changed from previously issued version.**



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# Section 16. Other information

## 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.**



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# BLACK SWAN MFG. CO.

## GHS SAFETY DATA SHEET

## SECTION 1 - IDENTIFICATION

| Manufacturer: | For any Transportation or Medical Chemical Emergencies call: |
|---|---|
| Black Swan Mfg. Co.<br>4540 W. Thomas St.<br>Chicago, IL 60651-3318<br>Tel.: 800-252-5796<br>Fax: 773-227-3705<br>Web Site : www.blackswanmfg.com<br>E-mail : info@blackswanmfg.com | **INFOTRAC**<br><br>(800) 535-5053 **OR** (352) 323-3500<br><br>24 hours per day - 7 days a week |
| **Product Name: Adhesive-Lube** | **Recommended Use:** Formulated to improve installation & sealing of compression type gaskets for cast iron soil pipe joints. |

## SECTION 2 – HAZARD(S) IDENTIFICATION

### Labels

Health Hazard Flammable

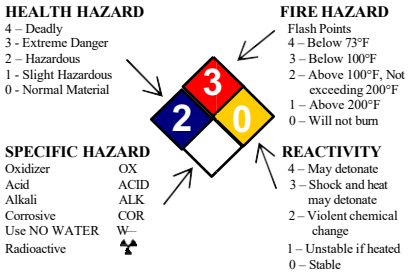
### Signal Word

Danger

### HMIS

| | |
|---|---|
| HEALTH | 2 |
| FLAMMABILITY | 3 |
| REACTIVITY | 0 |

### NFPA




### GHS Classification

**Health**

Acute Toxicity: Not Established
Skin Irritation: Not Established
Eye Irritation: Not Established
Skin Sensitization: NO

**Environmental**

Acute Aquatic Toxicity: Not Established
Chronic Aquatic Toxicity: Not Established

**Physical**

Flammability: Cat. 2

### Hazardous Statements

H225: Highly flammable liquid and vapor
H304: May be fatal if swallowed and enters airways
H312: Harmful in contact with skin
H319: Causes serious eye irritation
H332: Harmful if inhaled
H335: May cause respiratory irritation
H336: May cause drowsiness or dizziness

### Precautionary Statements

P102: Keep out of reach of children
P103: Read label before use
P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
P233/P235: Keep container tightly closed and cooled
P243: Take precautionary measures against static discharge
P261: Avoid breathing dust/fume/gas/m st/vapors/spray
P262: Do not get in eyes, on skin, or on clothing
P264: Wash thoroughly after handling
P270: Do not eat, drink or smoke when using this product
P271: Use only outdoors or in a well-ventilated area
P280/P284: Wear protective gloves/protective clothing/eye protection/face protection. Wear a NIOSH approved respirator for organic solvents.

## SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

| Chemicals | CAS# | EINECS# | REACH Pre-registration Number | Approx % |
|---|---|---|---|---|
| TOLUENE | 108-88-3 | 203-625-9 | N/A | 50% |
| TRADE SECRET | N/A | N/A | N/A | N/A |
| STODDARD SOLVENT | 8052-413 | 232-489-3 | N/A | 25% |

*Unlisted ingredients are not classified as hazardous according to OSHA 1910.1200.

## SECTION 4 – FIRST-AID MEASURES

**Inhalation**: Move into fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen and call physician.
**Skin**: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water.
**Eyes**: Flush with water for 15 minutes. If irritation persists, get medical attention.
**Ingestion**: Give 1 or 2 glasses of water. DO NOT INDUCE VOMITING. Contact physician immediately.

## SECTION 5 – FIRE-FIGHTING MEASURES

**Fire Hazard**: Vapors may travel a considerable distance to a source of ignition and flash back.
**Combustion Products**: None.
**Extinguishing Media**: Carbon Dioxide, Dry Chemical, Foam.
**Unsuitable Extinguishing Media**: None Known.
**Protective Equipment**: Self-contained breathing apparatus {(SCBA), MSHA/NIOSH}. Full protective gear.
**Special Fire Fighting Procedures:** Stop spill/release and move undamaged containers from the fire area, if it can be done without risk. Water spray may be useful in minimizing or dispersing vapors and cooling equipment exposed to heat and flame. Avoid spreading burning liquid with water used for cooling purposes.

## SECTION 6 – ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Prevent contact with skin or eyes. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high.
**Protective Equipment**: Wear protective gloves and eye goggles. Wear synthetic apron or standard long sleeved work apparel and a vapor respirator.
**Emergency Procedures**: Evacuate area and keep unnecessary and unprotected personnel from entering the spill area.
**Environmental Precautions**: Avoid runoff into storm sewers, ditches and waterways.
**Methods for Cleaning Up**: This product contains a combustible material. Stay upwind and away from spill. Keep all sources of ignition from spill. If spill is indoors, ventilate area of spill. Foam, especially high expansion foam may be used to suppress vapors. Use sand or other inert material to damp and contain spill. Do not flush area with water. For small spills, do not flush with water, use absorbent pads.

## SECTION 7 – HANDLING AND STORAGE

| Handling | Storage |
|---|---|
| Use good personal hygiene practices. Avoid inhalation of vapors and personal contact with the product. Repeated and prolonged overexposure to solvents may cause brain and nervous system damage. Concentrating and inhaling the contents may be harmful or fatal. | Store in a cool, dry, well-ventilated area away from incompatible materials. Keep container closed when not in use. Keep away from heat, sparks, open flame and other sources of ignition. Ground during transfer. **Incompatible Materials**: Strong oxidizing agents and strong acids or bases. |

## SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

| | Exposure Limits | | |
|---|---|---|---|
| **Hazardous Chemicals** | **ACGIH-TLV** | **ACGIH-STEL** | **OSHA-PEL** |
| TOLUENE | 100 ppm | N/A | 200 ppm |
| TRADE SECRET | N/A | N/A | N/A |
| STODDARD SOLVENT | N/A | N/A | 500 ppm |

**Engineering Controls:** A source of running water to flush or wash the eyes and skin in case of contact. Use local exhaust as needed.
**Ventilation**: Mechanical ventilation is adequate.
**Personal Protective Equipment – Respiratory:** If use conditions generate vapors or mists, wear a NIOSH-approved respirator appropriate for those emission levels. Appropriate respirators may be a full face piece or a half mask air purifying cartridge respirator equipped for organic vapors/mists, a self-contained breathing apparatus in the pressure demand mode, or a supplied-air respirator.
**Personal Protective Equipment – Skin:** Chemical resistant gloves. Long-sleeve shirt, coveralls, and safety shoes.
**Personal Protective Equipment – Eyes:** Chemical goggles.

## SECTION 9 – PHYSICAL & CHEMICAL PROPERTIES

| | | | | | |
|---|---|---|---|---|---|
| **Appearance**: | Black Viscous Liquid | **Flash Point**: | 40°F (T.C.C.) | **Vapor Pressure**: | 23 |
| **Odor**: | Characteristic solvent odor | **Specific Gravity**: | 0.926 | **Flammability**: | Not Established |
| **pH**: | Not Established | **Solubility (H2O):** | Insoluble | **Flammability Limits**: | LEL – 0.9% |
| **Melting Point**: | Not Established | **Evaporation Rate**: | <1 | | UEL – 7.0% |
| **Freezing Point**: | Not Established | **Vapor Density**: | 3.3 | | |
| **Boiling Point**: | 215°F | **VOC**: | 658 g/l | | |

## SECTION 10 – STABILITY AND REACTIVITY

**Stability:** Stable.
**Hazardous polymerization:** Will not occur.
**Conditions to avoid:** Heat, sparks, open flames and all possible sources of ignition.
**Incompatible materials:** Strong oxidizing agents and strong acids or bases.
**Hazardous decomposition products:** Carbon Monoxide and Carbon Dioxide.

## SECTION 11 – TOXICOLOGICAL INFORMATION

| Hazardous Chemicals | Toxicity $LD_{50}$ | $LC_{50}$ |
|---|---|---|
| TOLUENE | N/A | N/A |
| TRADE SECRET | N/A | N/A |
| STODDARD SOLVENT | N/A | N/A |

**Likely Routes of Exposure:** Inhalation, Skin Contact, Eye Contact and Ingestion.
**Symptoms and Effect - Inhalation:** It is a respiratory tract irritant and anesthetic. Causes central nervous system depression (e.g. headache, drowsiness, dizziness, loss of coordination & fatigue). **Skin Contact:** May cause mild skin irritation. Prolonged or repeated contact may cause redness, burning, drying and cracking of the skin. **Eye Contact:** May cause mild eye irritation. Direct contact with the liquid or exposure to vapors or mists may cause stinging, tearing or redness. **Ingestion:** Ingestion of excessive quantities may cause irritation of the digestive tract and signs of nervous system depression. **ASPIRATION HAZARD –** This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.
**Long-Term Effect:** Chronic effects of overexposure – Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage (sometimes referred to as solvent or painters' syndrome). Intentional misuse by deliberately concentrating and inhaling this product may be harmful or fatal. This product contains a chemical known to the State of California to cause cancer.
**Pre-Existing Conditions:** Skin contact may aggravate an existing dermatitis.

## SECTION 12 – ECOLOGICAL INFORMATION

**Ecotoxicity:** None.
**Persistance & Degradability:** None.
**Bioaccumulative Potential:** None.
**Mobility in soil:** In normal use, emission of Volatile Organic Compounds (VOC's) to the air takes place, typically at a rate of $\leq$ 658 g/l.

## SECTION 13 – DISPOSAL CONSIDERATION

Dispose of product or container in accordance with federal, state or local regulations.

## SECTION 14 – TRANSPORTATION INFORMATION

Shipping Information

| | |
|---|---|
| Shipping Name: | Adhesives, Containing a Flammable Liquid |
| Hazardous Class: | 3 |
| I.D. Number: | UN1133 |
| Packing Group: | II |
| Label Required: | Flammable Liquid |
| Marine Pollutant: | No |

**Exception to the rule:** If the package that contains the hazardous material is in a small consumer size (Less than 1L), then the rules that apply to shipping hazardous materials do not apply. This is called an "Exception".
**This is classified as Consumer Commodity ORM-D.**

## SECTION 15 – REGULATORY INFORMATION

**Precautionary Label Information:** Health Hazard, Flammable.
**Risk Phrases: R10**-Flammable. **R36/37**-Irritant to eyes and respiratory system. **R67-**Vapors may cause drowsiness and dizziness.
**Safety Phrases: S2-**Keep out of reach of children. **S9-**Keep container in a well-ventilated place. **S16-**Keep away from sources of ignition-No smoking. **S25-**Avoid contact with eyes. **S26-**In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. **S33-** Take precautionary measures against static discharges.

## SECTION 16 – OTHER INFORMATION

Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. Black Swan Mfg. Co. urges the customers receiving this Material Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents and contractors of the information on the sheets. **DATE: 01/01/2015**

# BLACK SWAN MFG. CO.

## GHS SAFETY DATA SHEET

## SECTION 1 - IDENTIFICATION

Manufacturer:

Black Swan Mfg. Co.
4540 W. Thomas St.
Chicago, IL 60651-3318
Tel.: 800-252-5796
Fax: 773-227-3705
Web Site : www.blackswanmfg.com
E-mail : info@blackswanmfg.com

For any Transportation or Medical Chemical Emergencies call:

**INFOTRAC**

(800) 535-5053 **OR** (352) 323-3500

24 hours per day - 7 days a week

**Product Name: No-Hub Sealant**

**Recommended Use:** A sealant specifically designed as a coating for cast iron pipe to improve leak-free sealing of no-hub couplings.

## SECTION 2 – HAZARD(S) IDENTIFICATION

### Labels

Health Hazard Flammable

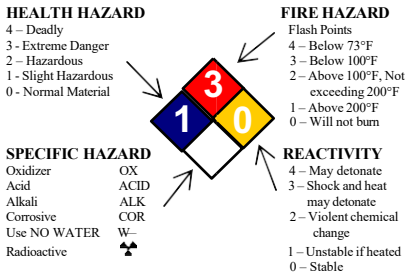
### Signal Word

Danger

### HMIS

| | |
|---|---|
| HEALTH | 1 |
| FLAMMABILITY | 3 |
| REACTIVITY | 0 |

### NFPA




### GHS Classification

**Health**

Acute Toxicity: Not Established
Skin Irritation: Not Established
Eye Irritation: Not Established
Skin Sensitization: NO

**Environmental**

Acute Aquatic Toxicity: Not Established
Chronic Aquatic Toxicity: Not Established

**Physical**

Flammability: Cat. 2

### Hazardous Statements

H225: Highly flammable liquid and vapor
H304: May be fatal if swallowed and enters airways
H312: Harmful in contact with skin
H319: Causes serious eye irritation
H332: Harmful if inhaled
H335: May cause respiratory irritation
H336: May cause drowsiness or dizziness

### Precautionary Statements

P102: Keep out of reach of children
P103: Read label before use
P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
P233/P235: Keep container tightly closed and cooled
P243: Take precautionary measures against static discharge
P261: Avoid breathing dust/fume/gas/m st/vapors/spray
P262: Do not get in eyes, on skin, or on clothing
P264: Wash thoroughly after handling
P270: Do not eat, drink or smoke when using this product
P271: Use only outdoors or in a well-ventilated area
P280/P284: Wear protective gloves/protective clothing/eye protection/face protection. Wear a NIOSH approved respirator for organic solvents.

## SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

| Chemicals | CAS# | EINECS# | REACH Pre-registration Number | Approx % |
|---|---|---|---|---|
| ETHYL ALCOHOL | 64-17-5 | 200-578-6 | N/A | 25-30% |
| METHYL ALCOHOL | 67-56-1 | 200-659-6 | N/A | 1-2% |
| ETHYL ACETATE | 141-78-6 | 205-500-4 | N/A | <1% |
| ACETONE | 67-64-1 | 200-662-2 | N/A | 35-45% |
| POLYVINYL BUTYRAL | 7723-18-5 | N/A | N/A | 10-20% |

*Unlisted ingredients are not classified as hazardous according to OSHA 1910.1200.

## SECTION 4 – FIRST-AID MEASURES

**Inhalation**: Move into fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen and call physician.
**Skin**: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water.
**Eyes**: Flush with water for 15 minutes. If irritation persists, get medical attention.
**Ingestion**: Give 1 or 2 glasses of water. DO NOT INDUCE VOMITING. Contact physician immediately.

## SECTION 5 – FIRE-FIGHTING MEASURES

**Fire Hazard**: Vapors may travel considerable distance to sources of ignition and flash back.
**Combustion Products**: None.
**Extinguishing Media**: Foam, Carbon Dioxide, Dry Chemical.
**Unsuitable Extinguishing Media**: None Known.
**Protective Equipment**: Self-contained breathing apparatus {(SCBA), MSHA/NIOSH}. Full protective gear.
**Special Fire Fighting Procedures:** Evacuate enclosed areas, stay upwind. Closed or confined quarters require self-contained breathing apparatus, positive pressure hose masks or airline masks. Use agents appropriate for surrounding fires.

## SECTION 6 – ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** None.
**Protective Equipment**: Wear suitable respiratory protective equipment.
**Emergency Procedures**: None.
**Environmental Precautions**: Avoid runoff into storm sewers, ditches and waterways.
**Methods for Cleaning Up**: Absorb with suitable inert material. Remove all sources of ignition.

## SECTION 7 – HANDLING AND STORAGE

**Handling**

Use good personal hygiene practice. Avoid inhalation of vapors and personal contact with the product. Repeated and prolonged overexposure to solvents may cause brain and nervous system damage. Concentrating and inhaling the contents may be harmful or fatal.

**Storage**

Keep and store in a cool, dry place from sources of ignition. Ground during transfer. Keep container tightly closed when not in use.
**Incompatible Materials**: Strong oxidizing agents, strong acids.

## SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

| | Exposure Limits | | |
|---|---|---|---|
| **Hazardous Chemicals** | **ACGIH-TLV** | **ACGIH-STEL** | **OSHA-PEL** |
| ETHYL ALCOHOL | 1000 ppm | N/A | 1000 ppm |
| METHYL ALCOHOL | 200 ppm | N/A | 200 ppm |
| ETHYL ACETATE | 400 ppm | N/A | 400 ppm |
| ACETONE | 500 ppm | 750 ppm | 1000 ppm |

**Engineering Controls:** A source of running water to flush or wash the eyes and skin in case of contact.
**Ventilation**: Mechanical.
**Personal Protective Equipment – Respiratory:** If use conditions generate vapors or mists, wear a NIOSH-approved respirator appropriate for those emission levels. Appropriate respirators may be a full face piece or a half mask air-purifying cartridge respirator equipped for organic vapors/mists, a self-contained breathing apparatus in the pressure demand mode, or a supplied-air respirator.
**Personal Protective Equipment – Skin:** Impermeable gloves. Chemical resistant coveralls.
**Personal Protective Equipment – Eyes:** Safety glasses with side shields or chemical goggles.

## SECTION 9 – PHYSICAL & CHEMICAL PROPERTIES

| | | | | | |
|---|---|---|---|---|---|
| **Appearance**: | Amber Viscous Liquid | **Flash Point**: | 65°F (T.C.C.) | **Vapor Pressure**: | Not Established |
| **Odor**: | Characteristic Solvent | **Specific Gravity**: | Approx. 0.70 | **Flammability**: | Not Established |
| **pH**: | Not Established | **Solubility (H2O):** | Insoluble | **Flammability Limits**: | LEL – 0.9% |
| **Melting Point**: | Not Established | **Evaporation Rate**: | > 1.0 | | UEL – 7.0% |
| **Freezing Point**: | Not Established | **Vapor Density**: | > 1.0 | | |
| **Boiling Point**: | 170°F | **VOC**: | 250 g/l | | |

## SECTION 10 – STABILITY AND REACTIVITY

**Stability:** Stable.
**Hazardous polymerization:** Will not occur.
**Conditions to avoid:** Sparks, open flames, hot surfaces and strong oxidizing agents.
**Incompatible materials:** Strong oxidizing agents, strong acids.
**Hazardous decomposition products:** Carbon Monoxide, Carbon Dioxide

## SECTION 11 – TOXICOLOGICAL INFORMATION

| | Toxicity | |
|---|---|---|
| **Hazardous Chemicals** | **$LD_{50}$** | **$LC_{50}$** |
| ETHYL ALCOHOL | N/A | N/A |
| METHYL ALCOHOL | N/A | N/A |
| ETHYL ACETATE | N/A | N/A |
| ACETONE | N/A | N/A |
| POLYVINYL BUTYRAL | N/A | N/A |

**Likely Routes of Exposure:** Inhalation, Skin Contact, Eye Contact and Ingestion.
**Symptoms and Effect - Inhalation:** It is a respiratory tract irritant and anesthetic and causes central nervous system depression (e.g. headache, drowsiness, dizziness, loss of coordination & fatigue). **Skin Contact:** May cause mild skin irritation. Prolonged or repeated contact may cause redness, burning, and drying and cracking of the skin. **Eye Contact:** May cause mild eye irritation. Direct contact with the liquid or exposure to vapors or mists may cause stinging, tearing and redness. **Ingestion:** Ingestion of excessive quantities may cause irritation of the digestive tract and signs of nervous system depression.
**Long-Term Effect:** None known.
**Pre-Existing Conditions:** Any pre-existing heart or skin condition or an impaired lung function.

## SECTION 12 – ECOLOGICAL INFORMATION

**Ecotoxicity:** None known.
**Persistance & Degradability:** None known.
**Bioaccumulative Potential:** None known.
**Mobility in soil:** In normal use, emission of Volatile Organic Compounds (VOC's) to the air takes place, typically at a rate of $\leq$250 g/l.

## SECTION 13 – DISPOSAL CONSIDERATION

Dispose of product or container in accordance with federal, state or local regulations.

## SECTION 14 – TRANSPORTATION INFORMATION

**Shipping Information**

**Shipping Name:** Adhesives, Containing a Flammable Liquid
**Hazardous Class:** 3
**I.D. Number:** UN1133
**Packing Group:** II
**Label Required:** Flammable Liquid
**Marine Pollutant:** No

**Exception to the rule:** If the package that contains the hazardous material is in a small consumer size (Less than 1L), then the rules that apply to shipping hazardous materials do not apply. This is called an "Exception".
**This is classified as Consumer Commodity ORM-D.**

## SECTION 15 – REGULATORY INFORMATION

**Precautionary Label Information:** Flammable, and Health Hazard.
**Risk Phrases: R10**-Flammable. **R36/37**-Irritant to eyes and respiratory system.
**Safety Phrases: S2-**Keep out of reach of children. **S9-**Keep container in a well-ventilated place. **S16-**Keep away from sources of ignition-No smoking. **S25-**Avoid contact with eyes. **S26-**In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. **S33-** Take precautionary measures against static discharges.

## SECTION 16 – OTHER INFORMATION

Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. Black Swan Mfg. Co. urges the customers receiving this Material Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents and contractors of the information on the sheets. **DATE: 01/01/2015**

CHARLOTTE PIPE AND FOUNDRY COMPANY

# SAFETY DATA SHEET

## 1. PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|---|
| **COMMON NAME:** | PVC Pipe and Fittings |
| **CHEMICAL NAME:** | Not Applicable. Formulation, see section 3. |
| **FORMULA:** | Mixture |
| **PRODUCT CAS NO.:** | Mixture, see section 3. |
| **Recommended Use:** | Drain Waste Vent and Pressure Pipe and Fittings |
| **SUPPLIER:** | Charlotte Pipe and Foundry Company (Plastics Division) |
| **ADDRESS:** | 4210 Old Charlotte Highway |
| **CITY, STATE, ZIP:** | Monroe, NC 28110 |
| **PHONE:** | +1-704-372-3650 **EMERGENCY PHONE:** +1-704-372-3650 |

## 2. HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW**

Toxic and irritating gases and fumes may be given off during burning or thermal decomposition. Avoid generating dust. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

| | |
|---|---|
| GHS Status | This material is hazardous in accordance with the hazard communication standard, 29 CFR 1910.1200 |
| Classification of the substance or mixture | Skin irritation – Category 2<br>Eye irritation – Category 2 A<br>Specific target organ toxicity – single exposure – Category 3 |
| GHS label pictogram | Warning |
| Signal word | Warning |
| Hazard statements | Causes serious eye irritation. |

CHARLOTTE PIPE AND FOUNDRY COMPANY

# SAFETY DATA SHEET

| | |
|---|---|
| | Causes skin irritation.<br>May cause respiratory irritation |
| Precautionary statements | |
| Prevention | Avoid breathing dust/fume/gas/mist. |
| Response | If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| Storage | Keep away from intense heat, flames. |
| Disposal | Dispose of in accordance with local regulations. |
| Hazards not otherwise classified | None known. |
| Relevant routes of exposure | Skin, eyes, inhalation. |
| Inhalation | Melted product is flammable and produces intense heat and dense smoke during burning. Irritating gases and fumes may be given off during burning or thermal decomposition. |
| Skin contact | Gases and fumes evolved during thermal processing or decomposition can cause skin irritation. |
| Eye contact | Dust can cause eye irritation. Gases and fumes evolved during thermal processing or decomposition can cause eye irritation. |
| Ingestion | No data available. |

## 3. HAZARDOUS INGREDIENTS: COMPOSITION/INFORMATION

| INGREDIENT | % WEIGHT | PEL-OSHA | TLV-ACGIH | NIOSH REL |
|---|---|---|---|---|
| Polyvinyl chloride<br>CAS 9002-86-2 | >80% | None established<br>Particulates not otherwise classified: 15 mg/m3 | 1 mg/m3 (respirable fraction)<br>Particulates not otherwise classified:<br>10 mg/m3 (inhalable fraction) | None established |
| Titanium dioxide<br>CAS 13463-67-7 | 0-5% | 15 mg/m3, total dust | 10 mg/m3 TWA | None established |

## 4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 15 minutes. Consult a physician.
SKIN CONTACT: Rinse with water. Remove contaminated clothing and shoes. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes before reuse.

INHALATION: If vapors from excessive heating, burning or decomposition products are inhaled: remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular, or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing, such as collar, tie, belt, or waistband. In case of inhalation of decomposition

CHARLOTTE PIPE AND FOUNDRY COMPANY

# SAFETY DATA SHEET

products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance.

INGESTION: Wash out mouth with water. Remove dentures, if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Loosen tight clothing, such as collar, tie, belt, or waistband. Consult a physician.

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 surveillance for 48 hours

Specific treatments: None known

## 5. FIRE FIGHTING MEASURES

| **FLAMMABLE PROPERTIES** | | |
|---|---|---|
| FLASH POINT: No data. | Decomposition products may be combustible. | |
| **FLAMMABLE LIMITS:** | LEL: No Data | UEL: No data |

EXTINGUISHING MEDIA: Water, foam, dry chemical. Do not use $CO_2$ on Class A fires, as a lack of cooling capacity may result in re-ignition.

FIRE AND EXPLOSION HAZARDS: Solid does not readily release flammable vapors. Thermoplastic polymers can burn. Smoke, Carbon Monoxide, Carbon Dioxide, Aldehydes, Hydrogen Chloride, Tin. Irritating and/or toxic substances will be emitted during burning, combustion, or decomposition. Run-off water from firefighting may have corrosive effects.

PROTECTIVE MEASURES FOR FIRE FIGHTERS: Firefighters must wear a NIOSH-approved, full-facepiece self-contained breathing apparatus (SCBA) operated in positive pressure mode and full turnout or bunker gear with additional chemical protective clothing as necessary to protect against thermal decomposition products.

SPECIAL PROTECTIVE ACTIONS FOR FIRE FIGHTERS: If there is a fire, promptly isolate the scene by removing all persons from the vicinity of the incident. No action shall be taken involving any personal risk or without suitable training

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment, and emergency measures**

| | |
|---|---|
| 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. 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 decomposition products or fumes from burning or excessive heating, take note of information in Section 8 on suitable and unsuitable materials. See also 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). |

CHARLOTTE PIPE AND FOUNDRY COMPANY

# SAFETY DATA SHEET

| **Methods and materials for containment and clean-up** | |
|---|---|
| Small spill | Avoid dust generation. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. See Section 1 for emergency contact information. |
| Large spill | Move containers from spill area. Approach release from upwind. Prevent entry into sewers, waterways, basements, and confined areas. Avoid dust generation. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. See Section 1 for emergency contact information. |

## 7. HANDLING AND STORAGE

| | |
|---|---|
| Conditions for safe storage, including any incompatibilities | Store in a dry place away from direct sunlight, heat, and incompatible materials. Avoid intense heat and flames. |
| **Precautions for safe handling** | |
| Protective measures | Put on appropriate personal protective equipment (see Section 8). Do not handle until all safety precautions have been read and understood. Do not get particles, vapors or fumes in eyes, on skin, or on clothing. Do not ingest. If during normal use, the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. |
| Advice on general occupational hygiene | Employees must wash hands and face before eating, drinking, or smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also section 8 for additional information on hygiene measures. |

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation, or other engineering controls to keep worker exposure to airborne contaminants below recommended and statutory limits.

RESPIRATORY PROTECTION: Cutting or sanding this product can generate dust. Used a properly fitted particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product, and the safe working limits of the respirator. A NIOSH-approved N95 single use or P95 multiple use respirator will protect the employee from at least 95% of airborne particles. Follow the respirator manufacture's instructions for proper use. If adhesives or other substances are used with this product, refer to the product manufacturer's safety data sheet for applicable respiratory protective measures.

SKIN PROTECTION: Chemical-resistant, impervious gloves complying with an approved standard should be worn when handling this or any chemical product, 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 containing several substances, the protection time of the gloves cannot be accurately estimated. If adhesives or other substances are used with this product, refer to the product manufacturer's safety data sheet for applicable skin protective measures.

BODY PROTECTION: Personal protective equipment for the body should be selected on the task being performed and the risks involved, and should be approved by a specialist before handling this product. If adhesives or other substances are used with this product, refer to the product manufacturer's safety data sheet for applicable skin protective measures.

EYE/FACE PROTECTION: Safety eyewear complying with an approved standard must be used when a risk assessment indicates this is necessary to avoid exposure to dust. Particulates and dust can be formed when cutting, grinding or sanding this product. If contact with dust or particulates is possible, the following should be worn unless the assessment indicates a

CHARLOTTE PIPE AND FOUNDRY COMPANY

# SAFETY DATA SHEET

higher degree of protection: safety glasses with side shields. If adhesives or other substances are used with this product, refer to the product manufacturer's safety data sheet for applicable eye and face protective measures.

| 9. PHYSICAL AND CHEMICAL PROPERTIES | |
|---|---|
| **APPEARANCE:** | Solid. White/grey |
| **ODOR:** | Not applicable. |
| **ODOR THRESHOLD:** | Not available |
| **BOILING POINT:** | Not available |
| **FLASH POINT:** | Not applicable |
| **FLAMMABILITY:** | Melted product is flammable. |
| **AUTOIGNITION TEMPERATURE:** | Not applicable |
| **DECOMPOSITION TEMPERATURE:** | Not available |
| **LOWER/UPPER EXPLOSION LIMITS:** | Not available |
| **VAPOR PRESSURE:** | Not available |
| **LIQUID DENSITY:** | Not available |
| **SPECIFIC GRAVITY:** | Approximately 1.4 |
| **MELTING POINT:** | Not available |
| **pH:** | Not available |
| **SOLUBILITY:** | Insoluble |
| **% VOLATILE:** | Not available |
| **VISCOSITY:** | Not available |

| 10. STABILITY AND REACTIVITY | |
|---|---|
| **Stability:** | Stable at normal temperatures and pressures. |
| **Reactivity:** | Stable at normal temperatures and pressures. |
| **Conditions to avoid:** | Heat, flames, sparks and other sources of ignition. |
| **Incompatible materials/conditions:** | Consult the Charlotte Pipe and Foundry chemical resistance guide. |
| **Hazardous decomposition products:** | Hydrogen chloride, carbon oxides, small amounts of benzene and aromatic and aliphatic hydrocarbons, phosgene. |
| **Hazardous polymerization:** | Not available. |

## 11. TOXICOLOGICAL INFORMATION

**ACUTE TOXICITY:**

No toxicological data is available for the finished product.

CHARLOTTE PIPE AND FOUNDRY COMPANY

# SAFETY DATA SHEET

**SENSITIZATION:** No data available.

**MUTAGENICITY:** No data available.

**DEVELEPMENTAL**: No data available.

**Fertility:** No data available.

**CARCINOGENICITY**: On the date of preparation of this SDS, this product does not contain ingredients classified by the International Agency for Research on Cancer, National Toxicology Program Report, or OSHA at 29 CFR 1910, Subpart Z, as a carcinogen.

**REPRODUCTIVE TOXICITY:** Not available

**TERATOGENICITY:** Not available

**SPECIFIC TARGET ORGANS – SINGLE EXPOSURE:** Not available

**SPECIFIC TARGET ORGANS – REPEATED EXPOSURE:** Not available

**ASPIRATION HAZARD:** Not available

**INFORMATION ON THE LIKELY ROUTES OF EXPOSURE:**

**Potential acute health effects**

| | |
|---|---|
| Eye contact | No known significant effects or critical hazards. Dust can cause eye irritation. |
| Inhalation | Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. |
| Skin contact | Skin irritant. |
| Ingestion | No known significant effects or critical hazards. |

**Symptoms related to the physical, chemical, and toxicological characteristics**

| | |
|---|---|
| Eye contact | No data available. |
| Inhalation | No data available |
| Skin contact | Adverse symptoms may include irritation. |
| Ingestion | No data available |

**Immediate, delayed and chronic effects from short term exposure**

Short term exposure

| | |
|---|---|
| Potential immediate effects | No data available. |
| Potential delayed effects | No data available |

Long term exposure

| | |
|---|---|
| Potential immediate effects | No data available. |
| Potential delayed effects | No data available |

Potential chronic effects

| | |
|---|---|
| General | No data available. |
| Carcinogenicity | Not listed by OSHA, IARC or NTP. See section 11. |

CHARLOTTE PIPE AND FOUNDRY COMPANY

# SAFETY DATA SHEET

## 12. ECOLOGICAL INFORMATION

Numerical measures of toxicity
No data available

Persistence and degradability
Does not biodegrade over time.

Bioaccumulative potential
No data available

Mobility in soil
No data available.

Other adverse effects: No known significant or critical hazards.

## 13. DISPOSAL CONSIDERATIONS

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste should not be disposed of to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste and packaging should be recycled when possible. Incineration or landfill should only be considered when recycling is not feasible. This material must be disposed of in a safe way.

## 14. TRANSPORT INFORMATION

| | |
|---|---|
| **PROPER SHIPPING NAME:** | Not Regulated |
| **HAZARD CLASS:** | Not Regulated |
| **IDENTIFICATION NUMBER:** | Not Regulated |
| **SHIPPING LABEL:** | Not Regulated |
| **PACKING GROUP:** | Not Regulated |

## 15. REGULATORY INFORMATION

| | |
|---|---|
| United States | TSCA 8(b):<br>All ingredients are listed on the U.S. Toxic Substances Control Act inventory.<br><br>Airborne unbound particles of titanium dioxide of respirable size are listed as being carcinogenic per California Proposition 65. |

## 16. OTHER INFORMATION

Date of Preparation: 11 December 2013

Key To Acronyms:

CAS: Chemical Abstracts Service

CHARLOTTE PIPE AND FOUNDRY COMPANY

# SAFETY DATA SHEET

| | |
|---|---|
| CFR: | Code of Federal Regulations |
| HEPA | High-Efficiency Particulate Air (filter) |
| IARC: | International Agency for Research on Cancer |
| LD50 | Lethal dose to 50% of exposed laboratory animals |
| LC50 | Lethal concentration to 50% of exposed laboratory animals |
| LEL: | Lower Explosive Limit |
| mg/l | Milligrams per liter |
| NIOSH: | National Institute for Occupational Safety and Health (US) |
| NTP: | National Toxicology Program |
| OSHA: | Occupational Safety and Health Administration (US) |
| PEL: | Permissible Exposure Limit |
| TSCA | Toxic Substances Control Act |
| TLV: | Threshold Limit Value – American Conference of Governmental Industrial Hygienists (ACGIH) |
| TWA: | Time Weighted Average |
| UEL: | Upper Explosive Limit |
| ug/ $m^3$ | Micrograms per cubic meter |

**DISCLAIMER**

NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY OR GUARANTY OF ANY OTHER KIND, EXPRESS OR IMPLIED, IS MADE REGARDING PERFORMANCE, SAFETY, SUITABILITY, STABILITY OR OTHERWISE FOR THE ABS MATERIALS AS REPRESENTED IN THIS MSDS SHEET. Charlotte Pipe and Foundry assumes no liability whatsoever for the use of or reliance upon this information. The information and data contained in this MSDS has been compiled from information believed to be accurate and is offered for your consideration, investigation and verification. Buyer assumes all risk of use, storage, handling and disposal of the product in compliance with applicable federal, state, and local laws and regulations.

**Material Name: PURPLE PRIMER/CLEANER**

## * * * Section 1 - Product and Company Identification * * *

**MSDS #1401E**

**Part Numbers:** 019150

### Manufacturer Information

William H. Harvey Company
4334 South 67th Street
Omaha, NE 68117

Phone: 402-331-1175

For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1- 703-527-3887.

## * * * Section 2 - Hazards Identification * * *

### GHS Classification:

Flammable Liquids - Category 2
Acute Toxicity Oral - Category 4
Acute Toxicity Dermal - Category 4
Acute Toxicity Inhalation - Category 4
Eye Damage/Irritation - Category 2A
Carcinogenicity - Category 2
Specific Target Organ Toxicity Single Exposure - Category 3

### GHS LABEL ELEMENTS

### Symbol(s)

### Signal Word

Danger

### Hazard Statements

Highly flammable liquid and vapor.
Harmful if swallowed.
Harmful in contact with skin.
Harmful if inhaled.
Causes serious eye irritation.
Contains a chemical classified by the US EPA as a suspected possible carcinogen.
May cause respiratory irritation.
May cause drowsiness or dizziness.

## Precautionary Statements

**Prevention**

Keep away from heat/sparks/open flames and hot surfaces. - No smoking.
Keep container tightly closed.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/eye protection/face protection.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing fume/gas/mist/vapors.
Use only outdoors or in a well-ventilated area.

**Response**

If on skin (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
If swallowed: Call a poison center or doctor/physician if you feel unwell. Rinse mouth. Do not induce vomiting.
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 in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
If exposed or concerned: Get medical advice/attention.
In case of fire: Use dry chemical, $CO_2$, or foam to extinguish fire.

**Storage**

Store in a well-ventilated place. Keep cool.
Store locked up.

**Disposal**

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

# * * * Section 3 - Composition / Information on Ingredients * * *

| CAS # | Component | Percent |
|---|---|---|
| 67-64-1 | Acetone | 60-90 |
| 78-93-3 | Methyl ethyl ketone | 10-20 |
| 108-94-1 | Cyclohexanone | 3-10 |
| 109-99-9 | Tetrahydrofuran | 0-10 |

# * * * Section 4 - First Aid Measures * * *

## First Aid: Eyes

If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.

## First Aid: Skin

Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with hand cleaner or baby oil.

### First Aid: Ingestion

DO NOT INDUCE VOMITING. Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

### First Aid: Inhalation

If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

## * * * Section 5 - Fire Fighting Measures * * *

### General Fire Hazards

See Section 9 for Flammability Properties.

Highly flammable liquid and vapor. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

### Hazardous Combustion Products

Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

### Extinguishing Media

Use dry chemical, CO2, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.

### Unsuitable Extinguishing Media

None.

### Fire Fighting Equipment/Instructions

Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

## * * * Section 6 - Accidental Release Measures * * *

### Recovery and Neutralization

Stop leak if it can be done without risk.

### Materials and Methods for Clean-Up

Remove all sources of ignition and ventilate area. Soak up spill with an inert absorbent such as sand, earth or other noncombusting material. Put absorbent material in covered, labeled metal containers.

### Emergency Measures

Isolate area. Keep unnecessary personnel away.

### Personal Precautions and Protective Equipment

Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high.

### Environmental Precautions

Prevent liquid from entering watercourses, sewers and natural waterways.

### Prevention of Secondary Hazards

None

## * * * Section 7 - Handling and Storage * * *

### Handling Procedures

Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use. "Empty" containers retain product residue and can be hazardous. Follow all SDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

### Storage Procedures

Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.

### Incompatibilities

Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.

## * * * Section 8 - Exposure Controls / Personal Protection * * *

### Component Exposure Limits

**Acetone (67-64-1)**

ACGIH: 500 ppm TWA
750 ppm STEL
OSHA: 1000 ppm TWA; 2400 mg/m3 TWA
NIOSH: 250 ppm TWA; 590 mg/m3 TWA

**Methyl ethyl ketone (78-93-3)**

ACGIH: 200 ppm TWA
300 ppm STEL
OSHA: 200 ppm TWA; 590 mg/m3 TWA
NIOSH: 200 ppm TWA; 590 mg/m3 TWA
300 ppm STEL; 885 mg/m3 STEL

**Cyclohexanone (108-94-1)**

ACGIH: 20 ppm TWA
50 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 50 ppm TWA; 200 mg/m3 TWA
NIOSH: 25 ppm TWA; 100 mg/m3 TWA
Potential for dermal absorption

**Tetrahydrofuran (109-99-9)**

ACGIH: 50 ppm TWA
100 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 200 ppm TWA; 590 mg/m3 TWA
NIOSH: 200 ppm TWA; 590 mg/m3 TWA
250 ppm STEL; 735 mg/m3 STEL

## Engineering Measures

Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.

## Personal Protective Equipment: Respiratory

For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

## Personal Protective Equipment: Hands

Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

## Personal Protective Equipment: Eyes

Safety glasses with side shields or safety goggles.

## Personal Protective Equipment: Skin and Body

No additional protective equipment needed.

# * * * Section 9 - Physical & Chemical Properties * * *

| | | | |
|---|---|---|---|
| **Appearance:** | Purple | **Odor:** | Ether-like |
| **Physical State:** | Liquid | **pH:** | NA |
| **Vapor Pressure:** | 145 mmHg @ 20°C | **Vapor Density:** | 2.5 |
| **Boiling Point:** | 151°F (66°C) | **Melting Point:** | NA |
| **Solubility (H2O):** | Negligible | **Specific Gravity:** | 0.81 +/- 0.02 @ 20°C |
| **Evaporation Rate:** | (BUAC = 1) = 5.5 - 8.0 | **VOC:** | 99.96% |
| **Octanol/H2O Coeff.:** | ND | **Flash Point:** | 14-23°F (-10 to -5°C) |
| **Flash Point Method:** | CCCFP | **Upper Flammability Limit (UFL):** | 11.8 |
| **Lower Flammability Limit (LFL):** | 1.8 | **Burning Rate:** | ND |
| **Auto Ignition:** | ND | | |

# * * * Section 10 - Chemical Stability & Reactivity Information * * *

## Chemical Stability

This is a stable material.

## Hazardous Reaction Potential

Will not occur.

## Conditions to Avoid

Avoid heat, sparks, flames and other sources of ignition.

## Incompatible Products

Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.

## Hazardous Decomposition Products

Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

# * * * Section 11 - Toxicological Information * * *

## Acute Toxicity

### Component Analysis - LD50/LC50

**Acetone (67-64-1)**
Oral LD50 Rat 5800 mg/kg

**Methyl ethyl ketone (78-93-3)**
Inhalation LC50 Mouse 32 g/m3 4 h; Oral LD50 Rat 2737 mg/kg; Dermal LD50 Rabbit 6480 mg/kg

**Cyclohexanone (108-94-1)**
Inhalation LC50 Rat 10.7 mg/L 4 h; Inhalation LC50 Rat 8000 ppm 4 h; Oral LD50 Rat 800 mg/kg; Dermal LD50 Rabbit 948 mg/kg

**Tetrahydrofuran (109-99-9)**
Inhalation LC50 Rat 53.9 mg/L 4 h; Inhalation LC50 Rat 180 mg/L 1 h; Oral LD50 Rat 1650 mg/kg

## Potential Health Effects: Skin Corrosion Property/Stimulativeness

May cause irritation with redness, itching and pain. Methyl ethyl ketone and cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.

## Potential Health Effects: Eye Critical Damage/ Stimulativeness

Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.

## Potential Health Effects: Ingestion

Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

## Potential Health Effects: Inhalation

Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

## Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

## Generative Cell Mutagenicity

Cyclohexanone has been positive in bacterial and mammalian assays. Acetone, methyl ethyl ketone and tetrahydrofuran are generally thought not to be mutagenic.

## Carcinogenicity

### A: General Product Information

In 2012 USEPA Integrated Risk Information System (IRIS) reviewed a two species inhalation lifetime study on THF conducted by NTP (1998). Male rats developed renal tumors and female mice developed liver tumors while neither the female rats nor the male mice showed similar results. Because the carcinogenic mechanisms could not be identified clearly in either species for either tumor, the EPA determined that the male rat and female mouse findings are relevant to the assessment of carcinogenic potential in humans. Therefore, the IRIS review concludes that these data in aggregate indicate that there is "suggestive evidence of carcinogenic potential" following exposure to THF by all routes of exposure.

### B: Component Carcinogenicity

**Acetone (67-64-1)**

ACGIH: A4 - Not Classifiable as a Human Carcinogen

**Cyclohexanone (108-94-1)**

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

**Tetrahydrofuran (109-99-9)**

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

## Reproductive Toxicity

Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.

## Specified Target Organ General Toxicity: Single Exposure

May cause respiratory irritation. Inhalation of high concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

## Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ toxicity repeat exposure effects.

## Aspiration Respiratory Organs Hazard

Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

# * * * Section 12 - Ecological Information * * *

## Ecotoxicity

### A: General Product Information

This product is not expected to be toxic to aquatic organisms.

### B: Component Analysis - Ecotoxicity - Aquatic Toxicity

**Acetone (67-64-1)**

| Test & Species | | Conditions |
|---|---|---|
| 96 Hr LC50 Oncorhynchus mykiss | 4.74 - 6.33 mL/L | |
| 96 Hr LC50 Pimephales promelas | 6210 - 8120 mg/L [static] | |
| 96 Hr LC50 Lepomis macrochirus | 8300 mg/L | |
| 48 Hr EC50 Daphnia magna | 10294 - 17704 mg/L [Static] | |
| 48 Hr EC50 Daphnia magna | 12600 - 12700 mg/L | |

**Methyl ethyl ketone (78-93-3)**

| Test & Species | | Conditions |
|---|---|---|
| 96 Hr LC50 Pimephales promelas | 3130-3320 mg/L [flow-through] | |
| 48 Hr EC50 Daphnia magna | >520 mg/L | |
| 48 Hr EC50 Daphnia magna | 5091 mg/L | |
| 48 Hr EC50 Daphnia magna | 4025 - 6440 mg/L [Static] | |

**Cyclohexanone (108-94-1)**

| Test & Species | | Conditions |
|---|---|---|
| 96 Hr LC50 Pimephales promelas | 481-578 mg/L [flow-through] | |
| 96 Hr LC50 Pimephales promelas | 8.9 mg/L | |
| 96 Hr EC50 Chlorella vulgaris | 20 mg/L | |
| 24 Hr EC50 Daphnia magna | 800 mg/L | |

**Tetrahydrofuran (109-99-9)**

| Test & Species | | Conditions |
|---|---|---|
| 96 Hr LC50 Pimephales promelas | 1970-2360 mg/L [flow-through] | |
| 96 Hr LC50 Pimephales promelas | 2700-3600 mg/L [static] | |
| 24 Hr EC50 Daphnia magna | 5930 mg/L | |

## Persistence/Degradability

No information available for the product.

## Bioaccumulation

No information available for the product.

## Mobility in Soil

No information available for the product.

# * * * Section 13 - Disposal Considerations * * *

## Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

## Disposal of Contaminated Containers or Packaging

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

# * * * Section 14 - Transportation Information * * *

## DOT Information

**For Greater than 1 liter (0.3 gal):**
**Shipping Name:** Flammable Liquid, n.o.s (Methyl Ethyl Ketone, Acetone)
**UN #:** 1993 **Hazard Class:** 3 **Packing Group:** II
**Required Label(s):** Flammable Liquid

**For Less than 1 liter (0.3 gal):**
**Shipping Name:** Consumer Commodity, ORM-D

## IMDG Information

**For Greater than 1 liter (0.3 gal):**
**Shipping Name:** Flammable Liquid, n.o.s (Methyl Ethyl Ketone, Acetone)
**UN #:** 1993 **Hazard Class:** 3 **Packing Group:** II
**Required Label(s):** Flammable Liquid

**For Less than 1 liter (0.3 gal):**
**Shipping Name:** Flammable Liquid, n.o.s (Limited Quantity)
**UN #:** 1993 **Hazard Class:** 3 **Packing Group:** II

**Required Label(s):** None (Limited Quantities are expected from labeling)

## * * * Section 15 - Regulatory Information * * *

## Regulatory Information

### US Federal Regulations

**Component Analysis**

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

**Acetone (67-64-1)**

CERCLA: 5000 lb final RQ; 2270 kg final RQ

**Methyl ethyl ketone (78-93-3)**

CERCLA: 5000 lb final RQ; 2270 kg final RQ

**Cyclohexanone (108-94-1)**

CERCLA: 5000 lb final RQ; 2270 kg final RQ

**Tetrahydrofuran (109-99-9)**

CERCLA: 1000 lb final RQ; 454 kg final RQ

### State Regulations

**Component Analysis - State**

The following components appear on one or more of the following state hazardous substances lists:

| Component | CAS | CA | MA | MN | NJ | PA | RI |
|---|---|---|---|---|---|---|---|
| Acetone | 67-64-1 | Yes | Yes | Yes | Yes | Yes | No |
| Methyl ethyl ketone | 78-93-3 | Yes | Yes | Yes | Yes | Yes | No |
| Cyclohexanone | 108-94-1 | Yes | Yes | Yes | Yes | Yes | No |
| Tetrahydrofuran | 109-99-9 | Yes | Yes | Yes | Yes | Yes | No |

**Component Analysis - WHMIS IDL**

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

| Component | CAS # | Minimum Concentration |
|---|---|---|
| Acetone | 67-64-1 | 1 % |
| Methyl ethyl ketone | 78-93-3 | 1 % |
| Cyclohexanone | 108-94-1 | 0.1 % |
| Tetrahydrofuran | 109-99-9 | 1 % |

### Additional Regulatory Information

**A: General Product Information**

This product contains trace amounts of chemicals known to the State of California to cause cancer. Under normal use conditions, exposure to these chemicals at levels above the State of California "No Significant Risk Level" (NSRL) are unlikely. The use of proper personal protective equipment (PPE) and ventilation guidelines noted in Section 8 will minimize exposure to these chemicals.

**B: Component Analysis - Inventory**

| Component | CAS # | TSCA | CAN | EEC |
|---|---|---|---|---|
| Acetone | 67-64-1 | Yes | DSL | EINECS |
| Methyl ethyl ketone | 78-93-3 | Yes | DSL | EINECS |
| Cyclohexanone | 108-94-1 | Yes | DSL | EINECS |
| Tetrahydrofuran | 109-99-9 | Yes | DSL | EINECS |

## * * * Section 16 - Other Information * * *

### Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.

### Literature References

None

### Other Information

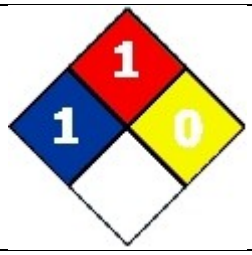
NFPA and HMIS:
NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None
HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:
The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, we cannot give any guarantees regarding information from other sources, and expressly do not make warranties, nor assume any liability for its use.

End of Sheet

# Material Safety Data Sheet # 336

Hercules Chemical Company Inc.
111 South Street
Passaic NJ 07055-7398
Information Telephone: 1-800 221-9330
Internet: www.herchem.com

| NFPA | HMIS | PPE | Transport Symbol |
|---|---|---|---|
|  | Health Hazard 1<br>Fire Hazard 1<br>Reactivity 0 | | |

**Preparation Date** April 27, 2007 **Revision Date 6/20/11** **Revision Number 2**

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Identity: HERCULES DARK CUTTING OIL.**
**Intended Use: PIPE THREADING LUBRICANT**

**Manufacturer:** Hercules Chemical Company, Inc.
111 South Street
Passaic, New Jersey 07055-7398

**Information Telephone**: (800) 221-9330

**Internet**: http://www.herchem.com

**Emergency Phone**: **CHEMTREC: (800) 424-9300**

**MSDS Date of Original Preparation**: **03/23/2007**

## 2. HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW**

If ingested, do not induce vomiting because of the potential of aspiration into lungs.
Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which vary from person to person. As a precaution, exposure to liquids, vapors, mist or fumes should be minimized.

Potential Health Effects.
**Inhalation:** Vapor inhalation of the product under ambient conditions is not a problem. If overcome by vapor from hot product, move the victim to fresh air. If not breathing, administer artificial respiration if trained. Get medical attention.
**Ingestion:** Low oral and dermal toxicity.
**Eye**: May cause mild to transient irritation.
**Skin:** May cause slight skin irritation. Prolonged or repeated skin contact can cause skin irritation and dermatitis.

HMIS Hazard Rating: 1 1 0 B

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | CAS Number | Wt/Wt % | OSHA PEL | ACGIH TLV | Other Limits |
|---|---|---|---|---|---|
| Petroleum Based Lubricating Oils | 64742-52-5, 64742-46-7 | 85-90 | 5 mg/m³ | 5 mg/m³ (as oil mist) | N/A |
| Sulfurized Fatty Oil Esters | 68153-70-8 | 5-10 | N/A | N/A | N/A |
| 1-Decene, Sulfurized | 72162-15-3 | 1-5 | N/E | N/E | N/E |
| Asphalt | 8052-42-4 | 5-10 | 5 mg/m³ (fumes) | 5 mg/m³ (fumes) | N/A |

## 4. EMERGENCY AND FIRST AID PROCEDURES.

**Eye:** Immediately flush victim's eyes with large quantities of water, for 15 minutes, holding the eyelids apart. Get medical attention if irritation persists.
**Skin:** Wash with water. Remove contaminated clothing
**Ingestion:** DO NOT INDUCE VOMITING. Immediately seek medical help.
**Inhalation:** Not a possible route of exposure under ambient temperature. If overcome by vapor from heated product, remove to fresh air. If not breathing, give artificial respiration if trained. Call a physician.

**Note:** Never give anything by mouth to an unconscious person.

## 5. FIRE FIGHTING MEASURES

**Flashpoint:** 320°F (160°C) (Test Method COC)
**Flammable Limits:** Not established.
**Autoignition Temperature:** Not established
**Extinguishing Media:** Water fog, Foam, Dry Chemical, Carbon Dioxide
**Unusual Fire or Explosion Hazards:** Empty containers not properly cleaned retain oil residue and can be dangerous.
**Special Fire-Fighting Instructions:** Firefighters and others who might be exposed to products of combustion, should wear (NIOSH approved) positive pressure self-contained breathing apparatus and full protective clothing.
**Hazardous Combustion Products:** Carbon monoxide, oxides of sulfur and other decomposition products may form upon incomplete combustion.

## 6. ACCIDENTAL RELEASE MEASURES

**Spills/Leak Control:** Keep spills out of sewers and water ways by dikeing. If the product has entered or may enter sewer, water ways or extensive land areas, advise authorities.
For small spills, absorb with inert material, sweep or scoop into containers for disposal at an approved waste site or facility.
Large spill, contain with by dikeing, pump the material into drums for disposal in accordance with Federal, State and local regulations. Absorb the left over with inert material (vermiculite) and collect into containers for disposal.

## 7. HANDLING AND STORAGE

**Handling:** No special precautions are required under normal conditions. Avoid excessive skin contact.
**Storage:** Store in original containers. Keep containers closed when not in use.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Respiratory Protection:** If oil mist exists, use NIOSH approved mask for oil mists.
**Engineering Controls:** Use with general or local exhaust ventilation.
**Skin Protection:** Wear protective gloves where prolonged contact is anticipated.
**Eye Protection:** Safety glasses or goggles if oil is being sprayed or splashed.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Appearance And Odor:** Dark with petroleum odor. | **Boiling Point:** >425°F |
| **Physical State:** liquid | **Vapor Pressure:** < 0.1 @ 38°C/100°F |
| **Vapor Density:** > 8.0 | **Evaporation Rate:** (Butyl Acetate=1) < 1.0one |
| **Solubility In Water:** Negligible | **Volatile Components:** 59 g/l |
| **Specific Gravity:** 0.906 @ 25°C | **Viscosity** @ 40°C: 35-42 cSt. |
| **Melting Point:** N/A | **pH:** N/A |

## 10. STABILITY AND REACTIVITY

**Stability:** Stable.
**Conditions to avoid:** Open flames, sparks, and ignition sources.
**Incompatibility:** Strong oxidizers such as liquid chlorine, sodium or calcium hypochlorite, and pure oxygen.
**Hazardous Decomposition Products:** Carbon monoxide, oxides of sulfur and other decomposition products may form from incomplete combustion.
**Hazardous Polymerization:** Will not occur.

## 11. TOXICOLOGICAL INFORMATION

**HEALTH HAZARDS:**
**Inhalation:** Not a known route of entry under typical conditions. If overcome by vapors from hot product, remove to fresh air. If not breathing, give artificial respiration if trained. Get medical attention.
**Eye**: May cause moderate to severe irritation.
**Skin:** May cause moderate skin irritation on prolonged contact. Prolonged skin contact with oils tends to remove skin oils possibly leading to irritation and dermatitis. Based on human experience and available toxicological data, this product is judged to be neither a corrosive nor an irritant by OSHA criteria.
**Ingestion:** Do not induce vomiting due to potential for aspirations into the lungs.
**Sensitization:** None.
**Chronic:** Not established
**Carcinogenicity:** Not a carcinogen
**Mutagenicity**: Not mutagenic.
**Medical Conditions Aggravated by Exposure:** Unknown.
**Reproductive Toxicity:** None
**Acute Toxicity Values**: Low levels of oral and dermal toxicity.

## 12. ECOLOGICAL INFORMATION

**Environmental Toxicity:** Not established.
**Environmental Transport:** Unknown.
**Environmental Degradation:** Not readily biodegradable.
**Soil Absorption/Mobility**: Unknown

## 13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with Federal, State, and Local regulations.

## 14. TRANSPORT INFORMATION

Not regulated

## 15. REGULATORY INFORMATION

**EPA Regulation:**
**SARA TITLE III:**
This material is not known to contain any chemicals on SARA section 313 list at a concentration greater than 1.0 percent or carcinogenic chemical on that list at a concentration greater than 0.1 percent.

TSCA Inventory: All the components in this product are listed on the TSCA inventory.

## 16. OTHER INFORMATION

**DISCLAIMER:**
The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Hercules cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.

# SAFETY DATA SHEET

## 1. Identification

**Product identifier** **Hercules MegaBubble**

**Other means of identification**

**Product code** 7322E

**Synonyms** Part Numbers: 45801, 45802, 45803, 45804

**Recommended use** Leak Detector

**Recommended restrictions** None known.

**Manufacturer/Importer/Supplier/Distributor information**

**Company Name** HCC Holdings, Inc. an Oatey Affiliate

**Address** 4700 West 160th Street
Cleveland, OH 44135

**Telephone** 216-267-7100

**E-mail** info@oatey.com

**Transport Emergency** Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)

**Emergency First Aid** 1-877-740-5015

**Contact person** MSDS Coordinator

## 2. Hazard(s) identification

**Physical hazards** Not classified.

**Health hazards** Not classified.

**Environmental hazards** Hazardous to the aquatic environment, acute hazard Not applicable

**OSHA defined hazards** Not classified.

**Label elements**

**Hazard symbol** None.

**Signal word** None.

**Hazard statement** The mixture does not meet the criteria for classification.

**Precautionary statement**

**Prevention** Observe good industrial hygiene practices.

**Response** Wash hands after handling.

**Storage** Store away from incompatible materials.

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

**Hazard(s) not otherwise classified (HNOC)** None known.

## 3. Composition/information on ingredients

**Mixtures**

| Chemical name | CAS number | % |
|---|---|---|
| Propylene glycol | 57-55-6 | 30-60 |
| Water | 7732-18-5 | 30-60 |
| Glycerol | 56-81-5 | 10-30 |

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

## 4. First-aid measures

**Inhalation** If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.

**Skin contact** Rinse skin with water/shower. Get medical attention if irritation develops and persists.

| | |
|---|---|
| **Eye contact** | Rinse with water. Get medical attention if irritation develops and persists. |
| **Ingestion** | Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately. |
| **Most important symptoms/effects, acute and delayed** | Direct contact with eyes may cause temporary irritation. |
| **Indication of immediate medical attention and special treatment needed** | Treat symptomatically. |
| **General information** | Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. |

## 5. Fire-fighting measures

| | |
|---|---|
| **Suitable extinguishing media** | Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO2). |
| **Unsuitable extinguishing media** | Do not use water jet as an extinguisher, as this will spread the fire. |
| **Specific hazards arising from the chemical** | During fire, gases hazardous to health may be formed. |
| **Special protective equipment and precautions for firefighters** | Self-contained breathing apparatus and full protective clothing must be worn in case of fire. |
| **Fire fighting equipment/instructions** | Move containers from fire area if you can do so without risk. |
| **Specific methods** | Use standard firefighting procedures and consider the hazards of other involved materials. |
| **General fire hazards** | No unusual fire or explosion hazards noted. |

## 6. Accidental release measures

| | |
|---|---|
| **Personal precautions, protective equipment and emergency procedures** | Keep unnecessary personnel away. For personal protection, see section 8 of the SDS. |
| **Methods and materials for containment and cleaning up** | Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.<br><br>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.<br><br>Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. |
| **Environmental precautions** | Avoid discharge into drains, water courses or onto the ground. |

## 7. Handling and storage

| | |
|---|---|
| **Precautions for safe handling** | Avoid prolonged exposure. Observe good industrial hygiene practices. |
| **Conditions for safe storage, including any incompatibilities** | Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). |

## 8. Exposure controls/personal protection

**Occupational exposure limits**

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

| Components | Type | Value | Form |
|---|---|---|---|
| Glycerol (CAS 56-81-5) | PEL | 5 mg/m3 | Respirable fraction. |
| | | 15 mg/m3 | Total dust. |

**US. Workplace Environmental Exposure Level (WEEL) Guides**

| Components | Type | Value | Form |
|---|---|---|---|
| Propylene glycol (CAS 57-55-6) | TWA | 10 mg/m3 | Aerosol. |

| | |
|---|---|
| **Biological limit values** | No biological exposure limits noted for the ingredient(s). |

| | |
|---|---|
| **Appropriate engineering controls** | Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. |

**Individual protection measures, such as personal protective equipment**

| | |
|---|---|
| **Eye/face protection** | Wear safety glasses with side shields (or goggles). |
| **Skin protection** | |
| **Hand protection** | Wear appropriate chemical resistant gloves. |
| **Other** | Wear suitable protective clothing. |
| **Respiratory protection** | In case of insufficient ventilation, wear suitable respiratory equipment. |
| **Thermal hazards** | Wear appropriate thermal protective clothing, when necessary. |
| **General hygiene considerations** | Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. |

## 9. Physical and chemical properties

| | |
|---|---|
| **Appearance** | |
| **Physical state** | Liquid. |
| **Form** | Liquid. |
| **Color** | Blue. |
| **Odor** | Odorless. |
| **Odor threshold** | Not available. |
| **pH** | 7.2 |
| **Melting point/freezing point** | Not available. |
| **Initial boiling point and boiling range** | 212 °F (100 °C) |
| **Flash point** | > 212.0 °F (> 100.0 °C) |
| **Evaporation rate** | Not available. |
| **Flammability (solid, gas)** | Not available. |
| **Upper/lower flammability or explosive limits** | |
| **Flammability limit - lower (%)** | Not available. |
| **Flammability limit - upper (%)** | Not available. |
| **Explosive limit - lower (%)** | Not available. |
| **Explosive limit - upper (%)** | Not available. |
| **Vapor pressure** | Not available. |
| **Vapor density** | Not available. |
| **Relative density** | 1.05 |
| **Solubility(ies)** | |
| **Solubility (water)** | Not available. |
| **Partition coefficient (n-octanol/water)** | Not available. |
| **Auto-ignition temperature** | Not available. |
| **Decomposition temperature** | Not available. |
| **Viscosity** | 100 cP |
| **Other information** | |
| **VOC (Weight %)** | 435 g/l |

## 10. Stability and reactivity

| | |
|---|---|
| **Reactivity** | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| **Chemical stability** | Material is stable under normal conditions. |
| **Possibility of hazardous reactions** | No dangerous reaction known under conditions of normal use. |

| | |
|---|---|
| **Conditions to avoid** | Contact with incompatible materials. |
| **Incompatible materials** | Strong oxidizing agents. |
| **Hazardous decomposition products** | No hazardous decomposition products are known. |

## 11. Toxicological information

**Information on likely routes of exposure**

| | |
|---|---|
| **Inhalation** | Prolonged inhalation may be harmful. |
| **Skin contact** | No adverse effects due to skin contact are expected. |
| **Eye contact** | Direct contact with eyes may cause temporary irritation. |
| **Ingestion** | Expected to be a low ingestion hazard. |
| **Symptoms related to the physical, chemical and toxicological characteristics** | Direct contact with eyes may cause temporary irritation. |

**Information on toxicological effects**

**Acute toxicity**

| Components | Species | Test Results |
|---|---|---|
| Glycerol (CAS 56-81-5) | | |
| **Acute** | | |
| *Oral* | | |
| LD50 | Rat | 12600 mg/kg |
| Propylene glycol (CAS 57-55-6) | | |
| **Acute** | | |
| *Oral* | | |
| LD50 | Rat | 30 g/kg |

* Estimates for product may be based on additional component data not shown.

| | |
|---|---|
| **Skin corrosion/irritation** | Prolonged skin contact may cause temporary irritation. |
| **Serious eye damage/eye irritation** | Direct contact with eyes may cause temporary irritation. |

**Respiratory or skin sensitization**

| | |
|---|---|
| **Respiratory sensitization** | Not a respiratory sensitizer. |
| **Skin sensitization** | This product is not expected to cause skin sensitization. |
| **Germ cell mutagenicity** | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |
| **Carcinogenicity** | This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. |

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

| | |
|---|---|
| **Reproductive toxicity** | This product is not expected to cause reproductive or developmental effects. |
| **Specific target organ toxicity - single exposure** | Not classified. |
| **Specific target organ toxicity - repeated exposure** | Not classified. |
| **Aspiration hazard** | Not an aspiration hazard. |
| **Chronic effects** | Prolonged inhalation may be harmful. |
| **Further information** | This product has no known adverse effect on human health. |

## 12. Ecological information

| | |
|---|---|
| **Ecotoxicity** | The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. |

| Components | | Species | Test Results |
|---|---|---|---|
| Propylene glycol (CAS 57-55-6) | | | |
| **Aquatic** | | | |
| Crustacea | LC50 | Ceriodaphnia dubia | 18340 mg/l, 48 hours |
| Fish | LC50 | Pimephales promelas | 46500 mg/l, 96 hours |

* Estimates for product may be based on additional component data not shown.

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential**

**Partition coefficient n-octanol / water (log Kow)**

| | |
|---|---|
| Glycerol (CAS 56-81-5) | -1.76 |
| Propylene glycol (CAS 57-55-6) | -0.92 |

**Mobility in soil** No data available.

**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## 13. Disposal considerations

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## 14. Transport information

**DOT**

Not regulated as dangerous goods.

**IATA**

Not regulated as dangerous goods.

**IMDG**

Not regulated as dangerous goods.

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

## 15. Regulatory information

**US federal regulations** This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**
Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** No

**SARA 313 (TRI reporting)**
Not regulated.

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**
Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**
Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations**

**US. Massachusetts RTK - Substance List**
Glycerol (CAS 56-81-5)

**US. New Jersey Worker and Community Right-to-Know Act**
Glycerol (CAS 56-81-5)
Propylene glycol (CAS 57-55-6)

**US. Pennsylvania Worker and Community Right-to-Know Law**
Glycerol (CAS 56-81-5)
Propylene glycol (CAS 57-55-6)

**US. Rhode Island RTK**
Not regulated.

**US. California Proposition 65**
California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**International Inventories**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | No |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

**Issue date** 05-February-2015

**Revision date** -

**Version #** 01

**HMIS® ratings** Health: 0
Flammability: 0
Physical hazard: 0

**Disclaimer** HCC Holdings Inc. an Oatey Affiliate cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

# SAFETY DATA SHEET

## 1. Identification

**Product identifier** **Hercules Staput**

**Other means of identification**

**Product code** 1618E

**Synonyms** Part Numbers: 25101, 25103, 25105, 25110, 25120, 25122

**Recommended use** Plumbing Mastic

**Recommended restrictions** Workers (and your customers or users in the case of resale) should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

**Manufacturer/Importer/Supplier/Distributor information**


**Company Name** HCC Holdings, Inc. an Oatey Affiliate

**Address** 4700 West 160th Street
Cleveland, OH 44135

**Telephone** 216-267-7100

**E-mail** info@oatey.com


**Transport Emergency** Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)

**Emergency First Aid** 1-877-740-5015

**Contact person** MSDS Coordinator

## 2. Hazard(s) identification

**Physical hazards** Not classified.

**Health hazards** Not classified.

**OSHA defined hazards** Not classified.

**Label elements**

**Hazard symbol** None.

**Signal word** None.

**Hazard statement** The mixture does not meet the criteria for classification.

**Precautionary statement**

**Prevention** Observe good industrial hygiene practices.

**Response** Wash hands after handling.

**Storage** Store away from incompatible materials.

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

**Hazard(s) not otherwise classified (HNOC)** Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

## 3. Composition/information on ingredients

**Mixtures**

| Chemical name | CAS number | % |
|---|---|---|
| Calcium carbonate | 1317-65-3 | 60-100 |
| Kaolin | 1332-58-7 | 5-10 |
| Mineral Wool | 65997-17-3 | 1-5 |
| Petroleum-based Lubricating Oil | 64741-88-4 | 1-5 |

| | | |
|---|---|---|
| Crystalline silica (Quartz) | 14808-60-7 | <1 |
| Other components below reportable levels | | 16.5 |

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

## 4. First-aid measures

**Inhalation** Move to fresh air. Call a physician if symptoms develop or persist.

**Skin contact** Wash off with soap and water. Get medical attention if irritation develops and persists.

**Eye contact** Rinse with water. Get medical attention if irritation develops and persists.

**Ingestion** Rinse mouth. Get medical attention if symptoms occur.

**Most important symptoms/effects, acute and delayed** Coughing.

**Indication of immediate medical attention and special treatment needed** Treat symptomatically.

**General information** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 5. Fire-fighting measures

**Suitable extinguishing media** Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical** During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Fire fighting equipment/instructions** Move containers from fire area if you can do so without risk.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

**General fire hazards** No unusual fire or explosion hazards noted.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up** Stop the flow of material, if this is without risk. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

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

## 7. Handling and storage

**Precautions for safe handling** Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Avoid prolonged exposure.

**Conditions for safe storage, including any incompatibilities** Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

**Occupational exposure limits**

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

| Components | Type | Value | Form |
|---|---|---|---|
| Calcium carbonate (CAS 1317-65-3) | PEL | 5 mg/m3 | Respirable fraction. |
| | | 15 mg/m3 | Total dust. |
| Kaolin (CAS 1332-58-7) | PEL | 5 mg/m3 | Respirable fraction. |
| | | 15 mg/m3 | Total dust. |

**US. OSHA Table Z-3 (29 CFR 1910.1000)**

| Components | Type | Value | Form |
|---|---|---|---|
| Crystalline silica (Quartz) (CAS 14808-60-7) | TWA | 0.3 mg/m3 | Total dust. |
| | | 0.1 mg/m3 | Respirable. |

**US. ACGIH Threshold Limit Values**

| Components | Type | Value | Form |
|---|---|---|---|
| Crystalline silica (Quartz) (CAS 14808-60-7) | TWA | 0.025 mg/m3 | Respirable fraction. |
| Kaolin (CAS 1332-58-7) | TWA | 2 mg/m3 | Respirable fraction. |
| Petroleum-based Lubricating Oil (CAS 64741-88-4) | TWA | 5 mg/m3 | Inhalable fraction. |

**US. NIOSH: Pocket Guide to Chemical Hazards**

| Components | Type | Value | Form |
|---|---|---|---|
| Calcium carbonate (CAS 1317-65-3) | TWA | 5 mg/m3 | Respirable. |
| | | 10 mg/m3 | Total |
| Crystalline silica (Quartz) (CAS 14808-60-7) | TWA | 0.05 mg/m3 | Respirable dust. |
| Kaolin (CAS 1332-58-7) | TWA | 5 mg/m3 | Respirable. |
| | | 10 mg/m3 | Total |
| Mineral Wool (CAS 65997-17-3) | TWA | 3 fibers/cm3 | Dust. |
| | | 3 fibers/cm3 | Fiber. |
| | | 5 mg/m3 | Fiber, total |
| | | 5 mg/m3 | fibers, total dust |
| Petroleum-based Lubricating Oil (CAS 64741-88-4) | Ceiling | 1800 mg/m3 | |
| | STEL | 10 mg/m3 | Mist. |
| | TWA | 5 mg/m3 | Mist. |

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Exposure guidelines** Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

**Appropriate engineering controls** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Individual protection measures, such as personal protective equipment**

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

**Skin protection**

**Hand protection** Wear appropriate chemical resistant gloves.

**Other** Wear suitable protective clothing.

**Respiratory protection** Use a particulate filter respirator for particulate concentrations exceeding the Occupational Exposure Limit.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

**Appearance**

**Physical state** Solid.

**Form** Putty.

| | |
|---|---|
| **Color** | Off-white. |
| **Odor** | Slight. |
| **Odor threshold** | Not available. |
| **pH** | Not applicable |
| **Melting point/freezing point** | Not available. |
| **Initial boiling point and boiling range** | Not determined |
| **Flash point** | > 212.0 °F (> 100.0 °C) |
| **Evaporation rate** | Not available. |
| **Flammability (solid, gas)** | Not available. |
| **Upper/lower flammability or explosive limits** | |
| **Flammability limit - lower (%)** | Not available. |
| **Flammability limit - upper (%)** | Not available. |
| **Explosive limit - lower (%)** | Not available. |
| **Explosive limit - upper (%)** | Not available. |
| **Vapor pressure** | Not available. |
| **Vapor density** | Not available. |
| **Relative density** | 1.8 |
| **Solubility(ies)** | |
| **Solubility (water)** | Not available. |
| **Partition coefficient (n-octanol/water)** | Not available. |
| **Auto-ignition temperature** | Not available. |
| **Decomposition temperature** | Not available. |
| **Viscosity** | > 5000000 cP |
| **Other information** | |
| **VOC (Weight %)** | 6 g/l |

## 10. Stability and reactivity

| | |
|---|---|
| **Reactivity** | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| **Chemical stability** | Material is stable under normal conditions. |
| **Possibility of hazardous reactions** | No dangerous reaction known under conditions of normal use. |
| **Conditions to avoid** | Contact with incompatible materials. |
| **Incompatible materials** | Acids. Fluorine. |
| **Hazardous decomposition products** | No hazardous decomposition products are known. |

## 11. Toxicological information

**Information on likely routes of exposure**

| | |
|---|---|
| **Inhalation** | Prolonged inhalation may be harmful. |
| **Skin contact** | No adverse effects due to skin contact are expected. |
| **Eye contact** | Direct contact with eyes may cause temporary irritation. |
| **Ingestion** | Expected to be a low ingestion hazard. |
| **Symptoms related to the physical, chemical and toxicological characteristics** | Coughing. |

**Information on toxicological effects**

| | |
|---|---|
| **Acute toxicity** | Not available. |
| **Skin corrosion/irritation** | Prolonged skin contact may cause temporary irritation. |

| | |
|---|---|
| **Serious eye damage/eye irritation** | Direct contact with eyes may cause temporary irritation. |
| **Respiratory or skin sensitization** | |
| **Respiratory sensitization** | Not a respiratory sensitizer. |
| **Skin sensitization** | This product is not expected to cause skin sensitization. |
| **Germ cell mutagenicity** | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |
| **Carcinogenicity** | In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) Risk of cancer cannot be excluded with prolonged exposure. |

**IARC Monographs. Overall Evaluation of Carcinogenicity**

| | |
|---|---|
| Crystalline silica (Quartz) (CAS 14808-60-7) | 1 Carcinogenic to humans. |
| Petroleum-based Lubricating Oil (CAS 64741-88-4) | 3 Not classifiable as to carcinogenicity to humans. |

**NTP Report on Carcinogens**

| | |
|---|---|
| Crystalline silica (Quartz) (CAS 14808-60-7) | Known To Be Human Carcinogen. |

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

| | |
|---|---|
| **Reproductive toxicity** | This product is not expected to cause reproductive or developmental effects. |
| **Specific target organ toxicity - single exposure** | Not classified. |
| **Specific target organ toxicity - repeated exposure** | Not classified. |
| **Aspiration hazard** | Not an aspiration hazard. |
| **Chronic effects** | Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects. |
| **Further information** | This product has no known adverse effect on human health. |

## 12. Ecological information

| | |
|---|---|
| **Ecotoxicity** | The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. |
| **Persistence and degradability** | No data is available on the degradability of this product. |
| **Bioaccumulative potential** | No data available. |
| **Mobility in soil** | No data available. |
| **Other adverse effects** | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |

## 13. Disposal considerations

| | |
|---|---|
| **Disposal instructions** | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. |
| **Local disposal regulations** | Dispose in accordance with all applicable regulations. |
| **Hazardous waste code** | The waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| **Waste from residues / unused products** | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| **Contaminated packaging** | Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. |

## 14. Transport information

**DOT**

Not regulated as dangerous goods.

**IATA**

Not regulated as dangerous goods.

**IMDG**

Not regulated as dangerous goods.

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

## 15. Regulatory information

**US federal regulations** This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
One or more components are not listed on TSCA.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**
Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** No

**SARA 313 (TRI reporting)**

Not regulated.

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations**

**US. Massachusetts RTK - Substance List**

Calcium carbonate (CAS 1317-65-3)
Crystalline silica (Quartz) (CAS 14808-60-7)
Kaolin (CAS 1332-58-7)
Petroleum-based Lubricating Oil (CAS 64741-88-4)

**US. New Jersey Worker and Community Right-to-Know Act**

Calcium carbonate (CAS 1317-65-3)
Crystalline silica (Quartz) (CAS 14808-60-7)
Kaolin (CAS 1332-58-7)
Mineral Wool (CAS 65997-17-3)

**US. Pennsylvania Worker and Community Right-to-Know Law**

Calcium carbonate (CAS 1317-65-3)
Crystalline silica (Quartz) (CAS 14808-60-7)
Kaolin (CAS 1332-58-7)

**US. Rhode Island RTK**

Not regulated.

**US. California Proposition 65**

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

**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

Crystalline silica (Quartz) (CAS 14808-60-7)

**International Inventories**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| Australia | Australian Inventory of Chemical Substances (AICS) | No |
| Canada | Domestic Substances List (DSL) | No |
| Canada | Non-Domestic Substances List (NDSL) | Yes |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | No |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | No |
| Korea | Existing Chemicals List (ECL) | No |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | No |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

**Issue date** 22-April-2015

**Revision date** -

**Version #** 01

**HMIS® ratings** Health: 0
Flammability: 0
Physical hazard: 0

**NFPA ratings**

**Disclaimer** HCC Holdings Inc. an Oatey Affiliate cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

# Material Safety Data Sheet

An RPM Company

**24 Hour Emergency Phone Numbers:**
**Medical/Poison Control:**
**In U.S.: Call 1-800-222-1222**
**Outside U.S.: Call your local poison control center**
**Transportation/National Response Center:**
**1-800-535-5053**
**1-352-323-3500**

NOTE: The National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

**IMPORTANT:** Provide this information to employees, customers, and users of this product. Read this MSDS before handling or disposing of this product. This product is covered by the OSHA Hazard Communication Standard and this document has been prepared in accordance with requirements of this standard. All abbreviated terms used in this MSDS are further described in Section 16.

## Section 1 - Chemical Product / Company Information

This Material Safety Data Sheet is available in American Spanish upon request.
Los Datos de Serguridad del Producto pueden obtenerse en Espanol si lo riquiere.

| | | | |
|---|---|---|---|
| **Product Name:** | Kwik Seal Tub & Tile Adhesive Caulk - All Colors | **Revision Date:** | 02/08/2012 |
| **Product UPC Number:** | 070798180017,070798180024,070798180130,070798310018 | **Supersedes:** | 07/14/2010 |
| **Product Use/Class:** | Caulk | **MSDS Number:** | 00010009001 |
| **Manufacturer:** | **DAP Products Inc.**<br>**2400 Boston Street Suite 200**<br>**Baltimore, MD 21224-4723**<br>**888-327-8477 (non-emergency matters)** | | |

## Section 2 - Hazards Identification

**Emergency Overview:** A(n) colored paste product with a very slight ammonia odor. WARNING! May cause eye, skin, nose, throat and respiratory tract irritation. Harmful if swallowed or absorbed through the skin. This product contains ethylene glycol.

Refer to other MSDS sections for other detailed information.

**Effects Of Overexposure - Eye Contact:** May cause eye irritation.

**Effects Of Overexposure - Skin Contact:** Harmful if absorbed through the skin. May cause skin irritation.

**Effects Of Overexposure - Inhalation:** May be harmful if inhaled. Inhalation may cause irritation to the respiratory tract (nose, mouth, mucous membranes).

**Effects Of Overexposure - Ingestion:** Harmful or fatal if swallowed. If ingested, may cause depressed respiration. Ingestion may result in obstruction when material hardens. Ingestion of ethylene glycol can cause gastrointestinal irritation, nausea, vomiting, diarrhea and if ingested in sufficient quantities, death.

**Effects Of Overexposure - Chronic Hazards:** Repeated or prolonged exposure may cause skin, respiratory, kidney and liver damage. Prolonged and repeated skin contact may cause irritation and possibly dermatitis.

The International Agency for Research on Cancer (IARC) has determined that crystalline silica in the form of quartz or

cristobalite that is inhaled from occupational sources is carcinogenic to humans (Group 1- carcinogenic to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (published in June 1997) in conjunction with the use of these materials. The National Toxicology Program (NTP) classifies respirable crystalline silica as "known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (Group A2).
Breathing dust containing respirable crystalline silica may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may have the following serious chronic health effects: Excessive inhalation of respirable dust can cause pneumoconiosis, a respiratory disease, which can result in delayed, progressive, disabling and sometimes fatal lung injury. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function. Smoking exacerbates this disease. Individuals with pneumoconiosis are predisposed to develop tuberculosis. There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by fibrosis of the lungs, skin and other internal organs) and kidney disease. Prolonged, repeated, or high exposures may cause weakness and depression of the central nervous system.

Ethylene Glycol may cause kidney and liver damage upon prolonged and repeated overexposures. Studies have shown that repeated inhalation of ethylene glycol has produced adverse cardiovascular changes in laboratory animals. Ethylene glycol has been shown to cause birth defects in laboratory animals.

**Primary Route(s) Of Entry:** Skin Contact, Inhalation, Eye Contact

**Medical Conditions which May be Aggravated by Exposure:** None known.

**Carcinogenicity:**

| CAS No. | Chemical Name | ACGIH | OSHA | IARC | NTP |
|---|---|---|---|---|---|
| 13463-67-7 | Titanium dioxide | Not Listed. | Not Listed. | Possibly carcinogenic to humans. | Not Listed. |
| 14808-60-7 | Silica, crystalline | Suspected human carcinogen. | Not Listed. | Carcinogenic to humans. | Known carcinogen. |

## Section 3 - Composition / Information On Ingredients

| Chemical Name | CASRN | Wt% |
|---|---|---|
| Limestone | 1317-65-3 | 30-60 |
| Titanium dioxide | 13463-67-7 | 0.5-1.5 |
| Silica, crystalline | 14808-60-7 | 0.1-1.0 |
| Ethylene glycol | 107-21-1 | 0.1-1.0 |

## Section 4 - First Aid Measures

**First Aid - Eye Contact:** In case of contact, immediately flush eyes with large quantities of water for at least 15 minutes until irritation subsides. Get medical attention immediately.

**First Aid - Skin Contact:** Remove and wash contaminated clothing. Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical aid if symptoms persist. If skin irritation persists, call a physician.

**First Aid - Inhalation:** If inhaled, remove to fresh air. If breathing is difficult, leave the area to obtain fresh air. If continued breathing difficulty is experienced, get medical attention immediately.

**First Aid - Ingestion:** If swallowed, DO NOT INDUCE VOMITING. Get medical attention immediately.

**Note to Physician:** None.

**COMMENTS:** If over-exposure occurs, call your poison control center at 1-800-222-1222.

## Section 5 - Fire Fighting Measures

**Extinguishing Media:** Carbon Dioxide, Dry Chemical, Foam, Water Fog

**Unusual Fire And Explosion Hazards:** No special protective measures against fire required.

**Special Firefighting Procedures:** Wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear. Use water spray to cool exposed surfaces.

## Section 6 - Accidental Release Measures

**Steps To Be Taken If Material Is Released Or Spilled:** Wear proper protective equipment as specified in Section 8. Contain spilled material and remove with inert absorbent. Dispose of contaminated absorbent, container and unused contents in accordance with local, state and federal regulations.

## Section 7 - Handling And Storage

**Handling:** KEEP OUT OF REACH OF CHILDREN! DO NOT TAKE INTERNALLY. Use only with adequate ventilation. Open all windows and doors or use other means to ensure cross-ventilation and fresh air entry during application and drying. Odor is not an adequate warning for hazardous conditions. Avoid breathing vapor and contact with eyes, skin and clothing. Wash thoroughly after handling.

**Storage:** Close container after each use. Do not store at temperatures above 120 degrees F. Store containers away from excessive heat and freezing. Store away from caustics and oxidizers.

## Section 8 - Exposure Controls / Personal Protection

| Chemical Name | CASRN | ACGIH TWA | ACGIH STEL | ACGIH CEIL | OSHA TWA | OSHA STEL | OSHA CEIL | Skin |
|---|---|---|---|---|---|---|---|---|
| Limestone | 1317-65-3 | 10 MGM3 | N.E. | N.E. | 5 MGM3 (respirable fraction) | N.E. | N.E. | No |
| Titanium dioxide | 13463-67-7 | 10 MGM3 | N.E. | N.E. | 15 MGM3 | N.E. | N.E. | No |
| Silica, crystalline | 14808-60-7 | 0.025 MGM. | N.E. | N.E. | 10/(%SiO2 + 2) MGM3 | N.E. | N.E. | No |
| Ethylene glycol | 107-21-1 | N.E. | N.E. | 100 MGM3 | N.E. | N.E. | N.E. | No |

**Exposure Notes:**

14808-60-7 The 2002 ACGIH Threshold Limit Values for Chemical Substances and Physical Agents lists the median Respirable Particulate Mass (RPM) point for crystalline silica at 4.0 microns in terms of the particle's aerodynamic diameter.

The TLVs for crystalline silica represent the respirable fraction.

OSHA PEL TWA for Quartz is calculated using the following formula: 10 mg/m3/(% SiO2 + 2). Both concentration and percent quartz for the application of this limit are to be determined from the fraction passing a size selector with the following characteristics.

| Aerodynamic diameter ( unit density sphere ) | Percent passing selector |
|---|---|
| 2 | 90 |
| 2.5 | 75 |
| 3.5 | 50 |
| 5.0 | 25 |
| 10 | 0 |

**Precautionary Measures:** Contact lenses pose a special hazard; soft lenses may absorb and all lenses concentrate irritants.

**Engineering Controls:** Good general ventilation should be sufficient to control airborne levels. Ensure adequate

ventilation, especially in confined areas. Local ventilation of emission sources may be necessary to maintain ambient concentrations below recommended exposure limits.

**Respiratory Protection:** In case of insufficient ventilation, wear suitable respiratory equipment. A NIOSH-approved air purifying respirator with an organic vapor cartridge or canister may be necessary under certain circumstances where airborne concentrations are expected to exceed exposure limits. A respiratory protection program that meets the OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. National Institute for Occupational Safety and Health (NIOSH) has recommended that the permissible exposure limit be changed to 50 micrograms respirable free silica per cubic meter of air (0.05 mg/m3) as determined by a full shift sample up to 10-hour work shift.

**Skin Protection:** Rubber gloves.

**Eye Protection:** Goggles or safety glasses with side shields.

**Other protective equipment:** Not required under normal use.

**Hygienic Practices:** Wash hands before breaks and at the end of workday. Remove and wash contaminated clothing before re-use.

**Important:** Listed Permissible Exposure Levels (PEL) are from the U.S. Dept. of Labor OSHA Final Rule Limits (CFR 29 1910.1000); these limits may vary between states.

**Note:** An employee's skin exposure to substances having a "YES" in the "SKIN" column in the table above shall be prevented or reduced to the extent necessary under the circumstances through the use of gloves, coveralls, goggles or other appropriate personal protective equipment, engineering controls or work practices.

## Section 9 - Physical And Chemical Properties

| | | | |
|---|---|---|---|
| **Boiling Range:** | Not Established | **Vapor Density:** | Heavier Than Air |
| **Odor:** | Very Slight Ammonia | **Odor Threshold:** | Not Established |
| **Color:** | Colored | **Evaporation Rate:** | Slower Than n-Butyl Acetate |
| **Solubility in H2O:** | Not Established | **Specific Gravity:** | 1.57 - 1.59 |
| **Freeze Point:** | Not Established | **pH:** | Between 7.0 and 12.0 |
| **Vapor Pressure:** | Not Established | **Viscosity:** | Not Established |
| **Physical State:** | Paste | **Flammability:** | Non-Flammable |
| **Flash Point, F:** | Greater than 200 | **Method:** | (Seta Closed Cup) |
| **Lower Explosive Limit, %:** | Not Determined | **Upper Explosive Limit, %:** | Not Determined |

When reported, vapor pressure of this product has been calculated theoretically based on its constituent makeup and has not been determined experimentally.

(See section 16 for abbreviation legend)

## Section 10 - Stability And Reactivity

**Conditions To Avoid:** Excessive heat and freezing.

**Incompatibility:** Incompatible with strong bases and oxidizing agents.

**Hazardous Decomposition Products:** Normal decomposition products, i.e., COx, NOx.

**Hazardous Polymerization:** Hazardous polymerization will not occur under normal conditions.

**Stability:** Stable under recommended storage conditions.

## Section 11 - Toxicological Information

**Product LD50:** Not Established **Product LC50:** Not Established

| CASRN | Chemical Name | LD50 | LC50 |
|---|---|---|---|
| 107-21-1 | Ethylene glycol | Rat:4700 mg/kg | Rat:10876 mg/kg |

**Significant Data with Possible Relevance to Humans:** None.

## Section 12 - Ecological Information

**Ecological Information:** Ecological injuries are not known or expected under normal use.

## Section 13 - Disposal Information

**Disposal Information:** Dispose of material in accordance with all federal, state and local regulations. State and Local regulations/restrictions are complex and may differ from Federal regulations. Responsibility for proper waste disposal is with the owner of the waste.

**EPA Waste Code if Discarded (40 CFR Section 261):** None.

## Section 14 - Transportation Information

| | | | |
|---|---|---|---|
| **DOT Proper Shipping Name:** | Not Regulated. | **Packing Group:** | N.A. |
| **DOT Technical Name:** | N.A. | **Hazard Subclass:** | N.A. |
| **DOT Hazard Class:** | N.A. | **DOT UN/NA Number:** | N.A. |

Note: The shipping information provided is applicable for domestic ground transport only. Different categorization may apply if shipped via other modes of transportation and/or to non-domestic destinations.

## Section 15 - Regulatory Information

**CERCLA - SARA Hazard Category:**

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Immediate Health Hazard, Chronic Health Hazard

**SARA Section 313:**

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

None

**Toxic Substances Control Act:**

All ingredients in this product are either on TSCA inventory list, or otherwise exempt.

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

None

**New Jersey Right-to-Know:**

The following materials are non-hazardous, but are among the top five components in this product:

| Chemical Name | CAS Number |
|---|---|
| Water | 7732-18-5 |
| Non-Hazardous Polymer | Proprietary |
| Acrylic polymer | Proprietary |
| Non-Hazardous Oil / Wax | Proprietary |

**Pennsylvania Right-to-Know:**

The following non-hazardous ingredients are present in the product at greater than 3%:

| Chemical Name | CAS Number |
|---|---|
| Water | 7732-18-5 |
| Non-Hazardous Polymer | Proprietary |
| Acrylic polymer | Proprietary |
| Non-Hazardous Oil / Wax | Proprietary |

**California Proposition 65:** WARNING: This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

## Section 16 - Other Information

**HMIS Ratings:**

Health: 1 Flammability: 0 Reactivity: 0 Personal Protection: X

**Volatile Organic Compounds (VOC), less water less exempts:** g/L: 32.7 lb/gal: 0.27 wt:wt%: 1.4

**Volatile Organic Compounds (VOC), less water less exempts, less LVP-VOCs:** wt:wt%: 0.6

**REASON FOR REVISION:** Periodic Update

**Legend**:

N.A. – Not Applicable

N.E. – Not Established

N.D. – Not Determined

VOC – Volatile Organic Compound

PEL – Permissible Exposure Limit

TLV – Threshold Limit Value

CEIL – Ceiling Exposure Limit

LD50 – Lethal Dose 50

F – Degree Fahrenheit

C – Degree Celsius

ACGIH – American Conference of Governmental Industrial Hygienists

SARA – Superfund Amendments and Reauthorization Act of 1986

NJRTK – New Jersey Right-to-Know Law

OSHA – Occupational Safety and Health Administration

HMIS – Hazardous Materials Identification System

NTP – National Toxicology Program

STEL – Short Term Exposure Limit

LC50 – Lethal Concentration 50

MSDS – Material Safety Data Sheet

CASRN – The Chemical Abstracts Service Registry Number

DAP believes the data and statements contained herein are accurate as of the date hereof. They are offered in good faith as typical values and not as a product specification. **NO WARRANTY OF MERCHANTABILITY, WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE WITH REGARD TO THE INFORMATION HEREIN PROVIDED OR THE PRODUCT TO WHICH THE INFORMATION REFERS.** Since this document is intended only as a guide to the appropriate use and precautionary handling of the referenced product by a properly trained person, it is therefore the responsibility of the user to (i) review the recommendations with due consideration for the specific context of the intended use and (ii) determine if they are appropriate.

<End of MSDS>

# SAFETY DATA SHEET

MAPP GAS (Petroleum Gas, MAPD)

## Section 1. Identification

**GHS product identifier** : MAPP GAS (Petroleum Gas, MAPD)

**Other means of identification** : MAP,MAPP,Methyacetylene-Propadiene, Mixture of Methylacetylene and Propadiene

**Product use** : Synthetic/Analytical chemistry.

**Synonym** : MAP,MAPP,Methyacetylene-Propadiene, Mixture of Methylacetylene and Propadiene

**SDS #** : 002015

**Supplier's details** : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

**Emergency telephone number (with hours of operation)** : 1-866-734-3438

## Section 2. Hazards identification

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

**Classification of the substance or mixture** : FLAMMABLE GASES - Category 1
GASES UNDER PRESSURE - Liquefied gas

**GHS label elements**

**Hazard pictograms** :

**Signal word** : Danger

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

**Precautionary statements**

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

**Prevention** : Never Put cylinders into unventilated areas of passenger vehicles. Keep away from heat, sparks, open flames and hot surfaces. - No smoking.

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

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

**Disposal** : Not applicable.



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## Section 2. Hazards identification

**Hazards not otherwise classified** : Liquid can cause burns similar to frostbite.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture

**Other means of identification** : MAP,MAPP,Methyacetylene-Propadiene, Mixture of Methylacetylene and Propadiene

### CAS number/other identifiers

**CAS number** : Not applicable.

**Product code** : 002015

| Ingredient name | % | CAS number |
|---|---|---|
| propylene | 40 - 50 | 115-07-1 |
| methyl acetylene | 27 - 33 | 74-99-7 |
| 1,2-propadiene | 13 - 15 | 463-49-0 |
| isobutane | 2 - 5 | 75-28-5 |
| N-Butane | 2 - 5 | 106-97-8 |
| Propane | 1 - 5 | 74-98-6 |

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

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

## Section 4. First aid measures

### Description of necessary first aid measures

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

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

**Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. In case of contact with liquid, warm frozen tissues slowly with lukewarm water and get medical attention. Do not rub affected area. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if adverse health effects persist or are severe. Ingestion of liquid can cause burns similar to frostbite. If frostbite occurs, get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. As this product rapidly becomes a gas when released, refer to the inhalation section.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects



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## Section 4. First aid measures

**Eye contact** : Liquid can cause burns similar to frostbite.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.

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

**Ingestion** : Ingestion of liquid can cause burns similar to frostbite.

**Over-exposure signs/symptoms**

**Eye contact** : Adverse symptoms may include the following:
frostbite

**Inhalation** : No specific data.

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

**Ingestion** : Adverse symptoms may include the following:
frostbite

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

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

**Specific treatments** : No specific treatment.

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

**See toxicological information (Section 11)**

## Section 5. Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media** : None known.

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

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

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

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



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# Section 6. Accidental release measures

## Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

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

## Methods and materials for containment and cleaning up

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

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

# Section 7. Handling and storage

## Precautions for safe handling

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

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

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



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# Section 8. Exposure controls/personal protection

## Control parameters

### Occupational exposure limits

None.

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

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

## Individual protection measures

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

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

### Skin protection

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

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

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

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



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## Section 9. Physical and chemical properties

**Appearance**

**Physical state** : Gas. [Liquefied gas]

**Color** : Not available.

**Molecular weight** : 42 g/mol

**Melting/freezing point** : -102.7°C (-152.9°F) This is based on data for the following ingredient: Methyl Acetylene. Weighted average: -151.39°C (-240.5°F)

**Critical temperature** : Lowest known value: 91.85°C (197.3°F) (propylene).

**Odor** : Not available.

**Odor threshold** : Not available.

**pH** : Not available.

**Flash point** : Not available.

**Burning time** : Not applicable.

**Burning rate** : Not applicable.

**Evaporation rate** : Not available.

**Flammability (solid, gas)** : Not available.

**Lower and upper explosive (flammable) limits** : Lower: 2%
Upper: 13%

**Vapor pressure** : Not available.

**Vapor density** : Highest known value: 2.1 (Air = 1) (Butane). Weighted average: 1.52 (Air = 1)

**Gas Density (lb/ft $^3$)** : Weighted average: 0.11

**Relative density** : Not applicable.

**Solubility** : Not available.

**Solubility in water** : Not available.

**Partition coefficient: n-octanol/water** : Not available.

**Auto-ignition temperature** : Not available.

**Decomposition temperature** : Not available.

**SADT** : Not available.

**Viscosity** : Not applicable.

## Section 10. Stability and reactivity

**Reactivity** : No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability** : The product is stable.

**Possibility of hazardous reactions** : Hazardous reactions or instability may occur under certain conditions of storage or use.

**Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

**Incompatibility with various substances** : Extremely reactive or incompatible with oxidizing agents.
Reactive with metals.
|Additionally, avoid contact with acetylide-forming metals (copper,silver and mercury). Copper alloys (such as brass) containing sixty six percent (66%) or more of copper should not be exposed to MAPD.



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# Section 10. Stability and reactivity

**Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

**Hazardous polymerization** : May Occur.

Conditions to Avoid: Elevated tempertures and pressures. Polymerization catalysts, such as metal alkyls, can cause uncontrolled polymerization. Contamination with oxygen can cause propadiene to form hazardous peroxides.

INHIBITORS/STABILIZERS

An ihibitor is added to the MAPD mixture to prevent potential unstable peroxide formation. Butanes (iso and/or normal) are also added to the MAPD mixture to prevent potential concentration of the methylacetylene and propadiene from reaching concentration levels that would render the mixture unstable in case of weathering off (evaporation of light components).

# Section 11. Toxicological information

## Information on toxicological effects

### Acute toxicity

Not available.

### Irritation/Corrosion

Not available.

### Sensitization

Not available.

### Mutagenicity

Not available.

### Carcinogenicity

Not available.

### Reproductive toxicity

Not available.

### Teratogenicity

Not available.

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

**Information on the likely routes of exposure** : Not available.

## Potential acute health effects



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## Section 11. Toxicological information

**Eye contact** : Liquid can cause burns similar to frostbite.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.

**Ingestion** : Ingestion of liquid can cause burns similar to frostbite.

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : Adverse symptoms may include the following: frostbite

**Inhalation** : No specific data.

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

**Ingestion** : Adverse symptoms may include the following: frostbite

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

#### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Potential chronic health effects

Not available.

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

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

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : No known significant effects or critical hazards.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

## Section 12. Ecological information

### Toxicity

Not available.

### Persistence and degradability

Not available.



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## Section 12. Ecological information

### 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. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

## Section 14. Transport information

| | DOT | TDG | Mexico | IMDG | IATA |
|---|---|---|---|---|---|
| **UN number** | UN1060 | UN1060 | UN1060 | UN1060 | UN1060 |
| **UN proper shipping name** | Methyl Acetylene and Propadiene mixtures, stabilized | Methyl Acetylene and Propadiene mixtures, stabilized | Methyl Acetylene and Propadiene mixtures, stabilized | Methyl Acetylene and Propadiene mixtures, stabilized | Methyl Acetylene and Propadiene mixtures, stabilized |
| **Transport hazard class(es)** | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 |
| **Packing group** | - | - | - | - | - |
| **Environment** | No. | No. | No. | No. | No. |
| **Additional information** | - | **Explosive Limit and Limited Quantity Index**<br>0.125<br><br>**ERAP Index**<br>3000<br><br>**Passenger Carrying Road or Rail Index**<br>Forbidden | - | - | - |

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

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



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## Section 14. Transport information

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

## Section 15. Regulatory information

**U.S. Federal regulations** : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

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

**Clean Air Act (CAA) 112 regulated flammable substances**: propylene; Methyl Acetylene; 1,2-Propadiene; Isobutane; Butane; propane

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

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

**SARA 302/304**

**Composition/information on ingredients**

No products were found.

**SARA 304 RQ** : Not applicable.

**SARA 311/312**

**Classification** : Fire hazard
Sudden release of pressure

**Composition/information on ingredients**

No products were found.

**SARA 313**

| | Product name | CAS number | % |
|---|---|---|---|
| Form R - Reporting requirements | propylene | 115-07-1 | 40 - 50 |
| Supplier notification | propylene | 115-07-1 | 40 - 50 |

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.

**State regulations**

**Massachusetts** : The following components are listed: PROPYLENE (PROPENE); PROPYNE; ISOBUTANE; BUTANE; PROPANE

**New York** : None of the components are listed.

**New Jersey** : The following components are listed: PROPYLENE; 1-PROPENE; METHYL ACETYLENE; 1-PROPYNE; PROPADIENE; 1,2-PROPADIENE; Isobutane; PROPANE, 2-METHYL-; BUTANE; PROPANE

**Pennsylvania** : The following components are listed: 1-PROPENE; 1-PROPYNE; PROPANE, 2-METHYL-; BUTANE; PROPANE

**Canada inventory** : All components are listed or exempted.



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# Section 15. Regulatory information

## International regulations

**International lists** : **Australia inventory (AICS)**: All components are listed or exempted.
**China inventory (IECSC)**: Not determined.
**Japan inventory**: All components are listed or exempted.
**Korea inventory**: All components are listed or exempted.
**Malaysia Inventory (EHS Register)**: Not determined.
**New Zealand Inventory of Chemicals (NZIoC)**: All components are listed or exempted.
**Philippines inventory (PICCS)**: All components are listed or exempted.
**Taiwan inventory (CSNN)**: Not determined.

**Chemical Weapons Convention List Schedule I Chemicals** : Not listed

**Chemical Weapons Convention List Schedule II Chemicals** : Not listed

**Chemical Weapons Convention List Schedule III Chemicals** : Not listed

## Canada

**WHMIS (Canada)** : Class B1: Flammable Gases
Class A: Compressed Gas

CEPA DSL: Propylene; Isobutane; Butane; propadiene; Methyl Acetylene; Propane
CPR Compliance: This product has been classified with a hazard criteria of the CPR, and the MSDS contains all the information required for CPR.

# Section 16. Other information

**Canada Label requirements** : Class B1: Flammable Gases
Class A: Compressed Gas

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

| | | |
|---|---|---|
| Health | * | 1 |
| Flammability | | 4 |
| Physical hazards | | 1 |

**Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.**

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

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

**Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.**

# Section 16. Other information

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

## History

**Date of printing** : 5/20/2015.

**Date of issue/Date of revision** : 5/20/2015.

**Date of previous issue** : 10/28/2014.

**Version** : 0.02

**Key to abbreviations** : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United NationsACGIH – American Conference of Governmental Industrial Hygienists
AIHA – American Industrial Hygiene Association
CAS – Chemical Abstract Services
CEPA – Canadian Environmental Protection Act
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act (EPA)
CFR – United States Code of Federal Regulations
CPR – Controlled Products Regulations
DSL – Domestic Substances List
GWP – Global Warming Potential
IARC – International Agency for Research on Cancer
ICAO – International Civil Aviation Organisation
Inh – Inhalation
LC – Lethal concentration
LD – Lethal dosage
NDSL – Non-Domestic Substances List
NIOSH – National Institute for Occupational Safety and Health
TDG – Canadian Transportation of Dangerous Goods Act and Regulations
TLV – Threshold Limit Value
TSCA – Toxic Substances Control Act
WEEL – Workplace Environmental Exposure Level
WHMIS – Canadian Workplace Hazardous Material Information System

**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.**



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# Material Safety Data Sheet

## Section 1 – Manufacturer's Identification

| Company | Issue Date | Identification Number |
|---|---|---|
| Mueller Brass<br>2199 Lapeer Avenue<br>Port Huron, Michigan 48060 | 05/07/09 | |
| Trade Name (Common Name or Synonym)<br>Bronze Alloy | Emergency Phone Number<br>810-987-7770 | Information Phone # (EHS Manager)<br>616-794-4866 |
| Chemical Name | Formula | DOT Identification Number |

## Section 2 - Ingredients

Material or Compound

| Compound | CAS Number | % Composition by Weight |
|---|---|---|
| *Copper | 7440-50-8 | 88.65%-92.2% |
| *Aluminum | 7429-90-5 | 6.3%-7.6% |
| Silicon | 7440-21-3 | 1.5%-2.2% |

*Denotes a toxic chemical or chemicals subject to reporting requirements of Section 313 Emergency Planning and Community Right-To-Know Act of 1986 and 40CFR Part 372.

## Section 3 – Physical/Chemical Characteristics

| | | | |
|---|---|---|---|
| Boiling Point | N/A | Specific Gravity (H2O = 1) | 7.7 |
| Vapor Pressure (mm Hg) | N/A | Melting Point | 1,800-1,840 F |
| Vapor Density (Air = 1) | N\A | Evaporation Rate (Butyl Acetate = 1) | N/A |
| Solubility in Water N/A | | | |
| Appearance and Odor Bronze colored metal/no odor | | | |

## Section 4 – Fire and Explosion Hazard Data

| | | | |
|---|---|---|---|
| Flash Point (Method Used)<br>N/A | Flammable Limits N/A | LEL N/A | UEL N/A |
| Extinguishing Media N/A | | | |
| Special Fire Fighting Procedures N/A | | | |
| Unusual Fire and Explosion Hazards Water on hot material may cause splattering which could result in scalding. | | | |

## Section 5 – Reactivity Data

| | Unstable | Conditions to Avoid |
|---|---|---|

| | | | |
|---|---|---|---|
| Stability | Stable XXX | N/A | |
| Incompatibility (Materials to Avoid) Acids, oxidizers, ammonia. | | | |
| Hazardous Decomposition or Byproducts Exposure to Nitric Acid will cause generation of NOx fumes. | | | |
| Hazardous Polymerizations | May Occur | Conditions to Avoid | |
| | Will Not Occur XXX | N/A | |

## Section 6 – Health Hazard Data

| | | | |
|---|---|---|---|
| Route(s) of Entry | Inhalation? Yes | Skin? Yes | Ingestion ? Yes |
| Health Hazards (Acute and Chronic)<br>See page four of MSDS. | | | |
| | | | |
| Carcinogenicity | NTP? No | IARC Monographs? No | OSHA Regulated? No |
| Carcinogenicity | NTP? No | IARC Monographs? No | OSHA Regulated? No |
| Signs and Symptoms of Exposure See Page four of MSDS | | | |
| | | | |
| Medical Conditions<br>Generally Aggravated by Exposure Anyone with pre-existing respiratory disease should avoid overexposure to dust, fumes and respiratory irritants. | | | |
| | | | |
| Emergency and First Aid Procedures If exposed to excessive levels of dust or fumes, remove the victim to fresh air. Eyes and skin flush with water for at least 15 minutes and seek medical assistance immediately. | | | |
| | | | |
| | | | |

## Section 7 – Precautions for Safe Handling and Use

| |
|---|
| Steps to be Taken in Case Material is Released or Spilled Prevent exposure to acids, oxidizers, ammonia products. |
| |
| |
| Waste Disposal Method Material has high metals content, recycling is preferable.<br>Must be disposed of in accordance with applicable local, state and federal regulations. |
| |
| Precautions to be Taken in Handling and Storage Avoid releasing dust. |
| |
| Other Precautions |
| Wash hands before eating, drinking or tobacco use. Use P100 or N100 respirator |

## Section 8 – Control Measures

| | | |
|---|---|---|
| Respiratory Protection (Specify Type)<br>May be applicable if cutting, welding, grinding, etc. depending on exhaust. | | |
| Ventilation | Local Exhaust. If grinding, welding, etc. depending on exhaust | Special N/A |
| | Mechanical (General) N/A | Other N/A |

| | | |
|---|---|---|
| PPE | Gloves Recommended when handling metal. | Eye Safety glasses, Goggles if cutting, welding, brazing, grinding. Etc. |
| | Other N/A as shipped but protective clothing is determined by processing activity, i.e. casting, machining, etc. | |
| Work/ Hygiene Practices Wash hands before eating, drinking or tobacco consumption. Full body and hair shower ASAP to avoid exposing others. Normal washing of contaminated clothes and equipment is acceptable for decontamination. | | |

## Section 9 – Prepared By

| |
|---|
| Laura Shears<br>Mueller Brass<br>Safety / Environmental Manager<br>616.794.4866 |

## HEALTH HAZARD DATA

## HEALTH HAZARDS(SHORT TERM AND LONG TERM)

ALUMINUM: Chronic inhalation of aluminum fumes or dust may cause pulmonary fibrosis. aluminum fragments left in the cornea may cause irreversible eye damage. Aluminum has been implicated in Alzheimer's disease.

COPPER: Inhalation of copper fumes or dust may cause metal fume fever and damage to nasal membranes. The skin and hair may turn green in severe cases. Skin and eye irritation may occur. Skin sensitization may occur. Chronic exposure may cause Wilson's disease which is characterized by damage to the blood cells,

brain, kidneys, liver and pancreas. Copper fragments left in the cornea may cause cataracts. Copper fragments that penetrate the eye may cause irreversible eye damage if not removed immediately.

SILICON: Silicon itself poses little health risk. It has been shown to cause only minimal effects on the lungs if inhaled. Silicon dioxide formed by heating silicon in the presence of air may cause pulmonary fibrosis and silicosis in chronically exposed employees.

## SIGNS AND SYMPTOMS OF EXPOSURE

ALUMINUM: Pulmonary fibrosis is characterized by difficulty in breathing, coughing, shortness of breath, wheezing, and other respiratory symptoms.

COPPER: Metal fume fever is characterized by a dry irritated throat, chills, fever, and elevated white blood cell count, and general flu-like symptoms. Skin, eye, and nasal irritation and skin sensitization are characterized by pain, swelling, and reddening of the affected tissue. Wilson's disease is characterized by weakness, anemia, abdominal pain, and yellowing of the skin or jaundice.

SILICON: Pulmonary fibrosis is characterized by difficulty in breathing, coughing, shortness of breath, wheezing, and other respiratory symptoms.

Conforms to ANSI Z400.1-2004 Standard

# Material Safety Data Sheet

MURPHY OIL USA, INC.
200 Peach Street (71730)
P O Box 7000
El Dorado, AR 71731-7000
(870) 862-6411

**Gasoline (All Grades)**

## 1. Product and company identification

**Product name** : Gasoline (All Grades)
**Chemical name** : Mixture (C4 to C12 Hydrocarbon)
**Synonym** : Motor Gasoline, Petrol, Gas
**Chemical family** : Petroleum Hydrocarbon
**MSDS #** : 1027
**Material uses** : Motor Fuel.
**Supplier/Manufacturer** : Murphy Oil Corporation USA, Inc.
200 Peach Street
El Dorado, AR 71730
Tel: +1-870-862-6411
www.murphyoilcorp.com
**MSDS authored by** : KMK Regulatory Services Inc.
**In case of emergency** : CHEMTREC, U.S. : 1-800-424-9300 International: +1-703-527-3887

## 2. Hazards identification

**Emergency overview**

**Physical state** : Liquid.
**Color** : Clear (May Be Dyed).
**Odor** : Petroleum/Solvent.
**Signal word** : DANGER!
**Hazard statements** : EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. CAUSES EYE AND SKIN IRRITATION. HARMFUL OR FATAL IF SWALLOWED. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAN ENTER LUNGS AND CAUSE DAMAGE. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE CANCER. POSSIBLE DEVELOPMENTAL HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE ADVERSE DEVELOPMENTAL EFFECTS, BASED ON ANIMAL DATA.
**Precautionary measures** : Extremely flammable. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited. Material can accumulate static charges which may cause an incendiary electrical discharge.
Irritating to skin. If swallowed, may be aspirated and cause lung damage. May be irritating to the eyes, nose, throat, and lungs. May cause central nervous system depression. High-pressure injection under skin may cause serious damage. Prolonged and repeated exposure to benzene may cause serious injury to blood forming organs and is associated with anemia and to the later development of acute myelogenous leukemia (AML).
**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Potential acute health effects**

**Inhalation** : Minimally toxic. Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.
**Ingestion** : Aspiration hazard if swallowed. Can enter lungs and cause damage. May be harmful if swallowed.
**Skin** : Moderately irritating to skin with prolonged exposure. May be harmful in contact with skin.
**Eyes** : May cause mild, short-lasting discomfort to eyes.

**Potential chronic health effects**

**Chronic effects** : Contains material that can cause target organ damage.

# 2. Hazards identification

**Carcinogenicity** : Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : No known significant effects or critical hazards.

**Developmental effects** : Contains material which may cause developmental abnormalities, based on animal data.

**Fertility effects** : No known significant effects or critical hazards.

**Target organs** : Contains material which may cause damage to the following organs: blood, kidneys, the reproductive system, liver, gastrointestinal tract, upper respiratory tract, skin, eyes, bone marrow, central nervous system (CNS).

## Over-exposure signs/symptoms

**Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing

**Ingestion** : No specific data.

**Skin** : Adverse symptoms may include the following:
irritation
redness

**Eyes** : Adverse symptoms may include the following:
pain or irritation
watering
redness

**Medical conditions aggravated by over-exposure** : For the product itself: Laboratory animal studies have shown that prolonged and repeated inhalation exposure to light hydrocarbon vapors in the same boiling range as this product can produce adverse kidney effects in male rats. However, these effects were not observed in similar studies with female rats, male and female mice, or in limited studies with other animal species. Additionally, in a number of human studies, there was no clinical evidence of such effects at normal occupational levels. In 1991, The U.S. EPA determined that the male rat kidney is not useful for assessing human risk. Vapor concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic and may have other central nervous system effects. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema. Gasoline unleaded: Caused cancer in animal tests. Chronic inhalation studies resulted in liver tumors in female mice and kidney tumors in male rats. Neither result considered significant for human health risk assessment by the United States EPA and others. Did not cause mutations In Vitro or In Vivo. Negative in inhalation developmental studies and reproductive tox studies. Inhalation of high concentrations in animals resulted in reversible central nervous system depression, but no persistent toxic effect on the nervous system. Non-sensitizing in test animals. Caused nerve damage in humans from abusive use (sniffing).

**See toxicological information (Section 11)**

# 3. Composition/information on ingredients

## United States

| Name | CAS number | % |
|---|---|---|
| Gasoline | 86290-81-5 | 89 - 100 |
| Contains: | | |
| Ethyl Alcohol | 64-17-5 | < 11 |
| Xylene | 1330-20-7 | < 5 |
| Toluene | 108-88-3 | < 5 |
| Benzene | 71-43-2 | < 5 |
| Ethylbenzene | 100-41-4 | < 5 |
| n-Hexane | 110-54-3 | < 5 |
| Naphthalene | 91-20-3 | < 5 |
| 1,2,4-Trimethylbenzene | 95-63-6 | < 5 |

# 3. Composition/information on ingredients

| | | |
|---|---|---|
| Trimethylbenzene | 25551-13-7 | < 5 |

**Canada**

| Name | CAS number | % |
|---|---|---|
| Gasoline | 86290-81-5 | 89 - 100 |
| Contains: | | |
| Ethyl Alcohol | 64-17-5 | < 11 |
| Xylene | 1330-20-7 | < 5 |
| Toluene | 108-88-3 | < 5 |
| Benzene | 71-43-2 | < 5 |
| Ethylbenzene | 100-41-4 | < 5 |
| n-Hexane | 110-54-3 | < 5 |
| Naphthalene | 91-20-3 | < 5 |
| 1,2,4-Trimethylbenzene | 95-63-6 | < 5 |
| Trimethylbenzene | 25551-13-7 | < 5 |

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

# 4. First aid measures

**Eye contact** : Immediately flush eyes with plenty of water for at least 20 minutes, occasionally lifting the upper and lower eyelids. Get medical attention.

**Skin contact** : After contact with skin, wash immediately with plenty of soap and water. Get medical attention.

**Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention.

**Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Call medical doctor or poison control center immediately.

**Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

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

# 5. Fire-fighting measures

**Flammability of the product** : Extremely flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

**Extinguishing media**

**Suitable** : Use dry chemical, $CO_2$, water spray (fog) or foam.

**Not suitable** : Do not use water jet.

**Special exposure hazards** : Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous decomposition products** : Smoke, Fume, Aldehydes, Sulfur Oxides, Incomplete combustion products, Oxides of carbon.

**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.

# 6. Accidental release measures

**Personal precautions** : Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

**Environmental precautions** : Water polluting material. May be harmful to the environment if released in large quantities. Hazardous to aquatic environment. May cause long-term adverse effects in the aquatic environment. Prevent leaking substances from running into the aquatic environment or the sewage system.

**Methods for cleaning up**

**Spill** : 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). Use spark-proof tools and explosion-proof equipment. 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.

# 7. Handling and storage

**Handling** : Avoid breathing vapor or mist. Avoid contact with skin. Use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapors may be evolved from heated or agitated material. Do not siphon by mouth. Use with adequate ventilation. Use proper bonding and/or grounding procedures. Do not use as a cleaning solvent or other non-motor fuel uses. For use as a motor fuel only. It is dangerous and/or unlawful to put fuel into unapproved containers. Do not fill container while it is in or on a vehicle. Static electricity may ignite vapors and cause fire. Place container on ground when filling and keep nozzle in contact with container. Do not use electronic devices (including but not limited to cellular phones, computers, calculators, pagers or other electronic devices, etc.) in or around any fueling operation or storage area unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source).

**Storage** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Ample fire water supply should be available. A fixed sprinkler/deluge system is recommended. Handle containers with care. Open slowly in order to control possible pressure release. Outside or detached storage preferred. Storage containers should be grounded and bonded. Drums must be grounded and bonded and equipped with self-closing valves, pressure vacuum bungs and flame arresters.

# 8. Exposure controls/personal protection

## United States

| Ingredient | Exposure limits |
|---|---|
| Gasoline | **ACGIH TLV (United States, 2/2010).**<br>TWA: 300 ppm 8 hour(s).<br>TWA: 890 mg/m³ 8 hour(s).<br>STEL: 500 ppm 15 minute(s).<br>STEL: 1480 mg/m³ 15 minute(s). |
| Ethyl Alcohol | **ACGIH TLV (United States, 2/2010).**<br>STEL: 1000 ppm 15 minute(s).<br>**NIOSH REL (United States, 6/2009).**<br>TWA: 1900 mg/m³ 10 hour(s).<br>TWA: 1000 ppm 10 hour(s).<br>**OSHA PEL (United States, 6/2010).**<br>TWA: 1900 mg/m³ 8 hour(s).<br>TWA: 1000 ppm 8 hour(s). |
| Xylene | **ACGIH TLV (United States, 2/2010).**<br>STEL: 651 mg/m³ 15 minute(s).<br>STEL: 150 ppm 15 minute(s).<br>TWA: 434 mg/m³ 8 hour(s).<br>TWA: 100 ppm 8 hour(s).<br>**OSHA PEL (United States, 6/2010).**<br>TWA: 435 mg/m³ 8 hour(s).<br>TWA: 100 ppm 8 hour(s). |
| Toluene | **NIOSH REL (United States, 6/2009).**<br>STEL: 560 mg/m³ 15 minute(s).<br>STEL: 150 ppm 15 minute(s).<br>TWA: 375 mg/m³ 10 hour(s).<br>TWA: 100 ppm 10 hour(s).<br>**OSHA PEL Z2 (United States, 11/2006).**<br>AMP: 500 ppm 10 minute(s).<br>CEIL: 300 ppm<br>TWA: 200 ppm 8 hour(s).<br>**ACGIH TLV (United States, 2/2010).**<br>TWA: 20 ppm 8 hour(s). |
| Benzene | **ACGIH TLV (United States, 2/2010). Absorbed through skin.**<br>STEL: 8 mg/m³ 15 minute(s).<br>STEL: 2.5 ppm 15 minute(s).<br>TWA: 1.6 mg/m³ 8 hour(s).<br>TWA: 0.5 ppm 8 hour(s).<br>**NIOSH REL (United States, 6/2009).**<br>STEL: 1 ppm 15 minute(s).<br>TWA: 0.1 ppm 10 hour(s).<br>**OSHA PEL (United States, 6/2010).**<br>STEL: 5 ppm 15 minute(s).<br>TWA: 1 ppm 8 hour(s).<br>**OSHA PEL Z2 (United States, 11/2006).**<br>AMP: 50 ppm 10 minute(s).<br>CEIL: 25 ppm<br>TWA: 10 ppm 8 hour(s). |
| Ethylbenzene | **ACGIH TLV (United States, 2/2010).**<br>TWA: 20 ppm 8 hour(s).<br>**NIOSH REL (United States, 6/2009).**<br>STEL: 545 mg/m³ 15 minute(s).<br>STEL: 125 ppm 15 minute(s).<br>TWA: 435 mg/m³ 10 hour(s).<br>TWA: 100 ppm 10 hour(s).<br>**OSHA PEL (United States, 6/2010).**<br>TWA: 435 mg/m³ 8 hour(s).<br>TWA: 100 ppm 8 hour(s). |
| n-Hexane | **ACGIH TLV (United States, 2/2010). Absorbed through skin.**<br>TWA: 50 ppm 8 hour(s).<br>**NIOSH REL (United States, 6/2009).**<br>TWA: 180 mg/m³ 10 hour(s).<br>TWA: 50 ppm 10 hour(s).<br>**OSHA PEL (United States, 6/2010).**<br>TWA: 1800 mg/m³ 8 hour(s).<br>TWA: 500 ppm 8 hour(s). |
| Naphthalene | **ACGIH TLV (United States, 2/2010).**<br>STEL: 79 mg/m³ 15 minute(s).<br>STEL: 15 ppm 15 minute(s). |

# 8. Exposure controls/personal protection

| | |
|---|---|
| | TWA: 52 mg/m³ 8 hour(s).<br>TWA: 10 ppm 8 hour(s).<br>**NIOSH REL (United States, 6/2009).**<br>STEL: 75 mg/m³ 15 minute(s).<br>STEL: 15 ppm 15 minute(s).<br>TWA: 50 mg/m³ 10 hour(s).<br>TWA: 10 ppm 10 hour(s).<br>**OSHA PEL (United States, 6/2010).**<br>TWA: 50 mg/m³ 8 hour(s).<br>TWA: 10 ppm 8 hour(s). |
| 1,2,4-Trimethylbenzene | **ACGIH TLV (United States, 2/2010).**<br>TWA: 123 mg/m³ 8 hour(s).<br>TWA: 25 ppm 8 hour(s).<br>**NIOSH REL (United States, 6/2009).**<br>TWA: 125 mg/m³ 10 hour(s).<br>TWA: 25 ppm 10 hour(s). |
| Trimethylbenzene | **ACGIH TLV (United States, 2/2010).**<br>TWA: 123 mg/m³ 8 hour(s).<br>TWA: 25 ppm 8 hour(s).<br>**OSHA PEL 1989 (United States, 3/1989).**<br>TWA: 125 mg/m³ 8 hour(s).<br>TWA: 25 ppm 8 hour(s). |

## Canada

| Occupational exposure limits | | TWA (8 hours) | | | STEL (15 mins) | | | Ceiling | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ingredient | List name | ppm | mg/m³ | Other | ppm | mg/m³ | Other | ppm | mg/m³ | Other | Notations |
| Gasoline | US ACGIH 2/2010 | 300 | 890 | - | 500 | 1480 | - | - | - | - | |
| | AB 4/2009 | 300 | - | - | 500 | - | - | - | - | - | |
| | BC 9/2010 | 300 | - | - | 500 | - | - | - | - | - | |
| | ON 7/2010 | 300 | 890 | - | 500 | 1480 | - | - | - | - | |
| Ethyl Alcohol | US ACGIH 2/2010 | - | - | - | 1000 | - | - | - | - | - | |
| | AB 4/2009 | 1000 | 1880 | - | - | - | - | - | - | - | |
| | BC 9/2010 | - | - | - | 1000 | - | - | - | - | - | |
| | ON 7/2010 | - | - | - | 1000 | - | - | - | - | - | |
| | QC 6/2008 | 1000 | 1880 | - | - | - | - | - | - | - | |
| Xylene | US ACGIH 2/2010 | 100 | 434 | - | 150 | 651 | - | - | - | - | |
| | AB 4/2009 | 100 | 434 | - | 150 | 651 | - | - | - | - | |
| | BC 9/2010 | 100 | - | - | 150 | - | - | - | - | - | |
| | ON 7/2010 | 100 | 434 | - | 150 | 651 | - | - | - | - | |
| | QC 6/2008 | 100 | 434 | - | 150 | 651 | - | - | - | - | |
| Toluene | US ACGIH 2/2010 | 20 | - | - | - | - | - | - | - | - | |
| | AB 4/2009 | 50 | 188 | - | - | - | - | - | - | - | [1] |
| | BC 9/2010 | 20 | - | - | - | - | - | - | - | - | |
| | ON 7/2010 | 20 | - | - | - | - | - | - | - | - | |
| | QC 6/2008 | 50 | 188 | - | - | - | - | - | - | - | [1] |
| Benzene | US ACGIH 2/2010 | 0.5 | 1.6 | - | 2.5 | 8 | - | - | - | - | [1] |
| | AB 4/2009 | 0.5 | 1.6 | - | 2.5 | 8 | - | - | - | - | [1] |
| | BC 9/2010 | 0.5 | - | - | 2.5 | - | - | - | - | - | [1] |
| | ON 7/2010 | 0.5 | - | - | 2.5 | - | - | - | - | - | [1] |
| | QC 6/2008 | 1 | 3 | - | 5 | 15.5 | - | - | - | - | |
| Ethylbenzene | US ACGIH 2/2010 | 20 | - | - | - | - | - | - | - | - | |
| | AB 4/2009 | 100 | 434 | - | 125 | 543 | - | - | - | - | |
| | BC 9/2010 | 100 | - | - | 125 | - | - | - | - | - | |
| | ON 7/2010 | 100 | - | - | 125 | - | - | - | - | - | |
| | QC 6/2008 | 100 | 434 | - | 125 | 543 | - | - | - | - | |
| n-Hexane | US ACGIH 2/2010 | 50 | - | - | - | - | - | - | - | - | [1] |
| | AB 4/2009 | 50 | 176 | - | - | - | - | - | - | - | [1] |
| | BC 9/2010 | 20 | - | - | - | - | - | - | - | - | [1] |
| | ON 7/2010 | 50 | - | - | - | - | - | - | - | - | [1] |
| | QC 6/2008 | 50 | 176 | - | - | - | - | - | - | - | [1] |
| Naphthalene | US ACGIH 2/2010 | 10 | 52 | - | 15 | 79 | - | - | - | - | |
| | AB 4/2009 | 10 | 52 | - | 15 | 79 | - | - | - | - | [1] |
| | BC 9/2010 | 10 | - | - | 15 | - | - | - | - | - | [1] |
| | ON 7/2010 | 10 | 52 | - | 15 | 79 | - | - | - | - | |
| | QC 6/2008 | 10 | 52 | - | 15 | 79 | - | - | - | - | |
| 1,2,4-Trimethylbenzene | US ACGIH 2/2010 | 25 | 123 | - | - | - | - | - | - | - | |
| | AB 4/2009 | 25 | 123 | - | - | - | - | - | - | - | |
| | BC 9/2010 | 25 | - | - | - | - | - | - | - | - | |
| | ON 7/2010 | 25 | 123 | - | - | - | - | - | - | - | |
| | QC 6/2008 | 25 | 123 | - | - | - | - | - | - | - | |

# 8. Exposure controls/personal protection

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | US ACGIH 2/2010 | 25 | 123 | - | - | - | - | - | - | - | |
| | AB 4/2009 | 25 | 123 | - | - | - | - | - | - | - | |
| | BC 9/2010 | 25 | - | - | - | - | - | - | - | - | |
| | ON 7/2010 | 25 | 123 | - | - | - | - | - | - | - | |
| | QC 6/2008 | 25 | 123 | - | - | - | - | - | - | - | |

[1]Absorbed through skin.

**Consult local authorities for acceptable exposure limits.**

**Recommended monitoring procedures** : Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

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

**Hygiene measures** : Ensure that eyewash stations and safety showers are close to the workstation location. 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.

**Personal protection**

**Respiratory** : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: No special requirements under ordinary conditions of use and with adequate ventilation.

**Hands** : Use gloves appropriate for work or task being performed. Recommended: If prolonged or repeated contact is likely, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves.

**Eyes** : Safety eyewear should be used when there is a likelihood of exposure. Recommended: Safety glasses with side shields.

**Skin** : 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. Recommended: If prolonged or repeated contact is likely, chemical, and oil resistant clothing is recommended.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

# 9. Physical and chemical properties

**Physical state** : Liquid.

**Flash point** : Closed cup: <-40°C (<-40°F) [Pensky-Martens.]

**Burning time** : Not applicable.

**Burning rate** : Not applicable.

**Auto-ignition temperature** : >254°C (>489.2°F)

**Flammable limits** : Lower: 1.4%
Upper: 7.5%

**Color** : Clear (May Be Dyed).

**Odor** : Petroleum/Solvent.

**pH** : Not applicable.

**Boiling/condensation point** : 20°C (68°F)

**Melting/freezing point** : Not available.

**Relative density** : 0.72

**Vapor pressure** : 7 psi to 13.5 psi, Reid Vapor Pressure (RVP) [depending on the time of year]

**Vapor density** : 3 [Air = 1]

# 9. Physical and chemical properties

**Volatility** : Not available.

**Evaporation rate** : >10 (butyl acetate = 1)

**SADT** : Not available.

**Viscosity** : Kinematic (40°C (104°F)): <0.01 $cm^2/s$ (<1 cSt)

**Ionicity (in water)** : Not available.

**Dispersibility properties** : Not available.

**Solubility** : Negligible.

# 10. Stability and reactivity

**Chemical stability** : The product is stable.

**Conditions to avoid** : Keep away from heat, flame, sparks and other ignition sources.

**Incompatible materials** : Halogens, Strong Acids, Alkalies, Strong oxidizers.

**Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

**Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

# 11. Toxicological information

## Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|---|---|---|---|---|
| Gasoline | LD50 Oral | Rat | 13.6 g/kg | - |
| Ethyl Alcohol | LC50 Inhalation Vapor | Rat | 124700 mg/m3 | 4 hours |
| | LD50 Oral | Rat | 7 g/kg | - |
| Xylene | LC50 Inhalation Gas. | Rat | 5000 ppm | 4 hours |
| | LD50 Oral | Rat | 4300 mg/kg | - |
| Toluene | LC50 Inhalation Vapor | Rat | 49 g/m3 | 4 hours |
| | LD50 Oral | Rat | 636 mg/kg | - |
| Benzene | LD50 Oral | Rat | 930 mg/kg | - |
| Ethylbenzene | LD50 Dermal | Rabbit | >5000 mg/kg | - |
| | LD50 Oral | Rat | 3500 mg/kg | - |
| n-Hexane | LC50 Inhalation Gas. | Rat | 48000 ppm | 4 hours |
| | LD50 Oral | Rat | 15840 mg/kg | - |
| Naphthalene | LD50 Dermal | Rabbit | >20 g/kg | - |
| | LD50 Oral | Rat | 490 mg/kg | - |
| 1,2,4-Trimethylbenzene | LC50 Inhalation Vapor | Rat | 18000 mg/m3 | 4 hours |
| | LD50 Oral | Rat | 5 g/kg | - |
| Trimethylbenzene | LD50 Oral | Rat | 8970 mg/kg | - |

## Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|---|---|---|---|---|---|
| Ethyl Alcohol | Eyes - Moderate irritant | Rabbit | - | 100 microliters | - |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 20 milligrams | - |
| Xylene | Eyes - Mild irritant | Rabbit | - | 87 milligrams | - |
| | Eyes - Severe irritant | Rabbit | - | 24 hours 5 milligrams | - |
| | Skin - Mild irritant | Rat | - | 8 hours 60 microliters | - |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | 100 Percent | - |
| Toluene | Eyes - Mild irritant | Rabbit | - | 0.5 minutes 100 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 20 milligrams | - |
| | Eyes - Mild irritant | Rabbit | - | 870 Micrograms | - |
| | Eyes - Severe irritant | Rabbit | - | 24 hours 2 milligrams | - |
| | Skin - Mild irritant | Pig | - | 24 hours 250 microliters | - |

# 11. Toxicological information

| | | | | | |
|---|---|---|---|---|---|
| | Skin - Mild irritant | Rabbit | - | 435 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | 500 milligrams | - |
| Benzene | Eyes - Moderate irritant | Rabbit | - | 88 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 20 milligrams | - |
| Ethylbenzene | Eyes - Severe irritant | Rabbit | - | 500 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 15 milligrams | - |
| n-Hexane | Eyes - Mild irritant | Rabbit | - | 10 milligrams | - |
| Naphthalene | Skin - Mild irritant | Rabbit | - | 495 milligrams | - |
| | Skin - Severe irritant | Rabbit | - | 24 hours 0.05 Mililiters | - |
| Trimethylbenzene | Eyes - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 500 milligrams | - |

**Sensitizer**

**Skin** : There are no data available.

**Respiratory** : There are no data available.

**Carcinogenicity**

**Classification**

| Product/ingredient name | ACGIH | IARC | EPA | NIOSH | NTP | OSHA |
|---|---|---|---|---|---|---|
| Gasoline | A3 | 2B | - | + | - | - |
| Xylene | A4 | 3 | - | - | - | - |
| Toluene | A4 | 3 | - | - | - | - |
| Benzene | A1 | 1 | - | + | Proven. | + |
| Ethylbenzene | A3 | 2B | - | None. | - | - |
| Naphthalene | A4 | 2B | - | None. | Possible | - |

**IDLH** : Not available.

**Synergistic products** : Not available.

# 12. Ecological information

**Ecotoxicity** : Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Aquatic ecotoxicity**

| Product/ingredient name | Result | Species | Exposure |
|---|---|---|---|
| Ethyl Alcohol | Acute EC50 17.921 mg/L Marine water | Algae - Ulva pertusa | 96 hours |
| | Acute EC50 2000 ug/L Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 25500 ug/L Marine water | Crustaceans - Artemia franchiscana - Larvae | 48 hours |
| | Acute LC50 42000 ug/L Fresh water | Fish - Oncorhynchus mykiss | 4 days |
| | Chronic NOEC 0.375 ul/L Fresh water | Fish - Gambusia holbrooki - Larvae - 3 days | 12 weeks |
| Xylene | Acute IC50 10 mg/L | Algae | 72 hours |
| | Acute LC50 8500 ug/L Marine water | Crustaceans - Palaemonetes pugio | 48 hours |
| | Acute LC50 3300 to 4093 ug/L Fresh water | Fish - Oncorhynchus mykiss - 0.6 g | 96 hours |
| Toluene | Acute EC50 12500 ug/L Fresh water | Algae - Pseudokirchneriella subcapitata | 72 hours |
| | Acute EC50 11600 ug/L Fresh water | Crustaceans - Gammarus pseudolimnaeus - Adult - 9 mm - 0.017 g | 48 hours |
| | Acute EC50 6000 ug/L Fresh water | Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling) | 48 hours |
| | Acute LC50 5500 ug/L Fresh water | Fish - Oncorhynchus kisutch - Fry - 1 g | 96 hours |
| | Chronic NOEC 1000 ug/L Fresh water | Daphnia - Daphnia magna - <=24 hours | 21 days |
| Benzene | Acute EC50 29000 ug/L Fresh water | Algae - Pseudokirchneriella subcapitata | 72 hours |
| | Acute EC50 >1360000 ug/L Fresh water | Algae - Scenedesmus abundans | 96 hours |
| | Acute EC50 9230 ug/L Fresh water | Daphnia - Daphnia magna - Neonate - <=24 hours | 48 hours |
| | Acute LC50 21000 ug/L Marine water | Crustaceans - Artemia salina - Nauplii | 48 hours |
| | Acute LC50 5.28 ul/L Fresh water | Fish - Oncorhynchus gorbuscha - Fry | 96 hours |
| | Chronic NOEC 1.5 to 5.4 ul/L Marine water | Fish - Morone saxatilis - Juvenile (Fledgling, Hatchling, Weanling) - 18.1 cm - 3.39 g | 4 weeks |

# 12. Ecological information

| | | | |
|---|---|---|---|
| Ethylbenzene | Acute EC50 4600 ug/L Fresh water | Algae - Pseudokirchneriella subcapitata | 72 hours |
| | Acute EC50 3600 ug/L Fresh water | Algae - Pseudokirchneriella subcapitata | 96 hours |
| | Acute EC50 2970 ug/L Fresh water | Daphnia - Daphnia magna - Neonate - <=24 hours | 48 hours |
| | Acute LC50 >5200 ug/L Marine water | Crustaceans - Americamysis bahia - <24 hours | 48 hours |
| | Acute LC50 4200 ug/L Fresh water | Fish - Oncorhynchus mykiss | 96 hours |
| n-Hexane | Acute LC50 2500 to 2980 ug/L Fresh water | Fish - Pimephales promelas - 31 days - 20.4 mm - 0.123 g | 96 hours |
| Naphthalene | Acute EC50 1600 ug/L Fresh water | Daphnia - Daphnia magna - Neonate - <=24 hours | 48 hours |
| | Acute LC50 2350 ug/L Marine water | Crustaceans - Palaemonetes pugio | 48 hours |
| | Acute LC50 213 ug/L Fresh water | Fish - Melanotaenia fluviatilis - Larvae - 1 days | 96 hours |
| 1,2,4-Trimethylbenzene | Acute LC50 4910 ug/L Marine water | Crustaceans - Elasmopus pectinicrus - Adult | 48 hours |
| | Acute LC50 7720 to 8280 ug/L Fresh water | Fish - Pimephales promelas - 34 days | 96 hours |
| Trimethylbenzene | Acute LC50 5600 ug/L Marine water | Crustaceans - Palaemonetes pugio | 48 hours |

**Other adverse effects** : **Mobility**
More volatile component -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.
Less volatile component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.
**Persistence/degradability**
Majority of components -- Expected to be inherently biodegradable.
More volatile component -- Expected to degrade rapidly in air.
**Bioaccumulative potential**
Majority of components -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

# 13. Disposal considerations

**Waste disposal** : The generation of waste should be avoided or minimized wherever possible. This material and its container must be disposed of in a safe way. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Empty containers or liners may retain some product residues. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor.

**Disposal should be in accordance with applicable regional, national and local laws and regulations.**

**Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.**

# 14. Transport information

**International transport regulations**

| Regulatory information | UN number | Proper shipping name | Classes | PG* | Label | Additional information |
|---|---|---|---|---|---|---|
| **DOT Classification** | UN1203 | GASOLINE | 3 | II | | - |
| **TDG Classification** | UN1203 | GASOLINE | 3 | II | | **Special provisions** 17 |
| | | | | II | | |

# 14. Transport information

| | | | | | | |
|---|---|---|---|---|---|---|
| **IMDG Class** | UN1203 | GASOLINE. Marine pollutant | 3 | | | **Emergency schedules (EmS)** F-E, S-E |
| **IATA-DGR Class** | UN1203 | GASOLINE | 3 | II | | - |

PG* : Packing group

Exemption to the above classification may apply.

**AERG** : 128

# 15. Regulatory information

**United States**

**HCS Classification** : Flammable liquid
Irritating material
Carcinogen
Target organ effects

**U.S. Federal regulations** : **United States inventory (TSCA 8b)**: All components are listed or exempted.

**SARA 302/304/311/312 extremely hazardous substances**: No products were found.
**SARA 302/304 emergency planning and notification**: No products were found.
**SARA 302/304/311/312 hazardous chemicals**: Gasoline; Ethyl Alcohol; Xylene; Toluene; Benzene; Ethylbenzene; n-Hexane; Naphthalene; 1,2,4-Trimethylbenzene; Trimethylbenzene
**SARA 311/312 MSDS distribution - chemical inventory - hazard identification**: Gasoline: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Ethyl Alcohol: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Xylene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Toluene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Benzene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Ethylbenzene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; n-Hexane: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Naphthalene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; 1,2,4-Trimethylbenzene: Fire hazard, Delayed (chronic) health hazard; Trimethylbenzene: Fire hazard, Immediate (acute) health hazard

**Clean Water Act (CWA) 307**: Toluene; Benzene; Ethylbenzene; Naphthalene

**Clean Water Act (CWA) 311**: Xylene; Toluene; Benzene; Ethylbenzene; Naphthalene

**Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)** : Listed

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

# 15. Regulatory information

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Listed

## SARA 313

| | Product name | CAS number | Concentration |
|---|---|---|---|
| **Form R - Reporting requirements** | Xylene<br>Toluene<br>Benzene<br>Ethylbenzene<br>n-Hexane<br>Naphthalene<br>1,2,4-Trimethylbenzene | 1330-20-7<br>108-88-3<br>71-43-2<br>100-41-4<br>110-54-3<br>91-20-3<br>95-63-6 | 1 - 5<br>1 - 5<br>1 - 5<br>1 - 5<br>1 - 5<br>1 - 5<br>1 - 5 |
| **Supplier notification** | Xylene<br>Toluene<br>Benzene<br>Ethylbenzene<br>n-Hexane<br>Naphthalene<br>1,2,4-Trimethylbenzene | 1330-20-7<br>108-88-3<br>71-43-2<br>100-41-4<br>110-54-3<br>91-20-3<br>95-63-6 | 1 - 5<br>1 - 5<br>1 - 5<br>1 - 5<br>1 - 5<br>1 - 5<br>1 - 5 |

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

## State regulations

**Massachusetts** : The following components are listed: Ethyl Alcohol; Xylene; Toluene; Benzene; Ethylbenzene; n-Hexane; Naphthalene; 1,2,4-Trimethylbenzene; Trimethylbenzene

**New York** : The following components are listed: Xylene; Toluene; Benzene; Ethylbenzene; n-Hexane; Naphthalene

**New Jersey** : The following components are listed: Ethyl Alcohol; Xylene; Toluene; Benzene; Ethylbenzene; n-Hexane; Naphthalene; 1,2,4-Trimethylbenzene; Trimethylbenzene

**Pennsylvania** : The following components are listed: Gasoline; Ethyl Alcohol; Xylene; Toluene; Benzene; Ethylbenzene; n-Hexane; Naphthalene; 1,2,4-Trimethylbenzene; Trimethylbenzene

## California Prop. 65

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

| Ingredient name | Cancer | Reproductive | No significant risk level | Maximum acceptable dosage level |
|---|---|---|---|---|
| Toluene | No. | Yes. | No. | 7000 µg/day (ingestion)<br>13000 µg/day (inhalation) |
| Benzene | Yes. | Yes. | 6.4 µg/day (ingestion)<br>13 µg/day (inhalation) | 24 µg/day (ingestion)<br>49 µg/day (inhalation) |
| Ethylbenzene | Yes. | No. | 41 µg/day (ingestion)<br>54 µg/day (inhalation) | No. |
| Naphthalene | Yes. | No. | Yes. | No. |

## Canada

**WHMIS (Canada)** : Class B-2: Flammable liquid
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

## Canadian lists

**Canadian NPRI** : The following components are listed: Ethyl alcohol; Xylene; Toluene; Benzene; Ethylbenzene; n-Hexane; Naphthalene; 1,2,4-Trimethylbenzene; Trimethylbenzene

**CEPA Toxic substances** : The following components are listed: Benzene; Naphthalene

**Canada inventory** : All components are listed or exempted.

# 15. Regulatory information

**This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.**

## International regulations

**International lists** : **Australia inventory (AICS)**: All components are listed or exempted.
**China inventory (IECSC)**: Not determined.
**Japan inventory**: Not determined.
**Korea inventory**: All components are listed or exempted.
**New Zealand Inventory of Chemicals (NZIoC)**: All components are listed or exempted.
**Philippines inventory (PICCS)**: All components are listed or exempted.

# 16. Other information

**Label requirements** : EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. CAUSES EYE AND SKIN IRRITATION. HARMFUL OR FATAL IF SWALLOWED. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAN ENTER LUNGS AND CAUSE DAMAGE. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE CANCER. POSSIBLE DEVELOPMENTAL HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE ADVERSE DEVELOPMENTAL EFFECTS, BASED ON ANIMAL DATA.

**Hazardous Material Information System (U.S.A.)** : **Health :** 1 * **Flammability :** 3 **Physical hazards :** 0

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

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

**National Fire Protection Association (U.S.A.)** : **Health :** 1 **Flammability :** 3 **Instability :** 0

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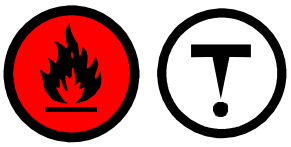
**Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with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

## Canada

**WHMIS (Canada)** :



**References** : ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - 29CFR Part1910.1200 OSHA MSDS Requirements. - 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987. Hazardous Products Act "Ingredient Disclosure List" - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005.

## History

**Date of issue mm/dd/yyy** : 08/15/2011
**Date of previous issue** : 06/15/2010
**Version** : 2

# 16. Other information

**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

SDS 0656

## Section 1 -- PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
Nokorode Regular Paste Flux

PRODUCT CODES
14000, 14003, 14010, 14020, 14030

CHEMICAL FAMILY
Organic/Inorganic

USE
Soldering Flux

| HMIS CODES | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Reactivity | 0 |
| PPI | B |

MANUFACTURER'S NAME
The RectorSeal Corporation
2601 Spenwick Drive
Houston, Texas 77055 USA

EMERGENCY TELEPHONE NO.
Chemtrec 24 Hours
(800)424-9300 USA
(703)527-3887 International

DATE OF VALIDATION
January 23, 2015

TECHNICAL SERVICE TELEPHONE NO.
(800)231-3345 or (713)263-8001

DATE OF PREPARATION
May 2, 2012

## Section 2 -- HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
OSHA Hazards
Irritant
GHS CLASSIFICATION
PHYSICAL HAZARDS: None
HEALTH HAZARDS
Acute Toxicity:
Oral: Not Classified
Dermal: Not Classified
Inhalation: Not Classified
Skin Corrosion/Irritation: Not Classified
Serious Eye Damage/Eye Irritation: Not Classified
Respiratory or Skin Sensitization: Not Classified
Germ Cell Mutagenicity: Not Classified
Carcinogenicity: Not Classified
Reproductive Toxicology: Not Classified
Target Organ Systemic Toxicity - Single Exposure: Not Classified
Target Organ Systemic Toxicity - Repeated Exposure: Not Classified
Aspiration Toxicity: Not Classified

ENVIRONMENTAL HAZARDS
Hazardous to the Aquatic Environment: Not Classified
Acute aquatic toxicity: Not Classified
Chronic aquatic toxicity: Not Classified
Bioaccumulation potential: Not Classified
Rapid degradability: Not Classified

GHS Label elements, including precautionary statements
Pictogram: Irritant

Signal Word: Warning
Hazard Statements:
H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
Precautionary Statements:
P102 - Keep out of reach of children.
P262 - Do not get in eyes, on skin, or on clothing.
P264 - Wash hands thoroughly after handling.
P281 Use personal protective equipment as required.

---

SUMMARY OF ACUTE HAZARDS

Irritation to respiratory system from fumes evolved during soldering. Eye contact may cause intense irritation and injury.

ROUTE OF EXPOSURE, SIGNS AND SYMPTOMS

INHALATION

Irritation to respiratory system from fumes evolved during soldering.

EYE CONTACT

Contact may cause intense irritation and injury.

SKIN CONTACT

May cause skin irritation.

INGESTION

Nausea, vomiting, irritation to digestive system.

SUMMARY OF CHRONIC HAZARDS

Short term effects to liver and kidneys can occur. Chemical irritation from continued skin contact can occur. Continuous industrial use in small unventilated areas may result in sufficient inhalation of solder and flux fumes to cause lung damage and irritation of respiratory tract.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Individuals with pre-existing or chronic diseases of the eyes, skin, respiratory system, cardiovascular system, gastrointestinal system, liver, or kidneys may have increased susceptibility to excessive exposure.

==========

## Section 3 -- COMPOSITION/INFORMATION ON INGREDIENTS

---

INGREDIENT: Zinc Chloride
PERCENTAGE BY WEIGHT: 10-25
CAS#: 7646-85-7
EC#: 231-592-0

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INGREDIENT: Ammonium Chloride
PERCENTAGE BY WEIGHT: 10-25
CAS#: 12125-02-9
EC#: 235-186-4

---

INGREDIENT: Petrolatum
PERCENTAGE BY WEIGHT: 70-90
CAS#: 8009-03-8
EC#: 232-373-2

==========

## Section 4 -- FIRST AID MEASURES

---

| | |
|---|---|
| If INHALED: | If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential. |
| If on SKIN: | Immediately wash with soap and water. Remove and wash |

any contaminated clothing.

If in EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention if irritation persists.

If SWALLOWED: If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

## Section 5 -- FIRE FIGHTING MEASURES

EXTINGUSING MEDIA

Foam, dry chemical, carbon dioxide or water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained full face piece breathing apparatus and other protective clothing. Hazardous decomposition products possible (see Section 10). May release ZnO and HCl fumes.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Heat may build up pressure and rupture closed containers.

## Section 6 -- ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Wipe up spills to prevent footing hazard. Avoid flushing into sewers, drains, waterways and soil. Wear protective clothing during clean up.

## Section 7 -- HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Keep container closed and upright when not in use. Store flux at ambient conditions. Wash thoroughly after handling to remove all residue.

OTHER PRECAUTIONS: Avoid prolonged or repeated contact with skin or clothing.

Empty containers may contain residues; treat as if full and observe all products precautions. Do not reuse empty containers.

## Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION

| INGREDIENT | UNITS |
|---|---|
| Zinc Chloride | |
| ACGIH TLV | 1 mg/m3 |
| OSHA PEL | 1 mg/m3 |
| Ammonium Chloride | |
| ACGIH TLV | 10 mg/m3 |
| OSHA PEL | 10 mg/m3 |
| Petrolatum | |
| ACGIH TLV | N/D |
| OSHA PEL | N/D |

RESPIRATORY PROTECTION (SPECIFY TYPE): In confined, poorly ventilated areas, use NIOSH/MSHA approved air purifying or supplied air respirators during soldering operations until fumes have dissipated.

VENTILATION - LOCAL EXHAUST: Acceptable

SPECIAL: N/A

MECHANICAL (GENERAL): Acceptable

OTHER: N/A

PROTECTIVE GLOVES: Wear rubber gloves.

EYE PROTECTION: Safety glasses (ANSI Z-87.1 or equivalent)

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Coveralls recommended.

WORK/HYGIENIC PRACTICES: Where use can result in skin contact, wash exposed

areas thoroughly before eating, drinking, smoking, or leaving work area.
Launder contaminated clothing before reuse.

## Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| BOILING POINT: | N/A |
| SPECIFIC GRAVITY (H20 = 1): | 1.06 |
| VAPOR PRESSURE (mm Hg): | < 0.01 @ 68 F (20 C) |
| MELTING POINT: | 120-150 F (52-66 C) |
| VAPOR DENSITY (AIR = 1): | N/A |
| EVAPORATION RATE (ETHYL ACETATE = 1): | N/A |
| APPEARANCE/ODOR: | Tan / Petroleum Odor |
| SOLUBILITY IN WATER: | Insoluble |
| VOLATILE ORGANIC COMPOUNDS(VOC)Content (Theoretical Percentage By Weight): | 0% or (0 g/L) |
| Flash POINT | >400 F (204 C) SETA CC |
| LOWER EXPLOSION LIMIT | N/D |
| UPPER EXPLOSION LIMIT | N/D |

## Section 10 -- STABILITY AND REACTIVITY

STABILITY: Stable
CONDITIONS TO AVOID: None
INCOMPATIBILITY (MATERIALS TO AVOID): None known
HAZARDOUS DECOMPOSITION PRODUCTS: Toxic fumes of zinc, chlorine, and HCL may be evolved during soldering.
HAZARDOUS POLYMERIZATION: Will not occur.

## Section 11 -- TOXICOLOGY INFORMATION

CHRONIC HEALTH HAZARDS
No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

TOXICOLOGY DATA
Ingredient Name

Zinc Chloride
Oral-Rat LD50:350 mg/kg
Inhalation-Rat LCLo:1960 mg/m3/10M

Ammonium Chloride
Oral-Rat LD50:1650 mg/kg
Inhalation-Rat LC50:N/D

Petrolatum
Oral-Rat LD50:N/D
Inhalation-Rat LC50:N/D

## Section 12 -- Ecological Information

ECOLOGICAL DATA
Ingredient Name

Zinc Chloride

| | |
|---|---|
| Food Chain Concentration Potential | None |
| WATERFOWL TOXICITY | N/A |
| BOD | None |

AQUATIC TOXICITY: 7.2 ppm/96 hr/medium bluegill/TLm

Ammonium Chloride

| | |
|---|---|
| Food Chain Concentration Potential | None |
| WATERFOWL TOXICITY | N/A |
| BOD | N/A |
| AQUATIC TOXICITY: 6 ppm/96 hr/sunfish TLm | |

Petrolatum

| | |
|---|---|
| Food Chain Concentration Potential | N/D |
| WATERFOWL TOXICITY | N/D |
| BOD | N/D |
| AQUATIC TOXICITY: | N/D |

## Section 13 -- DISPOSAL CONSIDERATIONS

Waste Classification: Non-regulated solid waste
Disposal Method: Approved landfill
Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with Federal, State, and Local regulation regarding pollution.

## Section 14 -- TRANSPORTATION INFORMATION

| | |
|---|---|
| DOT: | Non-Regulated |
| OCEAN (IMDG): | Non-Regulated |
| AIR (IATA): | Non-Regulated |
| WHMIS (CANADA): | Non-Regulated |

## Section 15 -- REGULATORY INFORMATION

REGULATORY DATA
Ingredient Name

Zinc Chloride

| | |
|---|---|
| SARA 313 | Yes |
| TSCA Inventory | Yes |
| CERCLA RQ | 1000 lb. |
| RCRA Code | N/A |

Ammonium Chloride

| | |
|---|---|
| SARA 313 | No |
| TSCA Inventory | Yes |
| CERCLA RQ | N/A |
| RCRA Code | N/A |

Petrolatum

| | |
|---|---|
| SARA 313 | No |
| TSCA Inventory | Yes |
| CERCLA RQ | N/A |
| RCRA Code | N/A |

## Section 16 -- OTHER INFORMATION

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). The information herein is given in good faith, but no warranty, expressed or implied is made. Consult RectorSeal for further
information: (713) 263-8001

# SAFETY DATA SHEET

## 1. Identification

**Product identifier** **Oatey No. 5 Paste Flux**

**Other means of identification**

**SDS number** 1610E

**Synonyms** Part Numbers: No 5- 30011, 30013, 30014, 30038, 30041, 48307, 48420, 48421, 48422, 48423, 53017, 53060, 53200, Hot Weather- 30062

**Recommended use** Joining Copper Pipes. Joining Copper Tubing.

**Recommended restrictions** None known.

**Manufacturer/Importer/Supplier/Distributor information**


**Company Name** Oatey Co.

**Address** 4700 West 160th St.
Cleveland, OH 44135

**Telephone** 216-267-7100

**E-mail** info@oatey.com


**Transport Emergency** Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)

**Emergency First Aid** 1-877-740-5015

**Contact person** MSDS Coordinator

## 2. Hazard(s) identification

**Physical hazards** Not classified.

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 1B |
| Serious eye damage/eye irritation | Category 1 |

**OSHA defined hazards** Not classified.

**Label elements**

**Signal word** Danger

**Hazard statement** Causes severe skin burns and eye damage.

**Precautionary statement**

**Prevention** Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dusts or mists.

**Response** If swallowed: Rinse mouth. Do not induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Storage** Store locked up.

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

**Hazard(s) not otherwise classified (HNOC)** None known.

**Supplemental information**

Not applicable.

## 3. Composition/information on ingredients

**Mixtures**

| Chemical name | CAS number | % |
|---|---|---|
| Petrolatum | 8009-03-8 | 60-100 |

| | | |
|---|---|---|
| Zinc chloride | 7646-85-7 | 10-30 |
| Water | 7732-18-5 | 3-7 |
| Ammonium chloride | 12125-02-9 | 1-5 |

## 4. First-aid measures

**Inhalation**
If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.

**Skin contact**
Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

**Eye contact**
Immediately flush eyes with plenty of water for at least 15 minutes. Continue rinsing. Call a physician or poison control center immediately. Remove contact lenses, if present and easy to do.

**Ingestion**
Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

**Most important symptoms/effects, acute and delayed**
Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

**Indication of immediate medical attention and special treatment needed**
Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

**General information**
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 5. Fire-fighting measures

**Suitable extinguishing media**
Water spray. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

**Unsuitable extinguishing media**
Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical**
During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters**
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Fire fighting equipment/instructions**
Use water spray to cool unopened containers.

**Specific methods**
Use standard firefighting procedures and consider the hazards of other involved materials.

**General fire hazards**
No unusual fire or explosion hazards noted.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up**
Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike far ahead of spill for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

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

## 7. Handling and storage

**Precautions for safe handling**
Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid prolonged exposure. Do not get this material on clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**
Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

**Occupational exposure limits**

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

| Components | Type | Value | Form |
|---|---|---|---|
| Petrolatum (CAS 8009-03-8) | PEL | 5 mg/m3 | Mist. |
| Zinc chloride (CAS 7646-85-7) | PEL | 1 mg/m3 | Fume. |

**US. ACGIH Threshold Limit Values**

| Components | Type | Value | Form |
|---|---|---|---|
| Ammonium chloride (CAS 12125-02-9) | STEL | 20 mg/m3 | Fume. |
| | TWA | 10 mg/m3 | Fume. |
| Petrolatum (CAS 8009-03-8) | TWA | 5 mg/m3 | Inhalable fraction. |
| Zinc chloride (CAS 7646-85-7) | STEL | 2 mg/m3 | Fume. |
| | TWA | 1 mg/m3 | Fume. |

**US. NIOSH: Pocket Guide to Chemical Hazards**

| Components | Type | Value | Form |
|---|---|---|---|
| Ammonium chloride (CAS 12125-02-9) | STEL | 20 mg/m3 | Fume. |
| | TWA | 10 mg/m3 | Fume. |
| Petrolatum (CAS 8009-03-8) | STEL | 10 mg/m3 | Mist. |
| | TWA | 5 mg/m3 | Mist. |
| Zinc chloride (CAS 7646-85-7) | STEL | 2 mg/m3 | Fume. |
| | TWA | 1 mg/m3 | Fume. |

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Exposure guidelines** Occupational Exposure Limits are not relevant to the current physical form of the product.

**Appropriate engineering controls** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Wear safety glasses with side shields (or goggles) and a face shield.

**Skin protection**

**Hand protection** Wear appropriate chemical resistant gloves.

**Other** Wear appropriate chemical resistant clothing.

**Respiratory protection** In case of insufficient ventilation, wear suitable respiratory equipment.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

**Appearance**

**Physical state** Solid.

**Form** Solid. Paste.

**Color** Not available.

**Odor** Not available.

**Odor threshold** Not available.

**pH** Not available.

| | |
|---|---|
| **Melting point/freezing point** | Not available. |
| **Initial boiling point and boiling range** | 638 °F (336.67 °C) |
| **Flash point** | 540.0 °F (282.2 °C) |
| **Evaporation rate** | Not available. |
| **Flammability (solid, gas)** | Not available. |
| **Upper/lower flammability or explosive limits** | |
| **Flammability limit - lower (%)** | Not available. |
| **Flammability limit - upper (%)** | Not available. |
| **Explosive limit - lower (%)** | Not available. |
| **Explosive limit - upper (%)** | Not available. |
| **Vapor pressure** | Not available. |
| **Vapor density** | > 1 |
| **Relative density** | 1.1 |
| **Solubility(ies)** | |
| **Solubility (water)** | Insoluble |
| **Partition coefficient (n-octanol/water)** | Not available. |
| **Auto-ignition temperature** | Not available. |
| **Decomposition temperature** | Not available. |
| **Viscosity** | 20000 - 40000 cP |
| **Other information** | |
| **VOC (Weight %)** | 29 g/l 3% by weight |

## 10. Stability and reactivity

| | |
|---|---|
| **Reactivity** | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| **Chemical stability** | Material is stable under normal conditions. |
| **Possibility of hazardous reactions** | No dangerous reaction known under conditions of normal use. |
| **Conditions to avoid** | Contact with incompatible materials. |
| **Incompatible materials** | Strong oxidizing agents. |
| **Hazardous decomposition products** | No hazardous decomposition products are known. |

## 11. Toxicological information

**Information on likely routes of exposure**

| | |
|---|---|
| **Inhalation** | Prolonged inhalation may be harmful. May cause irritation to the respiratory system. |
| **Skin contact** | Causes severe skin burns. |
| **Eye contact** | Causes serious eye damage. |
| **Ingestion** | Causes digestive tract burns. |
| **Symptoms related to the physical, chemical and toxicological characteristics** | Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. |

**Information on toxicological effects**

| | |
|---|---|
| **Acute toxicity** | Not available. |
| **Skin corrosion/irritation** | Causes severe skin burns and eye damage. |
| **Serious eye damage/eye irritation** | Causes serious eye damage. |
| **Respiratory or skin sensitization** | |
| **Respiratory sensitization** | Not available. |
| **Skin sensitization** | This product is not expected to cause skin sensitization. |

**Germ cell mutagenicity** No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity** None known.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Petrolatum (CAS 8009-03-8) 3 Not classifiable as to carcinogenicity to humans.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**Reproductive toxicity** This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure** Not classified.

**Specific target organ toxicity - repeated exposure** Not classified.

**Aspiration hazard** Not available.

**Chronic effects** Prolonged inhalation may be harmful.

## 12. Ecological information

**Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential** No data available.

**Mobility in soil** No data available.

**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## 13. Disposal considerations

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## 14. Transport information

**DOT**

Not regulated as dangerous goods.

**IATA**

Not regulated as dangerous goods.

**IMDG**

Not regulated as dangerous goods.

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

## 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

| | |
|---|---|
| Ammonium chloride (CAS 12125-02-9) | LISTED |
| Zinc chloride (CAS 7646-85-7) | LISTED |

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

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

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** No

**SARA 313 (TRI reporting)**

| Chemical name | CAS number | % by wt. |
|---|---|---|
| Zinc chloride | 7646-85-7 | 10-30 |
| Ammonium chloride | 12125-02-9 | 1-5 |

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations**

**US. Massachusetts RTK - Substance List**

Ammonium chloride (CAS 12125-02-9)
Petrolatum (CAS 8009-03-8)
Zinc chloride (CAS 7646-85-7)

**US. New Jersey Worker and Community Right-to-Know Act**

Ammonium chloride (CAS 12125-02-9)
Petrolatum (CAS 8009-03-8)
Zinc chloride (CAS 7646-85-7)

**US. Pennsylvania Worker and Community Right-to-Know Law**

Ammonium chloride (CAS 12125-02-9)
Petrolatum (CAS 8009-03-8)
Zinc chloride (CAS 7646-85-7)

**US. Rhode Island RTK**

Ammonium chloride (CAS 12125-02-9)
Zinc chloride (CAS 7646-85-7)

**US. California Proposition 65**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**International Inventories**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | No |
| Korea | Existing Chemicals List (ECL) | Yes |

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

| | |
|---|---|
| **Issue date** | 26-October-2014 |
| **Revision date** | 19-February-2015 |
| **Version #** | 03 |
| **HMIS® ratings** | Health: 3<br>Flammability: 0<br>Physical hazard: 0 |
| **Disclaimer** | The information in the sheet was written based on the best knowledge and experience currently available. Oatey Co. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for use, handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. |

# SAFETY DATA SHEET

## 1. Identification

**Product identifier** **Oatey No. 95 Tinning Flux**

**Other means of identification**

**SDS number** 1611E

**Synonyms** Part Numbers: 30372, 30373, 30374, 30375, 53201, 48356, 48430, 48432, 48433

**Recommended use** Joining Copper Pipes. Joining Copper Tubing.

**Recommended restrictions** None known.

**Manufacturer/Importer/Supplier/Distributor information**

**Company Name** Oatey Co.

**Address** 4700 West 160th St.
Cleveland, OH 44135

**Telephone** 216-267-7100

**E-mail** info@oatey.com

**Transport Emergency** Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)

**Emergency First Aid** 1-877-740-5015

**Contact person** MSDS Coordinator

## 2. Hazard(s) identification

**Physical hazards** Not classified.

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 1B |
| Serious eye damage/eye irritation | Category 1 |

**OSHA defined hazards** Not classified.

**Label elements**

**Signal word** Danger

**Hazard statement** Causes severe skin burns and eye damage.

**Precautionary statement**

**Prevention** Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dusts or mists.

**Response** If swallowed: Rinse mouth. Do not induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Storage** Store locked up.

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

**Hazard(s) not otherwise classified (HNOC)** None known.

**Supplemental information**

Not applicable.

## 3. Composition/information on ingredients

**Mixtures**

| Chemical name | CAS number | % |
|---|---|---|
| Petrolatum | 8009-03-8 | 60-70 |

| | | |
|---|---|---|
| Zinc chloride | 7646-85-7 | 10-30 |
| Tin | 7440-31-5 | 4-8 |
| Ammonium chloride | 12125-02-9 | 1-5 |
| Bismuth | 7440-69-9 | 0-1 |
| Copper | 7440-50-8 | 0-1 |

## 4. First-aid measures

**Inhalation**
If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.

**Skin contact**
Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

**Eye contact**
Immediately flush eyes with plenty of water for at least 15 minutes. Continue rinsing. Call a physician or poison control center immediately. Remove contact lenses, if present and easy to do.

**Ingestion**
Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

**Most important symptoms/effects, acute and delayed**
Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

**Indication of immediate medical attention and special treatment needed**
Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

**General information**
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 5. Fire-fighting measures

**Suitable extinguishing media**
Water spray. Water fog. Foam. Dry chemical powder. Carbon dioxide ($CO_2$).

**Unsuitable extinguishing media**
Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical**
During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters**
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Fire fighting equipment/instructions**
Use water spray to cool unopened containers.

**Specific methods**
Use standard firefighting procedures and consider the hazards of other involved materials.

**General fire hazards**
No unusual fire or explosion hazards noted.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up**
Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike far ahead of spill for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

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

## 7. Handling and storage

**Precautions for safe handling**
Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid prolonged exposure. Do not get this material on clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**
Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

**Occupational exposure limits**

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

| Components | Type | Value | Form |
|---|---|---|---|
| Petrolatum (CAS 8009-03-8) | PEL | 5 mg/m3 | Mist. |
| Tin (CAS 7440-31-5) | PEL | 2 mg/m3 | |
| Zinc chloride (CAS 7646-85-7) | PEL | 1 mg/m3 | Fume. |

**US. ACGIH Threshold Limit Values**

| Components | Type | Value | Form |
|---|---|---|---|
| Ammonium chloride (CAS 12125-02-9) | STEL | 20 mg/m3 | Fume. |
| | TWA | 10 mg/m3 | Fume. |
| Petrolatum (CAS 8009-03-8) | TWA | 5 mg/m3 | Inhalable fraction. |
| Tin (CAS 7440-31-5) | TWA | 2 mg/m3 | |
| Zinc chloride (CAS 7646-85-7) | STEL | 2 mg/m3 | Fume. |
| | TWA | 1 mg/m3 | Fume. |

**US. NIOSH: Pocket Guide to Chemical Hazards**

| Components | Type | Value | Form |
|---|---|---|---|
| Ammonium chloride (CAS 12125-02-9) | STEL | 20 mg/m3 | Fume. |
| | TWA | 10 mg/m3 | Fume. |
| Petrolatum (CAS 8009-03-8) | STEL | 10 mg/m3 | Mist. |
| | TWA | 5 mg/m3 | Mist. |
| Tin (CAS 7440-31-5) | TWA | 2 mg/m3 | |
| Zinc chloride (CAS 7646-85-7) | STEL | 2 mg/m3 | Fume. |
| | TWA | 1 mg/m3 | Fume. |

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Exposure guidelines** Occupational Exposure Limits are not relevant to the current physical form of the product.

**Appropriate engineering controls** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Wear safety glasses with side shields (or goggles) and a face shield.

**Skin protection**

**Hand protection** Wear appropriate chemical resistant gloves.

**Other** Wear appropriate chemical resistant clothing.

**Respiratory protection** In case of insufficient ventilation, wear suitable respiratory equipment.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

**Appearance**

**Physical state** Solid.

**Form** Solid. Paste.

**Color** Yellow.

**Odor** Slight.

| | |
|---|---|
| **Odor threshold** | Not available. |
| **pH** | Not available. |
| **Melting point/freezing point** | Not available. |
| **Initial boiling point and boiling range** | 638.6 °F (337 °C) |
| **Flash point** | 539.6 °F (282.0 °C) |
| **Evaporation rate** | Not available. |
| **Flammability (solid, gas)** | Not available. |
| **Upper/lower flammability or explosive limits** | |
| **Flammability limit - lower (%)** | Not available. |
| **Flammability limit - upper (%)** | Not available. |
| **Explosive limit - lower (%)** | Not available. |
| **Explosive limit - upper (%)** | Not available. |
| **Vapor pressure** | Not available. |
| **Vapor density** | > 1 |
| **Relative density** | Not available. |
| **Solubility(ies)** | |
| **Solubility (water)** | Negligible |
| **Partition coefficient (n-octanol/water)** | Not available. |
| **Auto-ignition temperature** | Not available. |
| **Decomposition temperature** | Not available. |
| **Viscosity** | Not available. |

## 10. Stability and reactivity

| | |
|---|---|
| **Reactivity** | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| **Chemical stability** | Material is stable under normal conditions. |
| **Possibility of hazardous reactions** | No dangerous reaction known under conditions of normal use. |
| **Conditions to avoid** | Contact with incompatible materials. |
| **Incompatible materials** | Strong oxidizing agents. |
| **Hazardous decomposition products** | No hazardous decomposition products are known. |

## 11. Toxicological information

**Information on likely routes of exposure**

| | |
|---|---|
| **Inhalation** | Prolonged inhalation may be harmful. May cause irritation to the respiratory system. |
| **Skin contact** | Causes severe skin burns. |
| **Eye contact** | Causes serious eye damage. |
| **Ingestion** | Causes digestive tract burns. |
| **Symptoms related to the physical, chemical and toxicological characteristics** | Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. |

**Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Skin corrosion/irritation** | Causes severe skin burns and eye damage. |
| **Serious eye damage/eye irritation** | Causes serious eye damage. |

**Respiratory or skin sensitization**

| | |
|---|---|
| **Respiratory sensitization** | Not available. |
| **Skin sensitization** | This product is not expected to cause skin sensitization. |

| | |
|---|---|
| **Germ cell mutagenicity** | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |
| **Carcinogenicity** | None known. |

**IARC Monographs. Overall Evaluation of Carcinogenicity**

| | |
|---|---|
| Petrolatum (CAS 8009-03-8) | 3 Not classifiable as to carcinogenicity to humans. |

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

| | |
|---|---|
| **Reproductive toxicity** | This product is not expected to cause reproductive or developmental effects. |
| **Specific target organ toxicity - single exposure** | Not classified. |
| **Specific target organ toxicity - repeated exposure** | Not classified. |
| **Aspiration hazard** | Not available. |
| **Chronic effects** | Prolonged inhalation may be harmful. |

## 12. Ecological information

| | |
|---|---|
| **Ecotoxicity** | The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. |
| **Persistence and degradability** | No data is available on the degradability of this product. |
| **Bioaccumulative potential** | No data available. |
| **Mobility in soil** | No data available. |
| **Other adverse effects** | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |

## 13. Disposal considerations

| | |
|---|---|
| **Disposal instructions** | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| **Local disposal regulations** | Dispose in accordance with all applicable regulations. |
| **Hazardous waste code** | The waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| **Waste from residues / unused products** | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| **Contaminated packaging** | Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. |

## 14. Transport information

**DOT**

Not regulated as dangerous goods.

**IATA**

Not regulated as dangerous goods.

**IMDG**

Not regulated as dangerous goods.

| | |
|---|---|
| **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** | Not applicable. |

## 15. Regulatory information

| | |
|---|---|
| **US federal regulations** | This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.<br>All components are on the U.S. EPA TSCA Inventory List. |

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

| | |
|---|---|
| Ammonium chloride (CAS 12125-02-9) | LISTED |
| Zinc chloride (CAS 7646-85-7) | LISTED |

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

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

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** No

**SARA 313 (TRI reporting)**

| Chemical name | CAS number | % by wt. |
|---|---|---|
| Zinc chloride | 7646-85-7 | 10-30 |
| Ammonium chloride | 12125-02-9 | 1-5 |

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations**

**US. Massachusetts RTK - Substance List**

Ammonium chloride (CAS 12125-02-9)
Petrolatum (CAS 8009-03-8)
Tin (CAS 7440-31-5)
Zinc chloride (CAS 7646-85-7)

**US. New Jersey Worker and Community Right-to-Know Act**

Ammonium chloride (CAS 12125-02-9)
Petrolatum (CAS 8009-03-8)
Tin (CAS 7440-31-5)
Zinc chloride (CAS 7646-85-7)

**US. Pennsylvania Worker and Community Right-to-Know Law**

Ammonium chloride (CAS 12125-02-9)
Petrolatum (CAS 8009-03-8)
Tin (CAS 7440-31-5)
Zinc chloride (CAS 7646-85-7)

**US. Rhode Island RTK**

Ammonium chloride (CAS 12125-02-9)
Zinc chloride (CAS 7646-85-7)

**US. California Proposition 65**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**International Inventories**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | No |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

| | |
|---|---|
| **Issue date** | 27-October-2014 |
| **Revision date** | 19-February-2015 |
| **Version #** | 03 |
| **HMIS® ratings** | Health: 3<br>Flammability: 0<br>Physical hazard: 0 |
| **Disclaimer** | The information in the sheet was written based on the best knowledge and experience currently available. Oatey Co. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for use, handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. |

**Material Name: OATEY PVC HEAVY DUTY CLEAR or GRAY CEMENT - LO-VOC FORMULA**

## * * * Section 1 - Product and Company Identification * * *

**MSDS #1102E**

**Part Numbers:** Clear 30850, 30863, 30876(TV), 30882, 31008(TV), 31011, 31950, 31951, 31952, 31953 Gray 30349, 31093, 31094, 31095, 31105, 31118, 31978, 31979, 31980, 31981, 32050, 32051, 32052, 32210, 32211

### Manufacturer Information

Oatey Co.
4700 West 160th Street
Cleveland, OH 44135

Phone: 216-267-7100

For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1- 703-527-3887.

## * * * Section 2 - Hazards Identification * * *

### GHS Classification:

Flammable Liquids - Category 2
Acute Toxicity Oral - Category 4
Acute Toxicity Dermal - Category 4
Acute Toxicity Inhalation - Category 4
Eye Damage/Irritation - Category 2A
Carcinogenicity - Category 2
Specific Target Organ Toxicity Single Exposure - Category 3

### GHS LABEL ELEMENTS

### Symbol(s)

### Signal Word

Danger

### Hazard Statements

Highly flammable liquid and vapor.
Harmful if swallowed.
Harmful in contact with skin.
Harmful if inhaled.
Causes serious eye irritation.
Contains a chemical classified by the US EPA as a suspected possible carcinogen.
May cause respiratory irritation.
May cause drowsiness or dizziness.

## Precautionary Statements

**Prevention**

Keep away from heat/sparks/open flames and hot surfaces. - No smoking.
Keep container tightly closed.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/eye protection/face protection.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing fume/gas/mist/vapors.
Use only outdoors or in a well-ventilated area.

**Response**

If on skin (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
If swallowed: Call a poison center or doctor/physician if you feel unwell. Rinse mouth. Do not induce vomiting.
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 in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
If exposed or concerned: Get medical advice/attention.
In case of fire: Use dry chemical, CO2, or foam to extinguish fire.

**Storage**

Store in a well-ventilated place. Keep cool.
Store locked up.

**Disposal**

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

# * * * Section 3 - Composition / Information on Ingredients * * *

| CAS # | Component | Percent |
|---|---|---|
| 109-99-9 | Tetrahydrofuran | 40-60 |
| 108-94-1 | Cyclohexanone | 10-25 |
| 67-64-1 | Acetone | 10-25 |
| 9002-86-2 | PVC (Chloroethylene, polymer) | 12-20 |
| 78-93-3 | Methyl ethyl ketone | 5-15 |
| 112945-52-5 | Silica, amorphous, fumed, crystalline-free | 1-4 |

# * * * Section 4 - First Aid Measures * * *

## First Aid: Eyes

If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.

### First Aid: Skin

Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with hand cleaner or baby oil.

### First Aid: Ingestion

DO NOT INDUCE VOMITING. Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

### First Aid: Inhalation

If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

## * * * Section 5 - Fire Fighting Measures * * *

### General Fire Hazards

See Section 9 for Flammability Properties.

Highly flammable liquid and vapor. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

### Hazardous Combustion Products

Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

### Extinguishing Media

Use dry chemical, $CO_2$, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.

### Unsuitable Extinguishing Media

None.

### Fire Fighting Equipment/Instructions

Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

## * * * Section 6 - Accidental Release Measures * * *

### Recovery and Neutralization

Stop leak if it can be done without risk.

### Materials and Methods for Clean-Up

Remove all sources of ignition and ventilate area. Soak up spill with an inert absorbent such as sand, earth or other non-combusting material. Put absorbent material in covered, labeled metal containers.

### Emergency Measures

Isolate area. Keep unnecessary personnel away.

### Personal Precautions and Protective Equipment

Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high.

### Environmental Precautions

Prevent liquid from entering watercourses, sewers and natural waterways.

### Prevention of Secondary Hazards

None

## * * * Section 7 - Handling and Storage * * *

### Handling Procedures

Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use. Other: "Empty" containers retain product residue and can be hazardous. Follow all SDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

### Storage Procedures

Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.

### Incompatibilities

Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.

## * * * Section 8 - Exposure Controls / Personal Protection * * *

### Component Exposure Limits

**Tetrahydrofuran (109-99-9)**

ACGIH: 50 ppm TWA
100 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 200 ppm TWA; 590 mg/m3 TWA
NIOSH: 200 ppm TWA; 590 mg/m3 TWA
250 ppm STEL; 735 mg/m3 STEL

**Cyclohexanone (108-94-1)**

ACGIH: 20 ppm TWA
50 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 50 ppm TWA; 200 mg/m3 TWA
NIOSH: 25 ppm TWA; 100 mg/m3 TWA
Potential for dermal absorption

**Acetone (67-64-1)**

ACGIH: 500 ppm TWA
750 ppm STEL
OSHA: 1000 ppm TWA; 2400 mg/m3 TWA
NIOSH: 250 ppm TWA; 590 mg/m3 TWA

**PVC (Chloroethylene, polymer) (9002-86-2)**

ACGIH: 1 mg/m3 TWA (respirable fraction)

**Methyl ethyl ketone (78-93-3)**

ACGIH: 200 ppm TWA
300 ppm STEL
OSHA: 200 ppm TWA; 590 mg/m3 TWA
NIOSH: 200 ppm TWA; 590 mg/m3 TWA
300 ppm STEL; 885 mg/m3 STEL

### Engineering Measures

Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.

### Personal Protective Equipment: Respiratory

For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

### Personal Protective Equipment: Hands

Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

### Personal Protective Equipment: Eyes

Safety glasses with side shields or safety goggles.

### Personal Protective Equipment: Skin and Body

No additional protective equipment needed.

## * * * Section 9 - Physical & Chemical Properties * * *

| | | | |
|---|---|---|---|
| **Appearance:** | Clear or Gray | **Odor:** | Ether-like |
| **Physical State:** | Liquid | **pH:** | NA |
| **Vapor Pressure:** | 145 mmHg @ 20°C | **Vapor Density:** | 2.5 |
| **Boiling Point:** | 151°F (66°C) | **Melting Point:** | NA |
| **Solubility (H2O):** | Negligible | **Specific Gravity:** | 0.94 +/- 0.02 @ 20°C |
| **Evaporation Rate:** | (BUAC = 1) = 5.5 - 8.0 | **VOC:** | 80-84% Maximum 510 g/L per SCAQMD Test Method 316A. |
| **Octanol/H2O Coeff.:** | ND | **Flash Point:** | 14-23°F (-10 to -5°C) |
| **Flash Point Method:** | CCCFP | **Upper Flammability Limit (UFL):** | 11.8 |
| **Lower Flammability Limit (LFL):** | 1.8 | **Burning Rate:** | ND |
| **Auto Ignition:** | ND | | |

## * * * Section 10 - Chemical Stability & Reactivity Information * * *

### Chemical Stability

This is a stable material.

### Hazardous Reaction Potential

Will not occur.

### Conditions to Avoid

Avoid heat, sparks, flames and other sources of ignition.

### Incompatible Products

Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics.

### Hazardous Decomposition Products

Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

# * * * Section 11 - Toxicological Information * * *

## Acute Toxicity

### Component Analysis - LD50/LC50

**Tetrahydrofuran (109-99-9)**
Inhalation LC50 Rat 53.9 mg/L 4 h; Inhalation LC50 Rat 180 mg/L 1 h; Oral LD50 Rat 1650 mg/kg

**Cyclohexanone (108-94-1)**
Inhalation LC50 Rat 10.7 mg/L 4 h; Inhalation LC50 Rat 8000 ppm 4 h; Oral LD50 Rat 800 mg/kg; Dermal LD50 Rabbit 948 mg/kg

**Acetone (67-64-1)**
Oral LD50 Rat 5800 mg/kg

**Methyl ethyl ketone (78-93-3)**
Inhalation LC50 Mouse 32 g/m3 4 h; Oral LD50 Rat 2737 mg/kg; Dermal LD50 Rabbit 6480 mg/kg

**Silica, amorphous, fumed, crystalline-free (112945-52-5)**
Oral LD50 Rat 3160 mg/kg

## Potential Health Effects: Skin Corrosion Property/Stimulativeness

May cause irritation with redness, itching and pain. Methyl ethyl ketone and cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.

## Potential Health Effects: Eye Critical Damage/ Stimulativeness

Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.

## Potential Health Effects: Ingestion

Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

## Potential Health Effects: Inhalation

Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

## Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

## Generative Cell Mutagenicity

Cyclohexanone has been positive in bacterial and mammalian assays. Acetone, methyl ethyl ketone and tetrahydrofuran are generally thought not to be mutagenic.

## Carcinogenicity

### A: General Product Information

In 2012 USEPA Integrated Risk Information System (IRIS) reviewed a two species inhalation lifetime study on THF conducted by NTP (1998). Male rats developed renal tumors and female mice developed liver tumors while neither the female rats nor the male mice showed similar results. Because the carcinogenic mechanisms could not be identified clearly in either species for either tumor, the EPA determined that the male rat and female mouse findings are relevant to the assessment of carcinogenic potential in humans. Therefore, the IRIS review concludes that these data in aggregate indicate that there is "suggestive evidence of carcinogenic potential" following exposure to THF by all routes of exposure.

### B: Component Carcinogenicity

**Tetrahydrofuran (109-99-9)**

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

**Cyclohexanone (108-94-1)**

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

**Acetone (67-64-1)**

ACGIH: A4 - Not Classifiable as a Human Carcinogen

**PVC (Chloroethylene, polymer) (9002-86-2)**

ACGIH: A4 - Not Classifiable as a Human Carcinogen
IARC: Supplement 7 [1987]; Monograph 19 [1979] (Group 3 (not classifiable))

**Silica, amorphous, fumed, crystalline-free (112945-52-5)**

IARC: Monograph 68 [1997] (listed under Amorphous silica) (Group 3 (not classifiable))

## Reproductive Toxicity

Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.

## Specified Target Organ General Toxicity: Single Exposure

May cause respiratory irritation. Inhalation of high concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

## Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ toxicity repeat exposure effects.

## Aspiration Respiratory Organs Hazard

Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

# * * * Section 12 - Ecological Information * * *

## Ecotoxicity

### A: General Product Information

This product is not expected to be toxic to aquatic organisms.

### B: Component Analysis - Ecotoxicity - Aquatic Toxicity

**Tetrahydrofuran (109-99-9)**

| Test & Species | Conditions |
|---|---|

| | | |
|---|---|---|
| 96 Hr LC50 Pimephales promelas | 1970-2360 mg/L [flow-through] | |
| 96 Hr LC50 Pimephales promelas | 2700-3600 mg/L [static] | |
| 24 Hr EC50 Daphnia magna | 5930 mg/L | |

**Cyclohexanone (108-94-1)**

| Test & Species | | Conditions |
|---|---|---|
| 96 Hr LC50 Pimephales promelas | 481-578 mg/L [flow-through] | |
| 96 Hr LC50 Pimephales promelas | 8.9 mg/L | |
| 96 Hr EC50 Chlorella vulgaris | 20 mg/L | |
| 24 Hr EC50 Daphnia magna | 800 mg/L | |

**Acetone (67-64-1)**

| Test & Species | | Conditions |
|---|---|---|
| 96 Hr LC50 Oncorhynchus mykiss | 4.74 - 6.33 mL/L | |
| 96 Hr LC50 Pimephales promelas | 6210 - 8120 mg/L [static] | |
| 96 Hr LC50 Lepomis macrochirus | 8300 mg/L | |
| 48 Hr EC50 Daphnia magna | 10294 - 17704 mg/L [Static] | |
| 48 Hr EC50 Daphnia magna | 12600 - 12700 mg/L | |

**Methyl ethyl ketone (78-93-3)**

| Test & Species | | Conditions |
|---|---|---|
| 96 Hr LC50 Pimephales promelas | 3130-3320 mg/L [flow-through] | |
| 48 Hr EC50 Daphnia magna | >520 mg/L | |
| 48 Hr EC50 Daphnia magna | 5091 mg/L | |
| 48 Hr EC50 Daphnia magna | 4025 - 6440 mg/L [Static] | |

## Persistence/Degradability

No information available for the product.

## Bioaccumulation

No information available for the product.

## Mobility in Soil

No information available for the product.

# * * * Section 13 - Disposal Considerations * * *

## Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

**US EPA Waste Number & Descriptions**

**Component Waste Numbers**

**Tetrahydrofuran (109-99-9)**
RCRA: waste number U213 (Ignitable waste)

**Cyclohexanone (108-94-1)**
RCRA: waste number U057 (Ignitable waste)

**Acetone (67-64-1)**
RCRA: waste number U002 (Ignitable waste)

**Methyl ethyl ketone (78-93-3)**
RCRA: waste number U159 (Ignitable waste, Toxic waste)
200.0 mg/L regulatory level

## Disposal of Contaminated Containers or Packaging

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

# * * * Section 14 - Transportation Information * * *

## DOT Information

**For Greater than 1 liter (0.3 gal):**
**Shipping Name:** Adhesives
**UN #:** 1133 **Hazard Class:** 3 **Packing Group:** II
**Required Label(s):** Flammable Liquid

**For Less than 1 liter (0.3 gal):**
**Shipping Name:** Consumer Commodity, ORM-D

## IMDG Information

**For Greater than 1 liter (0.3 gal):**
**Shipping Name:** Adhesives
**UN #:** 1133 **Hazard Class:** 3 **Packing Group:** II
**Required Label(s):** Flammable Liquid

**For Less than 1 liter (0.3 gal):**
**Shipping Name:** Adhesives
**UN #:** 1133 **Hazard Class:** 3 **Packing Group:** II
**Required Label(s):** None (Limited Quantites are expected from labeling)

# * * * Section 15 - Regulatory Information * * *

## Regulatory Information

**US Federal Regulations**

**Component Analysis**

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

**Tetrahydrofuran (109-99-9)**

CERCLA: 1000 lb final RQ; 454 kg final RQ

**Cyclohexanone (108-94-1)**

CERCLA: 5000 lb final RQ; 2270 kg final RQ

**Acetone (67-64-1)**

CERCLA: 5000 lb final RQ; 2270 kg final RQ

**Methyl ethyl ketone (78-93-3)**

CERCLA: 5000 lb final RQ; 2270 kg final RQ

**State Regulations**

**Component Analysis - State**

The following components appear on one or more of the following state hazardous substances lists:

| Component | CAS | CA | MA | MN | NJ | PA | RI |
|---|---|---|---|---|---|---|---|
| Tetrahydrofuran | 109-99-9 | Yes | Yes | Yes | Yes | Yes | No |
| Cyclohexanone | 108-94-1 | Yes | Yes | Yes | Yes | Yes | No |
| Acetone | 67-64-1 | Yes | Yes | Yes | Yes | Yes | No |
| PVC (Chloroethylene, polymer) | 9002-86-2 | No | No | No | Yes | No | No |
| Methyl ethyl ketone | 78-93-3 | Yes | Yes | Yes | Yes | Yes | No |

This product contains trace amounts of chemicals known to the State of California to cause cancer. Under normal use conditions, exposure to these chemicals at levels above the State of California "No Significant Risk Level" (NSRL) are unlikely. The use of proper personal protective equipment (PPE) and ventilation guidelines noted in Section 8 will minimize exposure to these chemicals.

**Component Analysis - WHMIS IDL**

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

| Component | CAS # | Minimum Concentration |
|---|---|---|
| Tetrahydrofuran | 109-99-9 | 1 % |
| Cyclohexanone | 108-94-1 | 0.1 % |
| Acetone | 67-64-1 | 1 % |
| Methyl ethyl ketone | 78-93-3 | 1 % |

**Additional Regulatory Information**

**Component Analysis - Inventory**

| Component | CAS # | TSCA | CAN | EEC |
|---|---|---|---|---|
| Tetrahydrofuran | 109-99-9 | Yes | DSL | EINECS |
| Cyclohexanone | 108-94-1 | Yes | DSL | EINECS |
| Acetone | 67-64-1 | Yes | DSL | EINECS |
| PVC (Chloroethylene, polymer) | 9002-86-2 | Yes | DSL | ELINCS |
| Methyl ethyl ketone | 78-93-3 | Yes | DSL | EINECS |
| Silica, amorphous, fumed, crystalline-free | 112945-52-5 | No | DSL | No |

## * * * Section 16 - Other Information * * *

### Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.

### Literature References

None

### Other Information

NFPA and HMIS:
NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None
HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:
The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, we cannot give any guarantees regarding information from other sources, and expressly do not make warranties, nor assume any liability for its use.

End of Sheet

**Material Name: OATEY PVC HEAVY DUTY CLEAR or GRAY CEMENT - LO-VOC FORMULA**

## * * * Section 1 - Product and Company Identification * * *

**MSDS #1102E**

**Part Numbers:** Clear 30850, 30863, 30876(TV), 30882, 31008(TV), 31011, 31950, 31951, 31952, 31953 Gray 30349, 31093, 31094, 31095, 31105, 31118, 31978, 31979, 31980, 31981, 32050, 32051, 32052, 32210, 32211

### Manufacturer Information

Oatey Co.
4700 West 160th Street
Cleveland, OH 44135

Phone: 216-267-7100

For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1- 703-527-3887.

## * * * Section 2 - Hazards Identification * * *

### GHS Classification:

Flammable Liquids - Category 2
Acute Toxicity Oral - Category 4
Acute Toxicity Dermal - Category 4
Acute Toxicity Inhalation - Category 4
Eye Damage/Irritation - Category 2A
Carcinogenicity - Category 2
Specific Target Organ Toxicity Single Exposure - Category 3

### GHS LABEL ELEMENTS

### Symbol(s)

### Signal Word

Danger

### Hazard Statements

Highly flammable liquid and vapor.
Harmful if swallowed.
Harmful in contact with skin.
Harmful if inhaled.
Causes serious eye irritation.
Contains a chemical classified by the US EPA as a suspected possible carcinogen.
May cause respiratory irritation.
May cause drowsiness or dizziness.

## Precautionary Statements

**Prevention**

Keep away from heat/sparks/open flames and hot surfaces. - No smoking.
Keep container tightly closed.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/eye protection/face protection.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing fume/gas/mist/vapors.
Use only outdoors or in a well-ventilated area.

**Response**

If on skin (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
If swallowed: Call a poison center or doctor/physician if you feel unwell. Rinse mouth. Do not induce vomiting.
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 in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
If exposed or concerned: Get medical advice/attention.
In case of fire: Use dry chemical, CO2, or foam to extinguish fire.

**Storage**

Store in a well-ventilated place. Keep cool.
Store locked up.

**Disposal**

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

# * * * Section 3 - Composition / Information on Ingredients * * *

| CAS # | Component | Percent |
|---|---|---|
| 109-99-9 | Tetrahydrofuran | 40-60 |
| 108-94-1 | Cyclohexanone | 10-25 |
| 67-64-1 | Acetone | 10-25 |
| 9002-86-2 | PVC (Chloroethylene, polymer) | 12-20 |
| 78-93-3 | Methyl ethyl ketone | 5-15 |
| 112945-52-5 | Silica, amorphous, fumed, crystalline-free | 1-4 |

# * * * Section 4 - First Aid Measures * * *

## First Aid: Eyes

If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.

### First Aid: Skin

Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with hand cleaner or baby oil.

### First Aid: Ingestion

DO NOT INDUCE VOMITING. Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

### First Aid: Inhalation

If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

## * * * Section 5 - Fire Fighting Measures * * *

### General Fire Hazards

See Section 9 for Flammability Properties.

Highly flammable liquid and vapor. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

### Hazardous Combustion Products

Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

### Extinguishing Media

Use dry chemical, $CO_2$, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.

### Unsuitable Extinguishing Media

None.

### Fire Fighting Equipment/Instructions

Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

## * * * Section 6 - Accidental Release Measures * * *

### Recovery and Neutralization

Stop leak if it can be done without risk.

### Materials and Methods for Clean-Up

Remove all sources of ignition and ventilate area. Soak up spill with an inert absorbent such as sand, earth or other non-combusting material. Put absorbent material in covered, labeled metal containers.

### Emergency Measures

Isolate area. Keep unnecessary personnel away.

### Personal Precautions and Protective Equipment

Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high.

### Environmental Precautions

Prevent liquid from entering watercourses, sewers and natural waterways.

### Prevention of Secondary Hazards

None

## * * * Section 7 - Handling and Storage * * *

### Handling Procedures

Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use. Other: "Empty" containers retain product residue and can be hazardous. Follow all SDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

### Storage Procedures

Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.

### Incompatibilities

Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.

## * * * Section 8 - Exposure Controls / Personal Protection * * *

### Component Exposure Limits

**Tetrahydrofuran (109-99-9)**

ACGIH: 50 ppm TWA
100 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 200 ppm TWA; 590 mg/m3 TWA
NIOSH: 200 ppm TWA; 590 mg/m3 TWA
250 ppm STEL; 735 mg/m3 STEL

**Cyclohexanone (108-94-1)**

ACGIH: 20 ppm TWA
50 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 50 ppm TWA; 200 mg/m3 TWA
NIOSH: 25 ppm TWA; 100 mg/m3 TWA
Potential for dermal absorption

**Acetone (67-64-1)**

ACGIH: 500 ppm TWA
750 ppm STEL
OSHA: 1000 ppm TWA; 2400 mg/m3 TWA
NIOSH: 250 ppm TWA; 590 mg/m3 TWA

**PVC (Chloroethylene, polymer) (9002-86-2)**

ACGIH: 1 mg/m3 TWA (respirable fraction)

**Methyl ethyl ketone (78-93-3)**

ACGIH: 200 ppm TWA
300 ppm STEL
OSHA: 200 ppm TWA; 590 mg/m3 TWA
NIOSH: 200 ppm TWA; 590 mg/m3 TWA
300 ppm STEL; 885 mg/m3 STEL

### Engineering Measures

Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.

### Personal Protective Equipment: Respiratory

For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

### Personal Protective Equipment: Hands

Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

### Personal Protective Equipment: Eyes

Safety glasses with side shields or safety goggles.

### Personal Protective Equipment: Skin and Body

No additional protective equipment needed.

## * * * Section 9 - Physical & Chemical Properties * * *

| | | | |
|---|---|---|---|
| **Appearance:** | Clear or Gray | **Odor:** | Ether-like |
| **Physical State:** | Liquid | **pH:** | NA |
| **Vapor Pressure:** | 145 mmHg @ 20°C | **Vapor Density:** | 2.5 |
| **Boiling Point:** | 151°F (66°C) | **Melting Point:** | NA |
| **Solubility (H2O):** | Negligible | **Specific Gravity:** | 0.94 +/- 0.02 @ 20°C |
| **Evaporation Rate:** | (BUAC = 1) = 5.5 - 8.0 | **VOC:** | 80-84% Maximum 510 g/L per SCAQMD Test Method 316A. |
| **Octanol/H2O Coeff.:** | ND | **Flash Point:** | 14-23°F (-10 to -5°C) |
| **Flash Point Method:** | CCCFP | **Upper Flammability Limit (UFL):** | 11.8 |
| **Lower Flammability Limit (LFL):** | 1.8 | **Burning Rate:** | ND |
| **Auto Ignition:** | ND | | |

## * * * Section 10 - Chemical Stability & Reactivity Information * * *

### Chemical Stability

This is a stable material.

### Hazardous Reaction Potential

Will not occur.

### Conditions to Avoid

Avoid heat, sparks, flames and other sources of ignition.

### Incompatible Products

Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics.

### Hazardous Decomposition Products

Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

# * * * Section 11 - Toxicological Information * * *

## Acute Toxicity

### Component Analysis - LD50/LC50

**Tetrahydrofuran (109-99-9)**
Inhalation LC50 Rat 53.9 mg/L 4 h; Inhalation LC50 Rat 180 mg/L 1 h; Oral LD50 Rat 1650 mg/kg

**Cyclohexanone (108-94-1)**
Inhalation LC50 Rat 10.7 mg/L 4 h; Inhalation LC50 Rat 8000 ppm 4 h; Oral LD50 Rat 800 mg/kg; Dermal LD50 Rabbit 948 mg/kg

**Acetone (67-64-1)**
Oral LD50 Rat 5800 mg/kg

**Methyl ethyl ketone (78-93-3)**
Inhalation LC50 Mouse 32 g/m3 4 h; Oral LD50 Rat 2737 mg/kg; Dermal LD50 Rabbit 6480 mg/kg

**Silica, amorphous, fumed, crystalline-free (112945-52-5)**
Oral LD50 Rat 3160 mg/kg

## Potential Health Effects: Skin Corrosion Property/Stimulativeness

May cause irritation with redness, itching and pain. Methyl ethyl ketone and cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.

## Potential Health Effects: Eye Critical Damage/ Stimulativeness

Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.

## Potential Health Effects: Ingestion

Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

## Potential Health Effects: Inhalation

Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

## Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

## Generative Cell Mutagenicity

Cyclohexanone has been positive in bacterial and mammalian assays. Acetone, methyl ethyl ketone and tetrahydrofuran are generally thought not to be mutagenic.

## Carcinogenicity

### A: General Product Information

In 2012 USEPA Integrated Risk Information System (IRIS) reviewed a two species inhalation lifetime study on THF conducted by NTP (1998). Male rats developed renal tumors and female mice developed liver tumors while neither the female rats nor the male mice showed similar results. Because the carcinogenic mechanisms could not be identified clearly in either species for either tumor, the EPA determined that the male rat and female mouse findings are relevant to the assessment of carcinogenic potential in humans. Therefore, the IRIS review concludes that these data in aggregate indicate that there is "suggestive evidence of carcinogenic potential" following exposure to THF by all routes of exposure.

### B: Component Carcinogenicity

**Tetrahydrofuran (109-99-9)**

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

**Cyclohexanone (108-94-1)**

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

**Acetone (67-64-1)**

ACGIH: A4 - Not Classifiable as a Human Carcinogen

**PVC (Chloroethylene, polymer) (9002-86-2)**

ACGIH: A4 - Not Classifiable as a Human Carcinogen
IARC: Supplement 7 [1987]; Monograph 19 [1979] (Group 3 (not classifiable))

**Silica, amorphous, fumed, crystalline-free (112945-52-5)**

IARC: Monograph 68 [1997] (listed under Amorphous silica) (Group 3 (not classifiable))

## Reproductive Toxicity

Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.

## Specified Target Organ General Toxicity: Single Exposure

May cause respiratory irritation. Inhalation of high concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

## Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ toxicity repeat exposure effects.

## Aspiration Respiratory Organs Hazard

Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

# * * * Section 12 - Ecological Information * * *

## Ecotoxicity

### A: General Product Information

This product is not expected to be toxic to aquatic organisms.

### B: Component Analysis - Ecotoxicity - Aquatic Toxicity

**Tetrahydrofuran (109-99-9)**

| Test & Species | Conditions |
|---|---|

| | | |
|---|---|---|
| 96 Hr LC50 Pimephales promelas | 1970-2360 mg/L [flow-through] | |
| 96 Hr LC50 Pimephales promelas | 2700-3600 mg/L [static] | |
| 24 Hr EC50 Daphnia magna | 5930 mg/L | |

**Cyclohexanone (108-94-1)**

| Test & Species | | Conditions |
|---|---|---|
| 96 Hr LC50 Pimephales promelas | 481-578 mg/L [flow-through] | |
| 96 Hr LC50 Pimephales promelas | 8.9 mg/L | |
| 96 Hr EC50 Chlorella vulgaris | 20 mg/L | |
| 24 Hr EC50 Daphnia magna | 800 mg/L | |

**Acetone (67-64-1)**

| Test & Species | | Conditions |
|---|---|---|
| 96 Hr LC50 Oncorhynchus mykiss | 4.74 - 6.33 mL/L | |
| 96 Hr LC50 Pimephales promelas | 6210 - 8120 mg/L [static] | |
| 96 Hr LC50 Lepomis macrochirus | 8300 mg/L | |
| 48 Hr EC50 Daphnia magna | 10294 - 17704 mg/L [Static] | |
| 48 Hr EC50 Daphnia magna | 12600 - 12700 mg/L | |

**Methyl ethyl ketone (78-93-3)**

| Test & Species | | Conditions |
|---|---|---|
| 96 Hr LC50 Pimephales promelas | 3130-3320 mg/L [flow-through] | |
| 48 Hr EC50 Daphnia magna | >520 mg/L | |
| 48 Hr EC50 Daphnia magna | 5091 mg/L | |
| 48 Hr EC50 Daphnia magna | 4025 - 6440 mg/L [Static] | |

## Persistence/Degradability

No information available for the product.

## Bioaccumulation

No information available for the product.

## Mobility in Soil

No information available for the product.

# * * * Section 13 - Disposal Considerations * * *

## Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

**US EPA Waste Number & Descriptions**

**Component Waste Numbers**

**Tetrahydrofuran (109-99-9)**
RCRA: waste number U213 (Ignitable waste)

**Cyclohexanone (108-94-1)**
RCRA: waste number U057 (Ignitable waste)

**Acetone (67-64-1)**
RCRA: waste number U002 (Ignitable waste)

**Methyl ethyl ketone (78-93-3)**
RCRA: waste number U159 (Ignitable waste, Toxic waste)
200.0 mg/L regulatory level

## Disposal of Contaminated Containers or Packaging

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

# * * * Section 14 - Transportation Information * * *

## DOT Information

**For Greater than 1 liter (0.3 gal):**
**Shipping Name:** Adhesives
**UN #:** 1133 **Hazard Class:** 3 **Packing Group:** II
**Required Label(s):** Flammable Liquid

**For Less than 1 liter (0.3 gal):**
**Shipping Name:** Consumer Commodity, ORM-D

## IMDG Information

**For Greater than 1 liter (0.3 gal):**
**Shipping Name:** Adhesives
**UN #:** 1133 **Hazard Class:** 3 **Packing Group:** II
**Required Label(s):** Flammable Liquid

**For Less than 1 liter (0.3 gal):**
**Shipping Name:** Adhesives
**UN #:** 1133 **Hazard Class:** 3 **Packing Group:** II
**Required Label(s):** None (Limited Quantites are expected from labeling)

# * * * Section 15 - Regulatory Information * * *

## Regulatory Information

**US Federal Regulations**

**Component Analysis**

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

**Tetrahydrofuran (109-99-9)**

CERCLA: 1000 lb final RQ; 454 kg final RQ

**Cyclohexanone (108-94-1)**

CERCLA: 5000 lb final RQ; 2270 kg final RQ

**Acetone (67-64-1)**

CERCLA: 5000 lb final RQ; 2270 kg final RQ

**Methyl ethyl ketone (78-93-3)**

CERCLA: 5000 lb final RQ; 2270 kg final RQ

**State Regulations**

**Component Analysis - State**

The following components appear on one or more of the following state hazardous substances lists:

| Component | CAS | CA | MA | MN | NJ | PA | RI |
|---|---|---|---|---|---|---|---|
| Tetrahydrofuran | 109-99-9 | Yes | Yes | Yes | Yes | Yes | No |
| Cyclohexanone | 108-94-1 | Yes | Yes | Yes | Yes | Yes | No |
| Acetone | 67-64-1 | Yes | Yes | Yes | Yes | Yes | No |
| PVC (Chloroethylene, polymer) | 9002-86-2 | No | No | No | Yes | No | No |
| Methyl ethyl ketone | 78-93-3 | Yes | Yes | Yes | Yes | Yes | No |

This product contains trace amounts of chemicals known to the State of California to cause cancer. Under normal use conditions, exposure to these chemicals at levels above the State of California "No Significant Risk Level" (NSRL) are unlikely. The use of proper personal protective equipment (PPE) and ventilation guidelines noted in Section 8 will minimize exposure to these chemicals.

**Component Analysis - WHMIS IDL**

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

| Component | CAS # | Minimum Concentration |
|---|---|---|
| Tetrahydrofuran | 109-99-9 | 1 % |
| Cyclohexanone | 108-94-1 | 0.1 % |
| Acetone | 67-64-1 | 1 % |
| Methyl ethyl ketone | 78-93-3 | 1 % |

**Additional Regulatory Information**

**Component Analysis - Inventory**

| Component | CAS # | TSCA | CAN | EEC |
|---|---|---|---|---|
| Tetrahydrofuran | 109-99-9 | Yes | DSL | EINECS |
| Cyclohexanone | 108-94-1 | Yes | DSL | EINECS |
| Acetone | 67-64-1 | Yes | DSL | EINECS |
| PVC (Chloroethylene, polymer) | 9002-86-2 | Yes | DSL | ELINCS |
| Methyl ethyl ketone | 78-93-3 | Yes | DSL | EINECS |
| Silica, amorphous, fumed, crystalline-free | 112945-52-5 | No | DSL | No |

## * * * Section 16 - Other Information * * *

### Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.

### Literature References

None

### Other Information

NFPA and HMIS:
NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None
HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:
The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, we cannot give any guarantees regarding information from other sources, and expressly do not make warranties, nor assume any liability for its use.

End of Sheet

# SAFETY DATA SHEET

## Section 1: IDENTIFICATION

### 1.1 PRODUCT IDENTIFIER

**Product Name:** PB Penetrating Catalyst (Bulk)

**Product Code:** 128-PB, 5-PB, 55-PB & 4-PB-DB

### 1.2 RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE

**Use:** Lubricant

### 1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

**Name/Address:** The Blaster Corporation
8500 Sweet Valley Drive
Valley View, Ohio 44125 - USA

**Telephone Number:** T (216) 901-5800
F (216) 901-5801

### 1.4 EMERGENCY TELEPHONE NUMBER

**Emergency Telephone Number:** ChemTel 800-255-3924

**Date of Preparation:** Feb. 3, 2016 **Version #:** 1.0

## Section 2: HAZARD(S) IDENTIFICATION

### 2.1 CLASSIFICATION OF THE CHEMICAL ACCORDING TO OSHA HAZCOM 2012

**Hazard class**

Flammable Liquid 4
Serious Eye Irritation 2A
Carcinogenicity 2
Aspiration Hazard 1

### 2.2 LABEL ELEMENTS ACCORDING TO OSHA HAZCOM 2012

**Hazard Pictogram:**

**Signal Word:** Danger

**Hazard Statement:** Combustible liquid. Causes serious eye irritation. Suspected of causing cancer. May be fatal if swallowed and enters airways.

**Prevention:** Keep away from flames and hot surfaces. – No smoking. Wash hands thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection.

**Response:** If exposed or concerned: Get medical advice/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/attention. If swallowed: Immediately

call a poison center/doctor. Do NOT induce vomiting.

**Storage:** Store in a well-ventilated place. Keep cool. Store locked up.

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

### 2.3 ADDITIONAL INFORMATION

**Hazards not otherwise classified:** Not applicable.

1% of the mixture consists of ingredient(s) of unknown acute toxicity.

This product is a hazardous chemical as defined by NOM-018-STPS-2000.

**Mexico Classification:**

**Blue = Health Red = Flammability Yellow = Reactivity White = Special**

**Hazard Rating:** 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

## Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 MIXTURES

| Ingredient | UN # | H / F/ R / * | CAS No | Wt. % |
|---|---|---|---|---|
| Distillates (petroleum), hydrotreated light | Not available | Not available | 64742-47-8 | 45 - 55 |
| Solvent naphtha (petroleum), heavy aromatic | UN1270 | Not available | 64742-94-5 | 20 - 30 |
| Distillates (petroleum), hydrotreated heavy naphthenic | Not available | Not available | 64742-52-5 | 20 - 30 |
| Naphthalene | UN1334/ UN2304 | 2/2/0 | 91-20-3 | 0.2 - 2.1 |
| Dinonylphenol, ethoxylated, phosphated | Not available | Not available | 39464-64-7 | 0.5 - 1.5 |

The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

* Per NOM-018-STPS-2000

## Section 4: FIRST- AID MEASURES

### 4.1 DESCRIPTION OF THE FIRST AID MEASURE

**Eye:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. If irritation persists, get medical attention.

**Skin:** In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.

**Inhalation:** If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

**Ingestion:** If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

### 4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

**Eye:** Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

**Skin:** May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.

**Inhalation:** May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea or vomiting.

**Ingestion:** May cause respiratory tract irritation.

### 4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENTS NEEDED

**Note to Physicians:** Symptoms may not appear immediately.

**Specific Treatments:** In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

## Section 5: FIRE-FIGHTING MEASURES

### 5.1 EXTINGUISHING MEDIA

**Suitable Extinguishing Media:** Dry chemical, carbon dioxide or foam.

**Unsuitable Extinguishing Media:** Water may be ineffective for extinguishing fire.

### 5.2 SPECIAL HAZARDS ARISING FROM THE CHEMICAL

**Products of Combustion:** May include, and are not limited to: oxides of carbon, hydrocarbons.

### 5.3 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS

Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). Cool closed containers exposed to fire with water. Do not use a solid water stream as it may scatter and spread fire. Containers may explode when heated.

## Section 6: ACCIDENTAL RELEASE MEASURES

### 6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Eliminate sources of ignition.

### 6.2 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING - UP

**Methods for Containment:** Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

**Methods for Cleaning-Up:** Scoop up material and place in a disposal container. Vapors may be heavier than air and may travel along the ground to a distant ignition source and flash back. Provide ventilation.

## Section 7: HANDLING AND STORAGE

### 7.1 PRECAUTIONS FOR SAFE HANDLING

**Handling:** Keep away from sources of ignition. - No smoking. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. (See section 8)

**General Hygiene Advice:** Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

### 7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

**Storage:** Keep locked up and out of reach of children. Keep container tightly closed. Do not expose to temperatures exceeding 50 °C/ 122 °F. Store in dry, cool, well-ventilated area. (See section 10)

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 CONTROL PARAMETERS

**Exposure Guidelines**

| Occupational Exposure Limits | | |
|---|---|---|
| **Ingredient** | **OSHA-PEL** | **ACGIH-TLV** |
| | | |
| Distillates (petroleum), hydrotreated light | 100 ppm | 200 mg/m³ |
| Solvent naphtha (petroleum), heavy aromatic | Not available. | Not available. |
| Distillates (petroleum), hydrotreated heavy naphthenic | 5 mg/m³ (mist) | 5 mg/m³ (mist) |
| Naphthalene | 10 ppm; 50 mg/m$^3$ | 10 ppm |
| Dinonylphenol, ethoxylated, phosphated | Not available. | Not available. |

### 8.2 EXPOSURE CONTROLS

**Engineering Controls:** Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

### 8.3 INDIVIDUAL PROTECTIVE MEASURES

**Personal Protective Equipment:**

**Eye/Face Protection:** Safety glasses with side-shields.

**Skin Protection:**

**Hand Protection:** Wear chemically resistant protective gloves.

**Body Protection:** Wear suitable protective clothing.

**Respiratory Protection:** A NIOSH approved respirator is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

| | |
|---|---|
| **General Health and Safety Measures:** | Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices. Ensure that eyewash stations and safety showers are close to the workstation location. |

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Appearance:** | Viscous / Oily. |
| **Color:** | Orange. |
| **Odor:** | Heavy aromatic. |
| **Odor Threshold:** | Not available. |
| **Physical State:** | Liquid. |
| **pH:** | Not available. |
| **Melting Point/Freezing Point:** | Not available. |
| **Initial Boiling Point and Boiling Range:** | 177.8 °C (352 °F) |
| **Flash Point:** | 65.6 °C (150 °F) |
| **Evaporation Rate:** | >1 (n-butyl acetate = 1) |
| **Flammability:** | Flammable. |
| **Lower Flammability/Explosive Limit:** | Not available. |
| **Upper Flammability/Explosive Limit:** | Not available. |
| **Vapor Pressure:** | Not available. |
| **Vapor Density:** | >1 (Air = 1) |
| **Relative Density/Specific Gravity:** | 0.91 (Water = 1) |
| **Solubility:** | Negligible. |
| **Partition coefficient: n-octanol/water:** | Not available. |
| **Auto-ignition Temperature:** | Not available. |
| **Decomposition Temperature:** | Not available. |
| **Viscosity:** | Not available. |
| **Oxidizing Properties:** | Not available. |
| **Explosive Properties:** | Not available. |
| **VOC content:** | < 50% |

## Section 10: STABILITY AND REACTIVITY

### 10.1 REACTIVITY

No dangerous reaction known under conditions of normal use.

### 10.2 CHEMICAL STABILITY

Stable under normal storage conditions.

### 10.3 POSSIBILITY OF HAZARDOUS REACTIONS

No dangerous reaction known under conditions of normal use.

### 10.4 CONDITIONS TO AVOID

Heat. Incompatible materials. Sources of ignition. Excessive water.

### 10.5 INCOMPATIBLE MATERIALS

Strong oxidizing agents. Strong reducing agents. Moisture.

### 10.6 HAZARDOUS DECOMPOSITION PRODUCTS

May include, and are not limited to: oxides of carbon, hydrocarbons.

## Section 11: TOXICOLOGICAL INFORMATION

### 11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

**Likely Routes of Exposure:** Skin contact, eye contact, inhalation, and ingestion.

**Symptoms related to physical/chemical/toxicological characteristics:**

**Eye:** Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

**Skin:** May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.

**Ingestion:** May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea or vomiting.

**Inhalation:** May cause respiratory tract irritation.

**Acute Toxicity:**

| Ingredient | IDLH | LC50 | LD50 |
|---|---|---|---|
| Distillates (petroleum), hydrotreated light | Not available. | Inhalation >5.2 mg/L 4h, rat | Oral >5000 mg/kg, rat; Dermal >2000 mg/kg, rabbit |
| Solvent naphtha (petroleum), heavy aromatic | Not available. | Inhalation >5.28 mg/L 4h, rat | Oral >5000 mg/kg, rat; Dermal >2000 mg/kg, rabbit |
| Distillates (petroleum), hydrotreated heavy naphthenic | Not available. | Inhalation >5.0 mg/L 4h, rat | Oral >5000 mg/kg, rat; Dermal >5000 mg/kg, rabbit |
| Naphthalene | 250 ppm | Not available. | Oral 490 mg/kg, rat; Dermal >2500 mg/kg, rat; Dermal >20 g/kg, rabbit |
| Dinonylphenol, ethoxylated, phosphated | Not available. | Not available. | Not available. |

| Calculated overall Chemical Acute Toxicity Values | | |
|---|---|---|
| **LC50 (inhalation)** | **LD50 (oral)** | **LD50 (dermal)** |
| Not available. | > 2000 mg/kg, rat | > 2000 mg/kg, rabbit |

| Ingredient | Chemical Listed as Carcinogen or Potential Carcinogen (NTP, IARC, OSHA, ACGIH, CP65)* |
|---|---|
| Distillates (petroleum), hydrotreated light | Not listed. |
| Solvent naphtha (petroleum), heavy aromatic | Not listed. |
| Distillates (petroleum), hydrotreated heavy naphthenic | Not listed. |
| Naphthalene | G-A4, I-2B, N-2, CP65 |
| Dinonylphenol, ethoxylated, phosphated | Not listed. |

* See Section 15 for more information.

### 11.2 DELAYED, IMMEDIATE, AND CHRONIC EFFECTS OF SHORT- AND LONG-TERM EXPOSURE

**Skin Corrosion/Irritation:** Based on available data, the classification criteria are not met.

**Serious Eye Damage/Irritation:** Causes serious eye irritation.

**Respiratory Sensitization:** Based on available data, the classification criteria are not met.

**Skin Sensitization:** Based on available data, the classification criteria are not met.

**STOT-Single Exposure:** Based on available data, the classification criteria are not met.

**Chronic Health Effects:**

**Carcinogenicity:** Possible carcinogen.

**Germ Cell Mutagenicity:** Based on available data, the classification criteria are not met.

**Reproductive Toxicity:**

**Developmental:** Based on available data, the classification criteria are not met.

**Fertility:** Based on available data, the classification criteria are not met.

**STOT-Repeated Exposure:** Based on available data, the classification criteria are not met.

**Aspiration Hazard:** May be fatal if swallowed and enters airways.

**Other Information:** Not available.

## Section 12: ECOLOGICAL INFORMATION

### 12.1 ECOTOXICITY

**Acute/Chronic Toxicity:** May cause long-term adverse effects in the aquatic environment.

### 12.2 PERSISTENCE AND DEGRADABILITY

Not available.

### 12.3 BIOACCUMULATIVE POTENTIAL

**Bioaccumulation:** Not available.

### 12.4 MOBILITY IN SOIL

Not available.

### 12.5 OTHER ADVERSE EFFECTS

Not available.

## Section 13: DISPOSAL CONSIDERATIONS

### 13.1 WASTE TREATMENT METHODS

**Disposal Method:** This material must be disposed of in accordance with all local, state, provincial, and federal regulations. The generation of waste should be avoided or minimized wherever possible.

**Other disposal recommendations:** Handle empty containers with care because residual vapours are flammable.

## Section 14: TRANSPORT INFORMATION

### 14.1 UN NUMBER

| DOT | NOM-004-SCT2-1994 |
|---|---|
| NA 1993 | Not regulated. |

### 14.2 UN PROPER SHIPPING NAME

| DOT | NOM-004-SCT2-1994 |
|---|---|
| Combustible liquid, n.o.s. (Petroleum distillate) | Not applicable. |

### 14.3 TRANSPORT HAZARD CLASS (ES)

| DOT | NOM-004-SCT2-1994 |
|---|---|
| 3 | Not applicable. |

### 14.4 PACKING GROUP

| DOT | NOM-004-SCT2-1994 |
|---|---|
| III | Not applicable. |

### 14.5 ENVIRONMENTAL HAZARDS

Not available.

### 14.6 TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE

Not available.

### 14.7 SPECIAL PRECAUTIONS FOR USER

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

## Section 15: REGULATORY INFORMATION

### 15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/ LEGISLATIONS SPECIFIC FOR THE CHEMICAL

**US:** SDS prepared pursuant to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

**Mexico:** SDS prepared pursuant to NOM-018-STPS-2000.

| SARA Title III | | | | |
|---|---|---|---|---|
| **Ingredient** | **Section 302 (EHS) TPQ (lbs.)** | **Section 304 EHS RQ (lbs.)** | **CERCLA RQ (lbs.)** | **Section 313** |
| Distillates (petroleum), hydrotreated light | Not listed. | Not listed. | Not listed. | Not listed. |
| Solvent naphtha (petroleum), heavy aromatic | Not listed. | Not listed. | Not listed. | Not listed. |
| Distillates (petroleum), hydrotreated heavy naphthenic | Not listed. | Not listed. | Not listed. | Not listed. |
| Naphthalene | Not listed. | Not listed. | 100 | 313 |
| Dinonylphenol, ethoxylated, phosphated | Not listed. | Not listed. | Not listed. | Not listed. |

**State Regulations**

**California Proposition 65:**

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

**Global Inventories:**

| Ingredient | USA TSCA |
|---|---|
| Distillates (petroleum), hydrotreated light | Yes. |
| Solvent naphtha (petroleum), heavy aromatic | Yes. |
| Distillates (petroleum), hydrotreated heavy naphthenic | Yes. |
| Naphthalene | Yes. |
| Dinonylphenol, ethoxylated, phosphated | Yes. |

| NFPA-National Fire Protection Association: | |
|---|---|
| **Health:** | 2 |
| **Fire:** | 2 |
| **Reactivity:** | 0 |

| HMIS-Hazardous Materials Identification System: | |
|---|---|
| **Health:** | 2* |
| **Fire:** | 2 |
| **Physical Hazard:** | 0 |

**Hazard Rating:** 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

**SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:**

**CP65** **California Proposition 65**

**OSHA (O)** **Occupational Safety and Health Administration.**

**ACGIH (G)** **American Conference of Governmental Industrial Hygienists.**
A1 - Confirmed human carcinogen.
A2 - Suspected human carcinogen.
A3 - Animal carcinogen.
A4 - Not classifiable as a human carcinogen.
A5 - Not suspected as a human carcinogen.

**IARC (I)** **International Agency for Research on Cancer.**
1 - The agent (mixture) is carcinogenic to humans.
2A - The agent (mixture) is probably carcinogenic to humans; there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimentalanimals.

2B - The agent (mixture) is possibly carcinogenic to humans; there is limited evidence of carcinogenicity in humans in the absence of sufficient evidence of carcinogenicity in experimental animals.
3 - The agent (mixture, exposure circumstance) is not classifiable as to its carcinogenicity to humans.
4 - The agent (mixture, exposure circumstance) is probably not carcinogenic tohumans.

**NTP (N)** **National Toxicology Program.**
1 - Known to be carcinogens.
2 - Reasonably anticipated to be carcinogens.

## Section 16: OTHER INFORMATION

**Date of Preparation:** Feb. 3, 2016

**Version:** 1.0

**Revision Date:** Dec. 13, 2017

**Disclaimer:** We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

# End of Safety Data Sheet

# MATERIAL SAFETY DATA SHEET

**Review Date:** 01/17/2005

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT:** **QUAKER STATE™ HD SAE Motor Oil-All Grades**

**MSDS NUMBER:** 614943LU - 0
**PRODUCT CODE(S):** 11031, 29028, 5050867, 6028

**PRODUCT USE:** Motor Oil

| MANUFACTURER | TELEPHONE NUMBERS |
|---|---|
| SOPUS Products | **Spill Information:** (877) 242-7400 |
| P.O. Box 4427 | **Health Information:** (877) 504-9351 |
| Houston, TX. 77210-4427 | **MSDS Assistance Number:** (877) 276-7285 |

## SECTION 2 PRODUCT/INGREDIENTS

| INGREDIENTS | CAS# | CONCENTRATION | |
|---|---|---|---|
| Heavy Duty Motor Oil | | | |
| Highly refined petroleum oils | Mixture | 95 - 99 | %volume |
| Proprietary additives | Mixture | 1 - 3 | %volume |

## SECTION 3 HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW**
**Appearance & Odor:** Amber liquid. Petroleum oil odor.
**Health Hazards:** No known immediate health hazards.
**Physical Hazards:** No known physical hazards.
**NFPA Rating (Health, Fire, Reactivity):** 0, 1, 0
Hazard Rating: Least - 0 Slight - 1 Moderate - 2 High - 3 Extreme - 4

**Route(s) of Exposure:** Skin

**Inhalation:**
Inhalation of vapors (generated at high temperatures only) or oil mist may cause mild irritation of the nose, throat, and respiratory tract.

**Eye Irritation:**
Lubricating oils are generally considered no more than minimally irritating to the eyes.

**Skin Contact:**
Lubricating oils are generally considered no more than minimally irritating to the skin. Prolonged and repeated contact may result in defatting and drying of the skin that may cause various skin disorders such as dermatitis, folliculitis or oil

acne.

**Ingestion:**
Lubricating oils are generally no more than slightly toxic if swallowed.

**Other Health Effects:**
The International Agency for Research on Cancer (IARC) has determined there is sufficient evidence for the carcinogenicity in experimental animals of used gasoline motor oils. Handling procedures and safety precautions in the MSDS should be followed to minimize exposure to the used product.

**Signs and Symptoms:**
Irritation as noted above.

**Aggravated Medical Conditions:**
Pre-existing eye, skin and respiratory disorders may be aggravated by exposure to this product.

**For additional health information, refer to section 11.**

## SECTION 4 FIRST AID MEASURES

**Inhalation:**
Remove victim to fresh air and provide oxygen if breathing is difficult. Get medical attention.

**Skin:**
Remove contaminated clothing and shoes and wipe excess from skin. Flush skin with water, then wash with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned.

**Eye:**
Flush with water. If irritation occurs, get medical attention.

**Ingestion:**
Do not induce vomiting. In general, no treatment is necessary unless large quantities of product are ingested. However, get medical attention.

**Note to Physician:**
In general, emesis induction is unnecessary in high viscosity, low volatility products such as oils and greases.

## SECTION 5 FIRE FIGHTING MEASURES

**Flash Point [Method]:** >450 ºF/>232.22 ºC [ Cleveland Open Cup]

**Extinguishing Media:**
This material is non-flammable. Material will float and can be re-ignited on surface of water. Use water fog, 'alcohol foam', dry chemical or carbon dioxide ($CO_2$) to extinguish flames. Do not use a direct stream of water.

**Fire Fighting Instructions:**
Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure, NIOSH approved, self-contained breathing apparatus. This material is non-flammable.

**Unusual Fire Hazards:**
Material may ignite when preheated.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

**Protective Measures:**
May burn although not readily ignitable.

Wear appropriate personal protective equipment when cleaning up spills. Refer to Section 8.

**Spill Management:**
FOR LARGE SPILLS: Remove with vacuum truck or pump to storage/salvage vessels.

FOR SMALL SPILLS: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal.

**Reporting:**
CERCLA: Product is covered by EPA's Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) petroleum exclusion. Releases to air, land, or water are not reportable under CERCLA (Superfund).

CWA: This product is an oil as defined under Section 311 of EPA's Clean Water Act (CWA). Spills into or leading to surface waters that cause a sheen must be reported to the National Response Center, 1-800-424-8802.

## SECTION 7 HANDLING AND STORAGE

**Precautionary Measures:**
Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet. Launder contaminated clothing before reuse. Properly dispose of contaminated leather articles such as shoes or belts that cannot be decontaminated. Avoid heat, open flames, including pilot lights, and strong oxidizing agents. Use explosion-proof ventilation to prevent vapor accumulation. Ground all handling equipment to prevent sparking.

**Storage:**
Do not store in open or unlabeled containers. Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures.

**Container Warnings:**
Keep containers closed when not in use. Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers.

## SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

| Chemical | Limit | TWA | STEL | Ceiling | Notation |
|---|---|---|---|---|---|
| Oil mist, mineral | ACGIH TLV | 5 mg/m3 | 10 mg/m3 | | |
| Oil mist, mineral | OSHA PEL | 5 mg/m3 | | | |

### Exposure Controls

Provide adequate ventilation to control airborne concentrations below the exposure guidelines/limits.

### Personal Protection

Personal protective equipment (PPE) selections vary based on potential exposure conditions such as handling practices, concentration and ventilation. Information on the selection of eye, skin and respiratory protection for use with this material is provided below.

**Eye Protection:**
Chemical Goggles, or Safety glasses with side shields

**Skin Protection:**
Use protective clothing which is chemically resistant to this material. Selection of protective clothing depends on potential exposure conditions and may include gloves, boots, suits and other items. The selection(s) should take into account such factors as job task, type of exposure and durability requirements.

Published literature, test data and/or glove and clothing manufacturers indicate the best protection is provided by:
Neoprene, or Nitrile Rubber

**Respiratory Protection:**
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, an approved respirator must be worn. Respirator selection, use and maintenance should be in accordance with the requirements of the OSHA Respiratory Protection Standard, 29 CFR 1910.134.

Types of respirator(s) to be considered in the selection process include:
For Mist: Air Purifying, R or P style NIOSH approved respirator.
For Vapors: Air Purifying, R or P style prefilter & organic cartridge, NIOSH approved respirator. Self-contained breathing apparatus for use in environments with unknown concentrations or emergency situations.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

**Appearance & Odor:** Amber liquid. Petroleum oil odor.
**Substance Chemical Family:** Lubricants

| | | | |
|---|---|---|---|
| **Flash Point** | > 450 ºF [Cleveland Open Cup] | **Odor** | Petroleum oil odor. |
| **Specific Gravity** | 0.877 | **Viscosity** | > 30 cSt @ 40 ºC |

## SECTION 10 REACTIVITY AND STABILITY

**Stability:**
Material is stable under normal conditions.

**Conditions to Avoid:**
Avoid heat and open flames.

**Materials to Avoid:**
Avoid contact with strong oxidizing agents.

**Hazardous Decomposition Products:**

Thermal decomposition products are highly dependent on combustion conditions. A complex mixture of airborne solids,

and other unidentified organic compounds may be formed upon combustion.

## SECTION 11 TOXICOLOGICAL INFORMATION

**Acute Toxicity**

| TEST | Result | OSHA Classification | Material Tested |
|---|---|---|---|
| Dermal LD50 | >5.0 g/kg(Rabbit) | Non-Toxic | Based on components(s) |
| Oral LD50 | >5.0 g/kg(Rat) | Non-Toxic | Based on components(s) |

**Carcinogenicity Classification**

| Chemical Name | NTP | IARC | ACGIH | OSHA |
|---|---|---|---|---|
| Heavy Duty Motor Oil | Not Reviewed | Not Reviewed | No | No |

## SECTION 12 ECOLOGICAL INFORMATION

**Environmental Impact Summary:**
There is no ecological data available for this product. However, this product is an oil. It is persistent and does not readily biodegrade. However, it does not bioaccumulate.

## SECTION 13 DISPOSAL CONSIDERATIONS

**RCRA Information:**

Under RCRA, it is the responsibility of the user of the material to determine, at the time of the disposal, whether the material meets RCRA criteria for hazardous waste. This is because material uses, transformations, mixtures, processes, etc. may affect the classification. Refer to the latest EPA, state and local regulations regarding proper disposal.

## SECTION 14 TRANSPORT INFORMATION

**US Department of Transportation Classification**
This material is not subject to DOT regulations under 49 CFR Parts 171-180.

**Oil:** This product is an oil under 49CFR (DOT) Part 130. If shipped by rail or highway in a tank with a capacity of 3500 gallons or more, it is subject to these requirements. Mixtures or solutions containing 10% or more of this product may also be subject to this rule.

**International Air Transport Association**
Not regulated under IATA rules.

**International Maritime Organization Classification**
Not regulated under International Maritime Organization rules.

## SECTION 15 REGULATORY INFORMATION

## Federal Regulatory Status

**OSHA Classification:**
Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**Ozone Depleting Substances (40 CFR 82 Clean Air Act):**
This material does not contain nor was it directly manufactured with any Class I or Class II ozone depleting substances.

**Superfund Amendment & Reauthorization Act (SARA) Title III:**
There are no components in this product on the SARA 302 list.

**SARA Hazard Categories (311/312):**

| Immediate Health | Delayed Health | Fire | Pressure | Reactivity |
|---|---|---|---|---|
| NO | NO | NO | NO | NO |

**SARA Toxic Release Inventory (TRI) (313):**
There are no components in this product on the SARA 313 list.

**Toxic Substances Control Act (TSCA) Status:**
All component(s) of this material is(are) listed on the EPA/TSCA Inventory of Chemical Substances.

**Other Chemical Inventories:**
Component(s) of this material is (are) listed on the Australian AICS, Canadian DSL, Chinese Inventory, European EINECS, Korean Inventory,

## State Regulation

This material is not regulated by California Prop 65, New Jersey Right-to-Know Chemical List or Pennsylvania Right-To-Know Chemical List. However for details on your regulation requirements you should contact the appropriate agency in your state.

## SECTION 16 OTHER INFORMATION

**Revision#:** 0
**Revision Date:** 04/29/2004
**Review Date:** 01/17/2005
**Revisions since last change (discussion):** This Material Safety Data Sheet (MSDS) has been created to fully comply with the guidance contained in the ANSI MSDS standard (ANSI Z400.1-1998). We encourage you to take the opportunity to read the MSDS and review the information contained therein.

## SECTION 17 LABEL INFORMATION

READ AND UNDERSTAND MATERIAL SAFETY DATA SHEET BEFORE HANDLING OR DISPOSING OF PRODUCT. THIS LABEL COMPLIES WITH THE REQUIREMENTS OF THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200) FOR USE IN THE WORKPLACE. THIS LABEL IS NOT INTENDED TO BE USED WITH PACKAGING

INTENDED FOR SALE TO CONSUMERS AND MAY NOT CONFORM WITH THE REQUIREMENTS OF THE CONSUMER PRODUCT SAFETY ACT OR OTHER RELATED REGULATORY REQUIREMENTS.

**PRODUCT CODE(S):** 11031, 29028, 5050867, 6028

**QUAKER STATE™ HD SAE Motor Oil-All Grades**

**ATTENTION!**

**PROLONGED OR REPEATED SKIN CONTACT MAY CAUSE OIL ACNE OR DERMATITIS. USED GASOLINE ENGINE OIL HAS BEEN SHOWN TO CAUSE CANCER IN LABORATORY ANIMALS.**

**Precautionary Measures:**
Avoid prolonged or repeated contact with eyes, skin and clothing. Wash thoroughly after handling.

## FIRST AID

**Inhalation:** Remove victim to fresh air and provide oxygen if breathing is difficult. Get medical attention.
**Skin Contact:** Remove contaminated clothing and shoes and wipe excess from skin. Flush skin with water, then wash with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned.
**Eye Contact:** Flush with water. If irritation occurs, get medical attention.
**Ingestion:** Do not induce vomiting. In general, no treatment is necessary unless large quantities of product are ingested. However, get medical attention.

## FIRE

**In case of fire,** Use water fog, 'alcohol foam', dry chemical or carbon dioxide ($CO_2$) to extinguish flames. Do not use a direct stream of water. Material will float and can be re-ignited on surface of water.

## SPILL OR LEAK

Dike and contain spill.
FOR LARGE SPILLS: Remove with vacuum truck or pump to storage/salvage vessels.

FOR SMALL SPILLS: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal.

CONTAINS: Highly refined petroleum oils, Mixture; Proprietary additives, Mixture

**NFPA Rating (Health, Fire, Reactivity):** 0, 1, 0

## TRANSPORTATION

**US Department of Transportation Classification**
This material is not subject to DOT regulations under 49 CFR Parts 171-180.

**Oil:** This product is an oil under 49CFR (DOT) Part 130. If shipped by rail or highway in a tank with a capacity of 3500 gallons or more, it is subject to these requirements. Mixtures or solutions containing 10% or more of this product may also be subject to this rule.

**CAUTION:** Misuse of empty containers can be hazardous. Empty containers can be hazardous if used to store toxic, flammable, or reactive materials. Cutting or welding of empty containers might cause fire, explosion or toxic fumes from residues. Do not pressurize or expose to open flames or heat. Keep container closed and drum bungs in place.

**Name and Address**

SOPUS Products
P.O. Box 4427
Houston, TX 77210-4427

| ADMINISTRATIVE INFORMATION | |
|---|---|
| **MANUFACTURER ADDRESS:** | SOPUS Products, P.O. Box 4427, Houston, TX. 77210-4427 |

THE INFORMATION CONTAINED IN THIS DATA SHEET IS BASED ON THE DATA AVAILABLE TO US AT THIS TIME, AND IS BELIEVED TO BE ACCURATE BASED UPON THAT : IT IS PROVIDED INDEPENDENTLY OF ANY SALE OF THE PRODUCT, FOR PURPOSE OF HAZARD COMMUNICATION. IT IS NOT INTENDED TO CONSTITUTE PRODUCT PERFORMANCE INFORMATION, AND NO EXPRESS OR IMPLIED WARRANTY OF ANY KIND IS MADE WITH RESPECT TO THE PRODUCT, UNDERLYING DATA OR THE INFORMATION CONTAINED HEREIN. YOU ARE URGED TO OBTAIN DATA SHEETS FOR ALL PRODUCTS YOU BUY, PROCESS, USE OR DISTRIBUTE, AND ARE ENCOURAGED TO ADVISE THOSE WHO MAY COME IN CONTACT WITH SUCH PRODUCTS OF THE INFORMATION CONTAINED HEREIN.

TO DETERMINE THE APPLICABILITY OR EFFECT OF ANY LAW OR REGULATION WITH RESPECT TO THE PRODUCT, YOU SHOULD CONSULT WITH YOUR LEGAL ADVISOR OR THE APPROPRIATE GOVERNMENT AGENCY. WE WILL NOT PROVIDE ADVICE ON SUCH MATTERS, OR BE RESPONSIBLE FOR ANY INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN. THE UNDERLYING DATA, AND THE INFORMATION PROVIDED HEREIN AS A RESULT OF THAT DATA, IS THE PROPERTY OF SOPUS PRODUCTS AND IS NOT TO BE THE SUBJECT OF SALE OR EXCHANGE WITHOUT THE EXPRESS WRITTEN CONSENT OF SOPUS PRODUCTS.

43821-11420-100R-01/17/2005

SAFETY DATA SHEET

SDS 0013

## Section 1 -- PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
RectorSeal No. 5 Sub-Zero

PRODUCT CODES
27731, 27651, 27541, 27460, 27371, 27111, 27222

CHEMICAL FAMILY
Organic

USE
Pipe Thread Sealant

| HMIS CODES | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Reactivity | 0 |
| PPI | B |

MANUFACTURER'S NAME
The RectorSeal Corporation
2601 Spenwick Drive
Houston, Texas 77055 USA

EMERGENCY TELEPHONE NO.
Chemtrec 24 Hours
(800)424-9300 USA
(703)527-3887 International

DATE OF VALIDATION
January 23, 2015

TECHNICAL SERVICE TELEPHONE NO.
(800)231-3345 or (713)263-8001

DATE OF PREPARATION
October 10, 2012

## Section 2 -- HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
OSHA Hazards
Target Organ Effect, Teratogen, Reproductive hazard
Target Organs
Liver, Kidney, Testes.
GHS Classification
Eye irritation (Category 2B)
Reproductive toxicity (Category 2)

GHS Label elements, including precautionary statements
Pictogram: Target Organ Toxicity
Signal Word: Warning
Hazard statement(s)
H320 - Causes eye irritation.
H361 - Suspected of damaging fertility or the unborn child.
Precautionary statement(s)
P281 - Use personal protective equipment as required.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.

SUMMARY OF ACUTE HAZARDS
Irritation to eyes, nose and throat; drowsiness, narcosis, tremors and other CNS effects at high concentration.

ROUTE OF EXPOSURE, SIGNS AND SYMPTOMS
INHALATION
Nasal and respiratory irritation, dizziness, narcosis, headache, nausea, CNS depression and unconsciousness.
EYE CONTACT

Watering, blurred vision, inflammation and irritation which can result in corneal injury.

SKIN CONTACT

Irritation, dermatitis.

INGESTION

Nausea, vomiting; CNS depression; irritation of gastrointestinal tract, liver and peritoneal wall; lung congestion.

SUMMARY OF CHRONIC HAZARDS

Skin irritation and dermatitis. Possible liver and kidney damage.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Individuals with pre-existing or chronic diseases of the eyes, skin, respiratory system, cardiovascular system, gastrointestinal system, liver or kidneys may have increased susceptibility to excessive exposures.

## Section 3 -- COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT: Diethylene Glycol Methyl Ether
PERCENTAGE BY WEIGHT: 16 Max
CAS NUMBER: 111-77-3
EC# : 203-906-6

## Section 4 -- FIRST AID MEASURES

| | |
|---|---|
| If INHALED: | If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential. |
| If on SKIN: | Immediately flush with large amounts of water for at least 15 minutes. Get prompt medical attention. |
| If in EYES: | Flush eyes with large amounts of water for 15 minutes. Get medical attention. |
| If SWALLOWED: | If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person. |

## Section 5 -- FIRE FIGHTING MEASURES

EXTINGUSING MEDIA

Foam, dry chemical, carbon dioxide or water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus (SCBA) and other protective clothing. Hazardous decomposition products possible (see Section 10).

UNUSUAL FIRE AND EXPLOSION HAZARDS: None known.

## Section 6 -- ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Remove all sources of ignition. Use absorbent materials to prevent footing hazard and to contain. Ventilate area with natural or explosion-proof, forced air ventilation. Avoid flushing into sewers, drains, waterways, and soil. Wear protective clothing and respiratory protection during cleanup.

## Section 7 -- HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Keep container closed and upright when not in use. Do not store near heat, sparks, or open flames.

OTHER PRECAUTIONS: Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues; treat as if full and observe all products precautions. Do not reuse empty containers. KEEP OUT OF REACH OF CHILDREN.

## Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION

| INGREDIENT | UNITS |
|---|---|
| Diethylene Glycol Methyl Ether | |
| ACGIH TLV | N/D |
| OSHA PEL | N/D |

RESPIRATORY PROTECTION (SPECIFY TYPE): In confined poorly ventilated areas, use NIOSH/MSHA approved air purifying or supplied air purifying or supplied air respirators.
VENTILATION - LOCAL EXHAUST: Acceptable
SPECIAL: Explosion-proof equipment.
MECHANICAL (GENERAL): Preferable
OTHER: N/A
PROTECTIVE GLOVES: Wear rubber gloves.
EYE PROTECTION: Chemical splash goggles (ANSI Z-87.1 or equivalent)
OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Coveralls recommended.
WORK/HYGIENIC PRACTICES: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

## Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| BOILING POINT: | 374 F (190 C) @ 760mm Hg |
| SPECIFIC GRAVITY (H20 = 1): | 1.40 |
| VAPOR PRESSURE (mm Hg): | 0.25 @ 77 F (20 C) |
| MELTING POINT: | N/A |
| VAPOR DENSITY (AIR = 1): | >1 |
| EVAPORATION RATE (ETHYL ACETATE = 1): | <1 |
| APPEARANCE/ODOR: | Gray Paste/Mild Odor |
| SOLUBILITY IN WATER: | 16% |
| Flash POINT | 208 F (98 C) SETA CC |
| LOWER EXPLOSION LIMIT | N/D |
| UPPER EXPLOSION LIMIT | N/D |
| VOLATILE ORGANIC COMPOUNDS(VOC)Content (Theoretical Percentage By Weight): | 16% or (160 g/L) |

## Section 10 -- STABILITY AND REACTIVITY

STABILITY: Stable
CONDITIONS TO AVOID: Heat, sparks, open flames, and strong oxidizing. Temperatures above 500 F (260 C).
INCOMPATIBILITY (MATERIALS TO AVOID): Gaseous oxygen, strong oxidizing materials, molten alkali metals.
HAZARDOUS DECOMPOSITION PRODUCTS: CO, $CO_2$ and fragmented hydrocarbons.
HAZARDOUS POLYMERIZATION: Will not occur.

## Section 11 -- TOXICOLOGY INFORMATION

CHRONIC HEALTH HAZARDS
No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

TOXICOLOGY DATA
Ingredient Name

---

Diethylene Glycol Methyl Ether
Oral-Rat LD50:5500 mg/kg
Inhalation-Rat LC50:N/D

==========

## Section 12 -- Ecological Information

---

ECOLOGICAL DATA
Ingredient Name

---

Diethylene Glycol Methyl Ether

| | |
|---|---|
| Food Chain Concentration Potential | N/A |
| WATERFOWL TOXICITY | N/A |
| BOD | 34% |
| AQUATIC TOXICITY | N/A |

==========

## Section 13 -- DISPOSAL CONSIDERATIONS

---

Waste Classification: Non-regulated solid waste
Disposal Method: Approved landfill
Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with Federal, State, and Local regulation regarding pollution.

==========

## Section 14 -- TRANSPORTATION INFORMATION

---

| | |
|---|---|
| DOT: | Non-Regulated |
| OCEAN (IMDG): | Non-Regulated |
| AIR (IATA): | Non-Regulated |
| WHMIS (CANADA): | Non-Regulated |

==========

## Section 15 -- REGULATORY INFORMATION

---

REGULATORY DATA
Ingredient Name

---

Diethylene Glycol Methyl Ether

| | |
|---|---|
| SARA 313 | Yes |
| TSCA Inventory | Yes |
| CERCLA RQ | N/A |
| RCRA Code | N/A |

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## Section 16 -- OTHER INFORMATION

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This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). The information herein is given in good faith, but no warranty, expressed or implied is made. Consult RectorSeal for further
information: (713) 263-8001

SAFETY DATA SHEET

SDS 0011

## Section 1 -- PRODUCT AND COMPANY IDENTIFICATION

| | HMIS CODES | |
|---|---|---|
| PRODUCT NAME | Health | 1 |
| RectorSeal No. 5 | Flammability | 2 |
| | Reactivity | 0 |
| PRODUCT CODES | PPI | B |

25112, 25191, 25271, 25300, 25431, 25551, 25552, 25631, 25633, 25780, 25790, 25793

CHEMICAL FAMILY
Organic

USE
Pipe Thread Sealant

MANUFACTURER'S NAME
The RectorSeal Corporation
2601 Spenwick Drive
Houston, Texas 77055 USA

EMERGENCY TELEPHONE NO.
Chemtrec 24 Hours
(800)424-9300 USA
(703)527-3887 International

DATE OF VALIDATION
January 23, 2015

TECHNICAL SERVICE TELEPHONE NO.
(800)231-3345 or (713)263-8001

DATE OF PREPARATION
January 9, 2013

## Section 2 -- HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
OSHA Hazards
Combustable
TARGET ORGANS
Not Classified
GHS CLASSIFICATION
PHYSICAL HAZARDS
Combustable liquid (Category 4)
HEALTH HAZARDS
Acute Toxicity:
Oral: Not Classified
Dermal: Not Classified
Inhalation: Not Classified
Skin Corrosion/Irritation: Not Classified
Serious Eye Damage/Eye Irritation: Not Classified
Skin Sensitization: Not Classified
Respiratory Sensitization: Not Classified
Germ Cell Mutagenicity: Not Classified
Carcinogenicity: See Section 11
Reproductive Toxicology: Not Classified
Target Organ Systemic Toxicity - Single Exposure: Not Classified
Target Organ Systemic Toxicity - Repeated Exposure: Not Classified
Aspiration Toxicity: Not Classified

GHS Label elements, including precautionary statements
Pictogram: Harmful / Irritant
Signal Word: Warning
Hazard Statements

H303 - May be harmful if swallowed.
H313 - May be harmful in contact with skin.
H335 + H336 - May cause respiratory irritation, and drowsiness or dizziness.
Precautionary Statements
P102 - Keep out of reach of children.
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P240 - Ground/Bond container and receiving equipment
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P262 - Do not get in eyes, on skin, or on clothing.
P264 - Wash hands thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
P362 - Take off contaminated clothing and wash before reuse.
EUH066 - Repeated exposure may cause skin dryness or cracking
Precautionary Statements - EU No. 1272/2008

---

SUMMARY OF ACUTE HAZARDS

Irritation to eyes, nose and throat; drowsiness, narcosis, tremors and other CNS effects at high concentration.

ROUTE OF EXPOSURE, SIGNS AND SYMPTOMS

INHALATION

Nasal and respiratory irritation, dizziness, narcosis, headache, nausea, CNS depression and unconsciousness.

EYE CONTACT

Watering, blurred vision, inflammation and irritation which can result in corneal injury.

SKIN CONTACT

Irritation, dermatitis.

INGESTION

Nausea, vomiting; CNS depression; irritation of gastrointestinal tract, liver and peritoneal wall; lung congestion.

SUMMARY OF CHRONIC HAZARDS

Skin irritation and dermatitis. Possible liver and kidney damage.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Individuals with pre-existing or chronic diseases of the eyes, skin, respiratory system, cardiovascular system, gastrointestinal system, liver or kidneys may have increased susceptibility to excessive exposures.

==========

## Section 3 -- COMPOSITION/INFORMATION ON INGREDIENTS

---

INGREDIENT: Diacetone Alcohol
PERCENTAGE BY WEIGHT: 20-30
CAS NUMBER: 123-42-2
EC# : 204-626-7

==========

## Section 4 -- FIRST AID MEASURES

---

If INHALED: If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.

If on SKIN: Wash with soap and water. If irritation occurs, seek medical attention.

If in EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.

If SWALLOWED: If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

## Section 5 -- FIRE FIGHTING MEASURES

EXTINGUSING MEDIA
Foam, dry chemical, carbon dioxide or water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus (SCBA) and other protective clothing. Hazardous decomposition products possible (see Section 10).

UNUSUAL FIRE AND EXPLOSION HAZARDS: Combustible - moderate flash point. Vapors heavier than air and may travel along the ground or to low spots at considerable distances to a source of ignition resulting in potential flashback. Burning liquid may float on water. Heat may build up pressure and rupture containers.

## Section 6 -- ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Remove all sources of ignition. Use absorbent materials to prevent footing hazard and to contain. Ventilate area with natural or explosion-proof, forced air ventilation. Avoid flushing into sewers, drains, waterways, and soil. Wear protective clothing and respiratory protection during cleanup.

## Section 7 -- HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Keep container closed and upright when not in use. Do not store near heat, sparks, or open flames.

OTHER PRECAUTIONS: Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues; treat as if full and observe all products precautions. Do not reuse empty containers. KEEP OUT OF REACH OF CHILDREN.

## Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION

| INGREDIENT | UNITS |
|---|---|
| Diacetone Alcohol | |
| ACGIH TLV | 50 ppm |
| OSHA PEL | 50 ppm |

RESPIRATORY PROTECTION (SPECIFY TYPE): In confined poorly ventilated areas, use NIOSH/MSHA approved air purifying or supplied air purifying or supplied air respirators.

VENTILATION - LOCAL EXHAUST: Acceptable

SPECIAL: Explosion-proof equipment.

MECHANICAL (GENERAL): Preferable

OTHER: N/A

PROTECTIVE GLOVES: Wear rubber gloves.

EYE PROTECTION: Chemical splash goggles (ANSI Z-87.1 or equivalent)

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Coveralls recommended.

WORK/HYGIENIC PRACTICES: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area.

Launder contaminated clothing before reuse.

## Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| BOILING POINT: | 322 F (161 C) @ 760mm Hg |
| SPECIFIC GRAVITY (H20 = 1): | 1.38 |
| VAPOR PRESSURE (mm Hg): | 0.3 @ 68 F (20 C) |
| MELTING POINT: | N/A |
| VAPOR DENSITY (AIR = 1): | 1.1 |
| EVAPORATION RATE (ETHYL ACETATE = 1): | 0.14 |
| APPEARANCE/ODOR: | Yellow Paste/Mild Odor |
| SOLUBILITY IN WATER: | 23% |
| VOLATILE ORGANIC COMPOUNDS(VOC)Content (Theoretical Percentage By Weight): | 23% or (317 g/L) |
| Flash POINT | 150 F (65 C) SETA CC |
| LOWER EXPLOSION LIMIT | N/D |
| UPPER EXPLOSION LIMIT | N/D |

## Section 10 -- STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID: Heat, sparks, open flames, and strong oxidizing. Temperatures above 500 F (260 C).

INCOMPATIBILITY (MATERIALS TO AVOID): Gaseous oxygen, strong oxidizing materials, molten alkali metals.

HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO2 and fragmented hydrocarbons.

HAZARDOUS POLYMERIZATION: Will not occur.

## Section 11 -- TOXICOLOGY INFORMATION

CHRONIC HEALTH HAZARDS

No ingredients in this product is an IARC, NTP or OSHA Lister carcinogen.

TOXICOLOGY DATA

Ingredient Name

Diacetone Alcohol

| | |
|---|---|
| Oral-Rat | LD50:4000 mg/kg |
| Inhalation-Human | TCLo: 100 ppm |

## Section 12 -- Ecological Information

ECOLOGICAL DATA

Ingredient Name

Diacetone Alcohol

| | |
|---|---|
| Food Chain Concentration Potential | N/A |
| WATERFOWL TOXICITY | N/A |
| BOD | N/A |
| AQUATIC TOXICITY | N/A |

## Section 13 -- DISPOSAL CONSIDERATIONS

Waste Classification: Non-regulated solid waste

Disposal Method: Approved landfill

Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in

accordance with Federal, State, and Local regulation regarding pollution.

## Section 14 -- TRANSPORTATION INFORMATION

| | |
|---|---|
| DOT: | Non-Regulated |
| OCEAN (IMDG): | Non-Regulated |
| AIR (IATA): | Non-Regulated |
| WHMIS (CANADA): | Non-Regulated |

## Section 15 -- REGULATORY INFORMATION

REGULATORY DATA

| Ingredient Name | | |
|---|---|---|
| Diacetone Alcohol | | |
| | SARA 313 | N/A |
| | TSCA Inventory | Yes |
| | CERCLA RQ | N/A |
| | RCRA Code | N/A |

## Section 16 -- OTHER INFORMATION

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information: (713) 263-8001

SAFETY DATA SHEET

SDS 0004

## Section 1 -- PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
RectorSeal No. 7

PRODUCT CODES
17432

CHEMICAL FAMILY
Organic

USE
Pipe Thread Sealant

| HMIS CODES | |
|---|---|
| Health | 2 |
| Flammability | 3 |
| Reactivity | 0 |
| PPI | B |

MANUFACTURER'S NAME
The RectorSeal Corporation
2601 Spenwick Drive
Houston, Texas 77055 USA

EMERGENCY TELEPHONE NO.
Chemtrec 24 Hours
(800)424-9300 USA
(703)527-3887 International

DATE OF VALIDATION
January 23, 2015

TECHNICAL SERVICE TELEPHONE NO.
(800)231-3345 or (713)263-8001

DATE OF PREPARATION
March 14, 2013

## Section 2 -- HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
OSHA Hazards
Flammable liquid, Target Organ Effect, Irritant
TARGET ORGANS
Liver, KidneyLiver, Kidney
GHS CLASSIFICATION
PHYSICAL HAZARDS: Flammable Liquid, Category 3
HEALTH HAZARDS
Acute Toxicity:
Oral: Category 4
Dermal: Category 5
Inhalation: Category 4
Skin Corrosion/Irritation: Category 3
Serious Eye Damage/Eye Irritation: Category 2A
Skin Sensitization: Not Classified
Respiratory Sensitization: Not Classified
Germ Cell Mutagenicity: Not Classified
Carcinogenicity: See Section 11
Reproductive Toxicology: Not Classified
Target Organ Systemic Toxicity - Single Exposure: Category 3
Target Organ Systemic Toxicity - Repeated Exposure: Not Classified
Aspiration Toxicity: Not Classified

GHS Label elements, including precautionary statements
Pictogram: Flammable, Harmful / Irritant
Signal Word: Danger
Hazard Statements:
H226 - Flammable liquid and vapour.
H302 - Harmful if swallowed.

H313 - May be harmful in contact with skin.
H316 - Causes mild skin irritation.
H318 - Causes serious eye damage.
H319 - Causes serious eye irritation
H335 + H336 - May cause respiratory irritation, and drowsiness or dizziness.
Precautionary Statements:
P102 - Keep out of reach of children.
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P240 - Ground/Bond container and receiving equipment
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P262 - Do not get in eyes, on skin, or on clothing.
P264 - Wash hands thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
P362 - Take off contaminated clothing and wash before reuse.
EUH066 - Repeated exposure may cause skin dryness or cracking
Precautionary Statements - EU No. 1272/2008

---

SUMMARY OF ACUTE HAZARDS

Irritation to eyes, nose and throat; drowsiness, narcosis, tremors and other CNS effects at high concentration.

ROUTE OF EXPOSURE, SIGNS AND SYMPTOMS

INHALATION

Nasal and respiratory irritation, dizziness, narcosis, headache, nausea, CNS depression and unconsciousness.

EYE CONTACT

Watering, blurred vision, inflammation and irritation which can result in corneal injury.

SKIN CONTACT

Irritation, dermatitis.

INGESTION

Nausea, vomiting; CNS depression; irritation of gastrointestinal tract, liver and peritoneal wall; lung congestion.

SUMMARY OF CHRONIC HAZARDS

Skin irritation and dermatitis. Possible liver and kidney damage.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Individuals with pre-existing or chronic diseases of the eyes, skin, respiratory system, cardiovascular system, gastrointestinal system, liver or kidneys may have increased susceptibility to excessive exposures.

==========

## Section 3 -- COMPOSITION/INFORMATION ON INGREDIENTS

---

INGREDIENT: Diacetone Alcohol
PERCENTAGE BY WEIGHT: 24.7
CAS NUMBER: 123-42-2
EC# : 204-626-7

---

INGREDIENT: Ethyl Acetate
PERCENTAGE BY WEIGHT: 3.76
CAS NUMBER: 141-78-6
EC# : 205-500-4

---

INGREDIENT: Methyl Isobutyl Ketone
PERCENTAGE BY WEIGHT: 0.1
CAS NUMBER: 108-10-1
EC# : 203-550-1

## Section 4 -- FIRST AID MEASURES

| | |
|---|---|
| If INHALED: | If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential. |
| If on SKIN: | Immediately flush with large amounts of water for at least 15 minutes. Get prompt medical attention. |
| If in EYES: | Flush eyes with large amounts of water for 15 minutes. Get medical attention. |
| If SWALLOWED: | If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person. |

## Section 5 -- FIRE FIGHTING MEASURES

EXTINGUSING MEDIA
Foam, dry chemical, carbon dioxide or water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus (SCBA) and other protective clothing. Hazardous decomposition products possible (see Section 10).

UNUSUAL FIRE AND EXPLOSION HAZARDS: Flammable - ambient flash point. Vapors heavier than air and may travel along the ground or to low spots at considerable distances to a source of ignition resulting in potential flashback. Burning liquid may float on water. Heat may build up pressure and rupture containers.

## Section 6 -- ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Remove all sources of ignition. Use absorbent materials to prevent footing hazard and to contain. Ventilate area with natural or explosion-proof, forced air ventilation. Avoid flushing into sewers, drains, waterways, and soil. Wear protective clothing and respiratory protection during cleanup.

## Section 7 -- HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Keep container closed and upright when not in use. Do not store near heat, sparks, or open flames.

OTHER PRECAUTIONS: Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues; treat as if full and observe all products precautions. Do not reuse empty containers. KEEP OUT OF REACH OF CHILDREN.

## Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION

| INGREDIENT | | UNITS |
|---|---|---|
| Diacetone Alcohol | | |
| ACGIH TLV | 50 | ppm |
| OSHA PEL | 50 | ppm |
| Ethyl Acetate | | |
| ACGIH TLV | 400 | ppm |

OSHA PEL 400 ppm
Methyl Isobutyl Ketone
ACGIH TLV 50 ppm
OSHA PEL 100 ppm

RESPIRATORY PROTECTION (SPECIFY TYPE): In confined poorly ventilated areas, use NIOSH/MSHA approved air purifying or supplied air purifying or supplied air respirators.
VENTILATION - LOCAL EXHAUST: Acceptable
SPECIAL: Explosion-proof equipment.
MECHANICAL (GENERAL): Preferable
OTHER: N/A
PROTECTIVE GLOVES: Wear rubber gloves.
EYE PROTECTION: Chemical splash goggles (ANSI Z-87.1 or equivalent)
OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Coveralls recommended.
WORK/HYGIENIC PRACTICES: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

## Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| BOILING POINT: | 322 F (161 C) @ 760mm Hg |
| SPECIFIC GRAVITY (H20 = 1): | 1.46 |
| VAPOR PRESSURE (mm Hg): | 0.3 @ 68 F (20 C) |
| MELTING POINT: | N/A |
| VAPOR DENSITY (AIR = 1): | 1.1 |
| EVAPORATION RATE (ETHYL ACETATE = 1): | 0.14 |
| APPEARANCE/ODOR: | Black Paste/Mild Odor |
| SOLUBILITY IN WATER: | Insoluble |
| VOLATILE ORGANIC COMPOUNDS(VOC)Content (Theoretical Percentage By Weight): | 28% or (280 g/L) |
| FLASH POINT | 77 F (25 C) SETA CC |
| LOWER EXPLOSION LIMIT | N/D |
| UPPER EXPLOSION LIMIT | N/D |

## Section 10 -- STABILITY AND REACTIVITY

STABILITY: Stable
CONDITIONS TO AVOID: Heat, sparks, open flames, and strong oxidizing. Temperatures above 500 F (260 C).
INCOMPATIBILITY (MATERIALS TO AVOID): Gaseous oxygen, strong oxidizing materials, molten alkali metals.
HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO2 and fragmented hydrocarbons.
HAZARDOUS POLYMERIZATION: Will not occur.

## Section 11 -- TOXICOLOGY INFORMATION

CHRONIC HEALTH HAZARDS
No ingredients in this product is an IARC, NTP or OSHA Lister carcinogen.

TOXICOLOGY DATA
Ingredient Name

Diacetone Alcohol
Oral-Rat LD50:4000 mg/kg
Inhalation-Human TCLo: 100 ppm
Ethyl Acetate

Oral rat LD50: 5620 mg/kg
Inhalation rat LC50: 200 gm/m3
Skin rabbit LD50: > 20 ml/kg

Methyl Isobutyl Ketone
Oral rat LD50: 2080 mg/kg
Skin rabbit > 20 mL/kg; irritation eye rabbit

## Section 12 -- Ecological Information

ECOLOGICAL DATA

| Ingredient Name | | |
|---|---|---|
| Diacetone Alcohol | | |
| | Food Chain Concentration Potential | N/A |
| | WATERFOWL TOXICITY | N/A |
| | BOD | N/A |
| | AQUATIC TOXICITY | N/A |
| Ethyl Acetate | | |
| | Food Chain Concentration Potential | N/A |
| | WATERFOWL TOXICITY | LC50/96-Hr values for fish are >100 mg/l |
| | BOD | N/A |
| | AQUATIC TOXICITY | N/A |
| Methyl Isobutyl Ketone | | |
| | Food Chain Concentration Potential | N/A |
| | WATERFOWL TOXICITY | N/A |
| | BOD | N/A |
| | AQUATIC TOXICITY | N/A |

## Section 13 -- DISPOSAL CONSIDERATIONS

Waste Classification: RCRA Hazardous Waste, DOO1
Disposal Method: Approved incineration
Waste from this product is considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with Federal, State, and Local regulation regarding pollution.

## Section 14 -- TRANSPORTATION INFORMATION

DOT: UN1993, Flammable liquid n.o.s. (contains diacetone alcohol & ethyl acetate),
Class 3, PG III, ERG#128
Quarts and less: UN1993, Flammable liquid n.o.s. (contains diacetone alcohol & ethyl acetate), Class 3, PG III, Limited Quantities or Ltd Qty
OCEAN (IMDG): UN1993, Flammable liquid n.o.s. (contains diacetone alcohol & ethyl acetate), Class 3, PG III, MFAG#3-07
Quarts and less: UN1993, Flammable liquid n.o.s. (contains diacetone alcohol & ethyl acetate), Class 3, PG III, Limited Quantities or Ltd Qty
AIR (IATA): UN1993, Flammable liquid n.o.s. (contains diacetone alcohol & ethyl acetate),Class 3, PG III, ERG#128

## Section 15 -- REGULATORY INFORMATION

REGULATORY DATA

Ingredient Name

---

Diacetone Alcohol

| | |
|---|---|
| SARA 313 | N/A |
| TSCA Inventory | Yes |
| CERCLA RQ | N/A |
| RCRA Code | N/A |

Ethyl Acetate

| | |
|---|---|
| SARA 313 | N/A |
| TSCA Inventory | Yes |
| CERCLA RQ | N/A |
| RCRA Code | U112 |

Methyl Isobutyl Ketone

| | |
|---|---|
| SARA 313 | N/A |
| TSCA Inventory | Yes |
| CERCLA RQ | N/A |
| RCRA Code | U161 |

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## Section 16 -- OTHER INFORMATION

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This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). The information herein is given in good faith, but no warranty, expressed or implied is made. Consult RectorSeal for further
information: (713) 263-8001

SAFETY DATA SHEET

SDS 0010

## Section 1 -- PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
RectorSeal No. 100 Virgin

PRODUCT CODES
22631, 22551, 22431, 22390, 22271, 22191, 22112

CHEMICAL FAMILY
Organic

USE
Pipe Thread Sealant

| HMIS CODES | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Reactivity | 0 |
| PPI | B |

MANUFACTURER'S NAME
The RectorSeal Corporation
2601 Spenwick Drive
Houston, Texas 77055 USA

EMERGENCY TELEPHONE NO.
Chemtrec 24 Hours
(800)424-9300 USA
(703)527-3887 International

DATE OF VALIDATION
January 23, 2015

TECHNICAL SERVICE TELEPHONE NO.
(800)231-3345 or (713)263-8001

DATE OF PREPARATION
April 19, 2012

## Section 2 -- HAZARDS IDENTIFICATION

GHS CLASSIFICATION
PHYSICAL HAZARDS: None
HEALTH HAZARDS
Acute Toxicity:
Oral: Not Classified
Dermal: Not Classified
Inhalation: Not Classified
Skin Corrosion/Irritation: Not Classified
Serious Eye Damage/Eye Irritation: Not Classified
Respiratory or Skin Sensitization: Not Classified
Germ Cell Mutagenicity: Not Classified
Carcinogenicity: Not Classified
Reproductive Toxicology: Not Classified
Target Organ Systemic Toxicity - Single Exposure: Not Classified
Target Organ Systemic Toxicity - Repeated Exposure: Not Classified
Aspiration Toxicity: Not Classified

ENVIRONMENTAL HAZARDS
Hazardous to the Aquatic Environment: Not Classified
Acute aquatic toxicity: Not Classified
Chronic aquatic toxicity: Not Classified
Bioaccumulation potential: Not Classified
Rapid degradability: Not Classified

GHS Label elements, including precautionary statements
Pictogram: None
Signal Word: None
Hazard Statements: None

Precautionary Statements:
P102 - Keep out of reach of children.
P264 - Wash hands thoroughly after handling.

---

Classification according to EU Directives 67/548/EEC or 1999/45/EC
LABELING SYMBOLS: None
RISK R-PHRASES: NOne
SAFETY S-PHRASES:
S2 : Keep out of the reach of children.

---

SUMMARY OF ACUTE HAZARDS
May produce slight to moderate skin and eye irritation.
ROUTE OF EXPOSURE, SIGNS AND SYMPTOMS
INHALATION
None known.
EYE CONTACT
Irritation, watering may occur.
SKIN CONTACT
Frequent or prolonged contact may irritate and cause dermatitis.
INGESTION
May cause nausea and vomiting. Not expected to produce toxic effects unless large amounts are ingested.
SUMMARY OF CHRONIC HAZARDS
None known.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Individuals with pre-existing or chronic diseases of the eyes, skin or persons with chemical sensitivity may have increased susceptibility to excessive exposures.

==========

## Section 3 -- COMPOSITION/INFORMATION ON INGREDIENTS

---

| % by WT | CAS No. | INGREDIENT | UNITS |
|---|---|---|---|
| None as defined by OSHA Hazard Communication Standard 29 CFR 1910.1200. | | | |

==========

## Section 4 -- FIRST AID MEASURES

---

| | |
|---|---|
| If INHALED: | N/A |
| If on SKIN: | Wash with soap and water. Seek medical attention if irritation persists. |
| If in EYES: | Flush with large amounts of water. Get medical attention if irritation persists. |
| If SWALLOWED: | If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person. |

==========

## Section 5 -- FIRE FIGHTING MEASURES

---

EXTINGUSING MEDIA
Foam, dry chemical, carbon dioxide or water fog.
SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus (SCBA) and other protective clothing. Hazardous decomposition products possible (see Section 10).
UNUSUAL FIRE AND EXPLOSION HAZARDS: Heat may build up pressure and rupture closed containers. Above 500 F (260 C) the fumes are acutely toxic.

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## Section 6 -- ACCIDENTAL RELEASE MEASURES

---

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Wipe or scrape up spilled material to prevent footing hazard and place in trash.

## Section 7 -- HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Keep container closed and upright when not in use.

OTHER PRECAUTIONS: Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues; treat as if full and observe all products precautions. Do not reuse empty containers. KEEP OUT OF REACH OF CHILDREN.

## Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION (SPECIFY TYPE): None required.

VENTILATION - LOCAL EXHAUST: N/A

SPECIAL: N/A

MECHANICAL (GENERAL): N/A

OTHER: N/A

PROTECTIVE GLOVES: Wear rubber gloves.

EYE PROTECTION: Chemical splash goggles (ANSI Z-87.1 or equivalent)

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Coveralls recommended.

WORK/HYGIENIC PRACTICES: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

## Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| BOILING POINT: | N/D |
| SPECIFIC GRAVITY (H20 = 1): | 1.32 |
| VAPOR PRESSURE (mm Hg): | < 1 @ 77 F (25 C) |
| MELTING POINT: | N/A |
| VAPOR DENSITY (AIR = 1): | N/A |
| EVAPORATION RATE (ETHYL ACETATE = 1): | N/A |
| APPEARANCE/ODOR: | White Paste/Slight Odor |
| SOLUBILITY IN WATER: | Negligible |
| VOLATILE ORGANIC COMPOUNDS(VOC)Content (Theoretical Percentage By Weight): | 0% or (0 g/L) |
| FLASH POINT | >300 F (149 C) SETA CC |
| LOWER EXPLOSION LIMIT | N/D |
| UPPER EXPLOSION LIMIT | N/D |

## Section 10 -- STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID: None known.

INCOMPATIBILITY (MATERIALS TO AVOID): Gaseous oxygen and strong oxidizing materials.

HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO2 and fragmented hydrocarbons.

HAZARDOUS POLYMERIZATION: Will not occur.

## Section 11 -- TOXICOLOGY INFORMATION

CHRONIC HEALTH HAZARDS

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

TOXICOLOGY DATA

Ingredient Name

| | | |
|---|---|---|
| | Oral-Rat | LD50: N/A |
| | Inhalation-Rat | LC50: N/A |

## Section 12 -- Ecological Information

ECOLOGICAL DATA
Ingredient Name

| | |
|---|---|
| Food Chain Concentration Potential | N/A |
| WATERFOWL TOXICITY | N/A |
| BOD | N/A |
| AQUATIC TOXICITY | N/A |

## Section 13 -- DISPOSAL CONSIDERATIONS

Waste Classification: Non-regulated solid waste
Disposal Method: Approved landfill
Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with Federal, State, and Local regulation regarding pollution.

## Section 14 -- TRANSPORTATION INFORMATION

| | |
|---|---|
| DOT: | Non-Regulated |
| OCEAN (IMDG): | Non-Regulated |
| AIR (IATA): | Non-Regulated |
| WHMIS (CANADA): | Non-Regulated |

## Section 15 -- REGULATORY INFORMATION

REGULATORY DATA
Ingredient Name

| | |
|---|---|
| SARA 313 | N/A |
| TSCA Inventory | All components listed |
| CERCLA RQ | N/A |
| RCRA Code | N/A |

## Section 16 -- OTHER INFORMATION

LABELING SYMBOLS: None
RISK R-PHRASES: None
SAFETY S-PHRASES:
S2 : Keep out of the reach of children.

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). The information herein is given in good faith, but no warranty, expressed or implied is made. Consult RectorSeal for further
information: (713) 263-8001

# Safety data sheet in accordance with 91/155/EEC



## 1. Identification of the substance/preparation and company

**Product details** **REMS SPEZIAL**

**81300**

Recommended use:
Water miscible coolant

Identification of the manufacturer/ supplier

REMS-WERK
Christian Foll und Sohne GmbH Co
Postfach 1631 • D-71306 Waiblingen
Stuttgarter StraBe 83 . D•71_332_ Waiblingen
Tel. +49 (0)7151 1707-0
Fax +49 (0)7151 1707-110
http://www.rems.de

**Emergency phone: +49{0)7161/802-400**
**Advising personal/Phone:** **Product safety: +49{0)7161/802-297**

## 2. Composition/ information on ingredients

**Chemical characterization**
Preparation containing mineral oil with native greases, non-ionic surfactans and organic chlorous components.

Hazardous ingredients:

| EINECS-No. / CAS-No. | Name / R-phrases | Symb. | Cone.-% | |
|---|---|---|---|---|
| | alkyl aryl polyglycol ether | | | |
| | 36/38 | Xi | 3 | 5 |

Additional information:
Meanings of R-phrases see under chapt.16.

## 3. Hazards possibilities

**Hazard designation:**
The product does not require a hazard warning label in accordance with EC directives/ GefStoffV (German regulations on dangerous substances).

## 4. First aid measures

**General information**
Remove contaminated clothing immediately and dispose of safely.
**After skin contact**
In case of contact with skin wash off immediately with plenty of
**After eye contact**
In case of contact with the eyes rinse thoroughly with plenty of water or with an eye-cleaning solution.
In case of irritation consult an occulist.
**After ingestion**
Do not induce vomiting.
Rinse out mouth and plenty of water to drink.
Summon a doctor immediately.

## 5. Firefighting measures

**Suitable extinguishing media**
Foam
Dry powder
Carbon dioxide
**Extinguishing media that must not be used for safety reasons**
Full water jet

**Special exposure hazards arising from the substance or preparation itself, its combustion products or from resulting gases**
In the event of fire the following can be released:
Carbon monoxide (CO)
Carbon dioxide (CO2)
In case of combustion evolution of dangerous gases possible.
HCl
**Special protective equipment for firefighting**
Do not inhale explosion and/or combustion gases.
Use self-contained breathing apparatus.
**Other information**
Cool endangered containers with water spray jet.

## 6. Accidental release measures

**Personal precautions**
Use personal protective clothing.
**Environmental precautions**
Do not discharge into the drains/surface waters/groundwater.
**Methods for cleaning up/taking up**
Take up with absorbent material (eg sand, kieselguhr, universal binder).
Dispose of absorbed material in accordance with the regulations.

## 7. Handling and storage

**Handling**
**Advice on safe handling**
**Use personal protective** clothing.
Open and handle container with care.
Avoid formation of aerosols.
**Advice on protection against fire and explosion**
No special measures necessary.
**Storage**
Requirements for storage rooms and vessels
Protect from frost.
Protect from heat and direct sunlight.
Keep container tightly closed.

## 8. Exposure controls/ personal protection

**Additional hints on technical system design.**
See chapter 7; no measures exeeding the ones mentioned are necessary.
Ingredients with occupational exposure limits to be monitored

| EINECS-No. | Name | Type | Value | Unit |
|---|---|---|---|---|

**Personal protective equipment**
**Respiratory protection**
Breathing apparatus in the event of aerosol or mist formation.
**Hand protection**
Recommendation: Impermeable safety gloves made of nitrile as per EN 374; penetration time more than 480 min. at a thickness of 0.4 mm.
**Eye protection**
Safety glasses with side protection shield
**General protective measures**
Do not inhale gases/vapours/aerosols.
Avoid contact with eyes and skin.
At work do not eat, drink, smoke or take drugs.
Keep away from foodstuffs and beverages.
Wash hands before breaks and after work.

## 9. Physical and chemical properties

| | |
|---|---|
| Form | liquid |
| Colour | light-brown |
| Odour | typical |

| | | Value | Unit | Method |
|---|---|---|---|---|
| **Flash point** | | > 160 | °C | ISO 2592 |
| **Viscosity** | 40 °C | 20 | mm²/s | DIN 51562 |
| **Density:** | 20 °C | 0.94 | g/cm3 | DIN 51757 |
| **Lower explosion limit :** | | 0.6 | Vol.% | |
| **Upper explosion limit:** | | 6.5 | Vol.% | |
| **Solubility in water/ method** | | emulsive | | |
| **Pourpoint** | | n.b. | °C | |
| **Boiling point:** | | n.b. | °C | |
| **Bulk density:** | | n.a. | kg/m3 | |
| **Vapour pressure:** | 20 °C | n.a. | mbar | |
| **pH value:** | 20 °C | 6.0 | | DIN 51369 (100 g/1) |

## 10. Stability and reactivity

**Materials to avoid**

Reactions with strong oxidising agents.

**Hazardous decomposition products**

No hazardous reactions when stored and handled according to prescribed instructions.

## 11. Toxicological information

**General remarks.**

No toxicological data are available.

**Experience in practice**

Keeping to the general worker's protection rules and the industrial hygienics, there is no risk in handling this product through the personnel.

## 12. Ecological information

Do not discharge into the drains/surface waters/groundwater.
The formulation was evaluated using the conventional method of the Dangerous Preparations Directive 1999/45/EC and not classified as hazardous to the environment.

## 13. Disposal considerations

**Product**

**Waste code**

120106 mineral-based machining oils containing halogens (except emulsions and solutions}

The listed waste code numbers, according to the European Waste Catalogue (EWC} , are to be understood as a recommendation. A final decision must be made in agreement with the regional waste disposal company.

**Uncleaned packaging**

Uncontaminated packaging may be taken for recycling.
Packaging that cannot be cleaned should be disposed off in agreement with the regional waste disposal company.

## 14. Transport information

"Product is not subject to the regulations for dangerous goods".

## 15. Regulatory information

**Labelling in accordance with EC directives**

The product does not require a hazard warning label in accordance with EC directives/ GefStoffV (German regulations on dangerous substances}.

**National regulations**

Water hazard class/ source 2
(VwVwS)

TA-Luft/ paragraph (for Germany only):
Not listed.

VbF (Germany)

16. **Other information**

36/38 Irritating to eyes and skin.
The data mentioned in the present safety data sheet correspond to our latest knowledge and experience and may be used to precise safety requirements for the different products. The information given therein is no warranty as to quality.
Please also read our technical data sheet.
Revised chapters:
1,2,3,8,12,16.

n.a.: no applicable
n.b.: no determined

# MATERIAL SAFETY DATA SHEET

## Section 1 – Product & Company Identification

Product Name ..... : RIDGID Dark Thread Cutting Oil
Product Catalog No. ..... : 41590, 70830, 41610, 41600

Company Name ..... : Ridge Tool Company
Address ..... : 400 Clark Street
: Elyria, Ohio 44035-6001
Telephone ..... : 1-800-519-3456 (USA) (8:00 am – 5:00 pm EST, M-F)
Emergency Telephone ..... : call 9-1-1 or local emergency number
Website ……..: www.RIDGID.com

Issue Date ..... : June 13, 2013

## Section 2 – Hazards Identification

EMERGENCY OVERVIEW:

This product is a liquid that is insoluble in water. Direct eye contact may cause minor, short term irritation. Short term skin exposure is not expected to be irritating. Inhalation and ingestion are not anticipated routes of exposure during normal conditions of use.

POTENTIAL HEALTH EFFECTS AND SYMPTOMS FROM SHORT TERM / ACUTE EXPOSURE:

- Eye
  This product is not expected to cause eye irritation under normal conditions of use. Symptoms of slight eye irritation may result when direct contact occurs, or when exposed to high mist levels in poorly ventilated areas.

- Skin
  Short term skin contact is not expected to cause skin irritation. Prolonged or repeated direct exposure to the skin may result in symptoms of irritation and redness. In severe cases, prolonged or repeated contact may result in dermatitis accompanied by symptoms of irritation, itching, dryness, cracking and/or inflammation.

- Inhalation:
  This product has low volatility and so is not expected to cause respiratory tract irritation during normal conditions of use. Exposure to high mist levels in poorly ventilated areas may cause upper respiratory tract irritation and difficulty breathing.

- Ingestion:
  Ingestion may cause slight stomach irritation and discomfort.

- Potential Chronic Health Effects
  No further data known.

- Medical Conditions Aggravated By Exposure:
  No further data known.

- Carcinogenicity:
  This product is not listed as a known or suspected carcinogen by IARC, OSHA or the NTP.

HMIS RATING:

| Health | Flammability | Reactivity | PPE |
|---|---|---|---|
| 1 | 1 | 0 | X |

## Section 3 – Composition / Information On Ingredients

Components listed in this section may contribute to the potential hazards associated with exposure to the concentrate. The product may contain additional non-hazardous or trade secret components.

| Component: | CAS # | % By Weight |
|---|---|---|
| Mineral Oil | 64742-54-7 | > 90 |
| Sulfur Additive Package | Mixture | < 10 |

**This product does not contain silicone.**

Product Name ..... : RIDGID Dark Thread Cutting Oil

## Section 4 – First Aid Measures

EYE CONTACT:

Upon direct eye contact, hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. If irritation is due to exposure to mist or vapors, remove the individual to fresh air. If irritation persists, flush the eyes with clean water until the irritation subsides. If symptoms persist, contact a physician.

SKIN CONTACT:

Remove product from the skin by washing with a mild soap and water. Contaminated clothing should be removed to prevent prolonged exposure. If symptoms of exposure persist, contact a physician.

INHALATION:

Inhalation is not an expected route of exposure. If respiratory irritation or distress occurs, remove the employee to fresh air. Contact a physician or other medical professional if irritation or distress persists.

INGESTION:

If small amounts are ingested, first aid measures are not likely to be necessary. If larger amounts are ingested or if symptoms of ingestion occur, dilute stomach contents with two glasses of water or milk. (NOTE: Do NOT give anything by mouth to an unconscious person.) Do not induce vomiting without medical supervision. If vomiting occurs spontaneously, keep airway clear. If symptoms of ingestion persist, seek medical attention.

## Section 5 – Fire Fighting Measures

FIRE AND EXPLOSIVE PROPERTIES:

| | |
|---|---|
| Flashpoint.....: | 385°F Cleveland Open Cup |
| Flammability Limits.....: | LEL - N/A |
| | UEL - N/A |

EXTINGUISH MEDIA:

In accordance with NFPA guidance, dry chemical, foam or CO2 fire extinguishers are all acceptable. Note that while water fog extinguishers are also acceptable, do NOT apply a direct stream of water onto burning product because it may cause spreading and increase fire intensity.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

No further data known.

FIRE-FIGHTING PROCEDURES AND EQUIPMENT:

Emergency responders in the danger area should wear bunker gear and self-contained breathing apparatus for fires beyond the incipient stage. See Section 8 of the MSDS for other PPE to be worn as conditions warrant.

## Section 6 – Accidental Release Measures

PERSONAL PRECAUTIONS:

Use personal protection recommended in Section 8.

ENVIRONMENTAL:

This material is a water pollutant. Do not let spilled or leaking material enter waterways.

CLEAN-UP MEASURES:

Important: As with any spill or leak, before responding, ensure that you are familiar with the potential hazards and recommendations of the MSDS. Appropriate personal protective equipment must be worn.

If possible, safely contain the spill with dikes or other spill response equipment appropriate for petroleum or organic material releases. Take measures to prevent spreading of product. Note that while product will ignite, it will not readily burn. However, as a precaution, eliminate ignition sources. Prevent from entering sewers or waterways. Large volumes may be transferred to an appropriate container for proper disposal. Small volumes or residues may be soaked up with absorbents. Spill response materials should be collected for proper disposal.

Product Name ..... : RIDGID Dark Thread Cutting Oil

## Section 7 – Handling And Storage

HANDLING:

As with any industrial chemical, handle the product in a manner that minimizes exposure to practicable levels. Prior to handling, consult Section 8 of this MSDS to evaluate personal protective equipment needs. Open containers slowly to relieve any pressure. Follow all other standard industrial hygiene practices.

Empty containers may contain product residue. All safety precautions taken when handling this product should also be taken when handling empty drums and containers. Keep containers closed when not in use.

Product residue in empty containers is combustible but will not readily burn. Note, however, that excessive heating or cutting of empty containers may create an ignition source sufficient to start a fire and, in extreme cases, cause an explosion.

STORAGE:

Protect product quality by storing indoors and away from extreme temperatures. Close all containers when not in use.

## Section 8 – Exposure Controls / Personal Protection

EXPOSURE GUIDELINES:

| Component | | |
|---|---|---|
| Mineral Oil | ACGIH TLV: | 5 mg / m3 (as mist) |
| | ACGIH STEL: | 10 mg / m3 (as mist) |
| | OSHA PEL: | 5 mg / m3 (as mist |
| Sulfur Additive Package | No information | |

ENGINEERING CONTROLS:

Normal general ventilation is expected to be adequate. It is recommended that ventilation be designed in all instances to maintain airborne concentrations at lowest practicable levels. Ventilation should, at a minimum, prevent airborne concentrations from exceeding any exposure limits.

The user may wish to refer to 29 CFR 1910.1000(d) (2) and the ACGIH "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices" (Appendix C) for the determination of exposure limits of mixtures. An industrial hygienist or similar professional may be consulted to confirm that the calculated exposure limits apply.

PERSONAL PROTECTIVE EQUIPMENT:

Selection of personal protective equipment should be based upon the anticipated exposure and made in accordance with OSHA's Personal Protective Equipment Standard found in 29 CFR 1910 Subpart I. The following information may be used to assist in PPE selection.

- Eye Protection
  Wear eye protection appropriate to prevent eye exposure. Where splashing is not likely, chemical safety glasses with side shields are recommended. Where splashing may occur, chemical goggles or full face shield is recommended.

- Skin Protection
  Gloves are not normally needed during normal conditions of use. If health effects are experienced, oil or chemical resistant gloves such as butyl or nitrile are recommended. Where splashing or soaking is likely, wear oil or chemical resistant clothing to prevent exposure.

- Respiratory Protection
  A respirator may be worn to reduce exposure to vapors, dust or mist. Select a NIOSH/MSHA approved respirator appropriate for the type and physical character of the airborne material. A self-contained breathing apparatus is recommended in all situations where airborne contaminant concentration has not been confirmed to be below safe levels. Respirator use should comply with the OSHA Respirator Protection Standard found in 29 CFR 1910.134.

- General Hygiene Considerations
  Wash thoroughly after handling.

Product Name ..... : RIDGID Dark Thread Cutting Oil

## Section 9 – Physical And Chemical Properties

Physical Appearance:..... : Black
Odor. ..... : Mild Petroleum
Physical State ..... : Liquid
Water Solubility ..... : Insoluble
Specific Gravity ..... : .878
VOC ……: 2.5%

## Section 10 – Stability And Reactivity

STABILITY:
This product is stable.

CONDITIONS TO AVOID:
Avoid contact with incompatible materials and exposure to extreme temperatures.

INCOMPATIBLE MATERIALS:
This product is incompatible with strong oxidizing agents.

DECOMPOSITION PRODUCTS MAY INCLUDE:
Thermal decomposition products are dependent on combustion conditions. A complex mixture of airborne solid, liquid, particulates and gasses may evolve when the material burns. Combustion by-products may include:

oxides of carbon

oxides of sulfur

incompletely burned hydrocarbons as fumes and smoke

POSSIBILITY OF HAZARDOUS REACTIONS:
This product is not expected to polymerize

Product Name ..... : RIDGID Dark Thread Cutting Oil

## Section 11 – Toxicological Information

ACUTE:
Oral $LD_{50}$: Not determined
Inhalation $LC_{50}$: Not determined

CHRONIC: No further toxicological data known.

SENSITIZATION: No further toxicological data known.

REPRODUCTIVE EFFECTS: No further toxicological data known.

TERATOGENIC EFFECTS: No further toxicological data known.

MUTAGENICITY: No further toxicological data known.

SYNERGISTIC MATERIALS: No further toxicological data known.

CARCINOGENICITY: This product is not listed as a known or suspected carcinogen by IARC, OSHA or the NTP.

## Section 12 – Ecological Information

ECOTOXICOLOGICAL INFORMATION:
This product has not been evaluated for ecotoxicity. As with any industrial chemical, exposure to the environment should be prevented and minimized wherever possible.

ENVIRONMENTAL FATE:
The degree of biodegradability and persistence of this product has not been determined.

VOC CONTENT:
2.5%

Product Name ..... : RIDGID Dark Thread Cutting Oil

## Section 13 – Disposal Consideration

WASTE DISPOSAL:

Ensure that collection, transport, treatment and disposal of waste product and containers complies with all applicable laws and regulations. Note that use, mixture, processing or contamination of the product may cause the material to be classified as a hazardous waste. It is the responsibility of the product user or owner to determine at the time of disposal whether the product is regulated as a hazardous waste.

## Section 14 – Transportation Information

U.S. DOT HAZARDOUS MATERIAL INFORMATION:

Not DOT regulated.

CANADA TRANSPORT OF DANGEROUS GOODS:

This material is not TDG regulated.

## Section 15 – Regulatory Information

FEDERAL REGULATIONS:

SARA 313:

This product contains NONE of the substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

CLEAN WATER ACT:

This product contains mineral oil and is subject to regulation by Section 311 of the Clean Water Act and the Oil Pollution Act. Releases of the product into or leading to surface waters must be reported to the National Response Center at 1-800-424-8802.

CERCLA REPORTABLE QUANTITY:

Any components listed below have been assigned a reportable quantity (RQ) by the Federal EPA. Releases of the product into the environment that exceed the RQ for a particular component must be reported to the National Response Center at 1-800-424-8802.

None to report

TOXIC SUBSTANCE CONTROL ACT:

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

OZONE DEPLETING SUBSTANCES:

This product contains no ozone depleting substances as defined by the Clean Air Act.

HAZARDOUS AIR POLLUTANTS:

Any components listed below are defined by the Federal EPA as hazardous air pollutants:

None to report

STATE REGULATIONS

This product contains mineral oil, and as used, may be regulated by state used oil regulations. Check with the appropriate state agency to determine whether such a regulation exists.

CANADA

WHMIS Classification: Not controlled under WHMIS

DSL:

The components of this product are listed on DSL Inventory.

Product Name ..... : RIDGID Dark Thread Cutting Oil

## Section 16 – Other Information

Prepared by.....Ridge Tool Company

Issue Date:..... June 13, 2013
Last Revision Date: ..... October 12, 2009

RIDGE TOOL BELIEVES THE STATEMENTS, TECHNICAL INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE RELIABLE BUT THEY ARE GIVEN WITHOUT WARRANTY OR GUARANTEE OF ANY KIND, EXPRESSED OR IMPLIED, AND WE ASSUME NO RESPONSIBILITY FOR ANY LOSS, DAMAGE OR EXPENSE, DIRECT OR CONSEQUENTIAL, ARISING OUT OF THEIR USE.

# MATERIAL SAFETY DATA SHEET

## Section 1 – Product & Company Identification

Product Name.....: RIDGID Nu-Clear Thread Cutting Oil
Product Catalog No. .....: 41565, 70835, 41575, 41585

Company Name.....: Ridge Tool Company
Address .....: 400 Clark Street
: Elyria, Ohio 44036-2023
Telephone .....: 1-800-519-3456 (USA) (8:00 am – 5:00 pm EST, M-F)
Emergency Telephone .....: call 9-1-1 or local emergency number
Website ……..: www.RIDGID.com

Issue Date .....: September 30, 2009

## Section 2 – Hazards Identification

EMERGENCY OVERVIEW:

This product is a liquid that is insoluble in water. Direct eye contact may cause minor, short term irritation. Short term skin exposure is not expected to be irritating. Inhalation and ingestion are not anticipated routes of exposure during normal conditions of use.

POTENTIAL HEALTH EFFECTS AND SYMPTOMS FROM SHORT TERM / ACUTE EXPOSURE:

- Eye
  This product is not expected to cause eye irritation under normal conditions of use. Symptoms of slight eye irritation may result when direct contact occurs, or when exposed to high mist levels in poorly ventilated areas.

- Skin
  Short term skin contact is not expected to cause skin irritation. Prolonged or repeated direct exposure to the skin may result in symptoms of irritation and redness. In severe cases, prolonged or repeated contact may result in dermatitis accompanied by symptoms of irritation, itching, dryness, cracking and/or inflammation.

- Inhalation:
  This product has low volatility and so is not expected to cause respiratory tract irritation during normal conditions of use. Exposure to high mist levels in poorly ventilated areas may cause upper respiratory tract irritation and difficulty breathing.

- Ingestion:
  Ingestion may cause slight stomach irritation and discomfort.

- Potential Chronic Health Effects
  No further data known.

- Medical Conditions Aggravated By Exposure:
  No further data known.

- Carcinogenicity:
  This product is not listed as a known or suspected carcinogen by IARC, OSHA or the NTP.

HMIS RATING:

| Health | Flammability | Reactivity | PPE |
|---|---|---|---|
| 1 | 1 | 0 | X |

## Section 3 – Composition / Information On Ingredients

Components listed in this section may contribute to the potential hazards associated with exposure to the concentrate. The product may contain additional non-hazardous or trade secret components.

| Component: | CAS # | % By Weight |
|---|---|---|
| Mineral Oil | 64742-54-7 | > 95 |
| Sulfur Additive Package | Mixture | < 5 |

**This product does not contain silicone.**

Product Name.....: RIDGID Nu-Clear Thread Cutting Oil

## Section 4 – First Aid Measures

EYE CONTACT:

Upon direct eye contact, hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. If irritation is due to exposure to mist or vapors, remove the individual to fresh air. If irritation persists, flush the eyes with clean water until the irritation subsides. If symptoms persist, contact a physician.

SKIN CONTACT:

Remove product from the skin by washing with a mild soap and water. Contaminated clothing should be removed to prevent prolonged exposure. If symptoms of exposure persist, contact a physician.

INHALATION:

Inhalation is not an expected route of exposure. If respiratory irritation or distress occurs, remove the employee to fresh air. Contact a physician or other medical professional if irritation or distress persists.

INGESTION:

If small amounts are ingested, first aid measures are not likely to be necessary. If larger amounts are ingested or if symptoms of ingestion occur, dilute stomach contents with two glasses of water or milk. (NOTE: Do NOT give anything by mouth to an unconscious person.) Do not induce vomiting without medical supervision. If vomiting occurs spontaneously, keep airway clear. If symptoms of ingestion persist, seek medical attention.

## Section 5 – Fire Fighting Measures

FIRE AND EXPLOSIVE PROPERTIES:

| | |
|---|---|
| Flashpoint.....: | 385°F Cleveland Open Cup |
| Flammability Limits .....: | LEL - N/A |
| | UEL - N/A |

EXTINGUISH MEDIA:

In accordance with NFPA guidance, dry chemical, foam or CO2 fire extinguishers are all acceptable. Note that while water fog extinguishers are also acceptable, do NOT apply a direct stream of water onto burning product because it may cause spreading and increase fire intensity.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

No further data known.

FIRE-FIGHTING PROCEDURES AND EQUIPMENT:

Emergency responders in the danger area should wear bunker gear and self-contained breathing apparatus for fires beyond the incipient stage. See Section 8 of the MSDS for other PPE to be worn as conditions warrant.

## Section 6 – Accidental Release Measures

PERSONAL PRECAUTIONS:

Use personal protection recommended in Section 8.

ENVIRONMENTAL:

This material is a water pollutant. Do not let spilled or leaking material enter waterways.

CLEAN-UP MEASURES:

Important: As with any spill or leak, before responding, ensure that you are familiar with the potential hazards and recommendations of the MSDS. Appropriate personal protective equipment must be worn.

If possible, safely contain the spill with dikes or other spill response equipment appropriate for petroleum or organic material releases. Take measures to prevent spreading of product. Note that while product will ignite, it will not readily burn. However, as a precaution, eliminate ignition sources. Prevent from entering sewers or waterways. Large volumes may be transferred to an appropriate container for proper disposal. Small volumes or residues may be soaked up with absorbents. Spill response materials should be collected for proper disposal.

## Section 7 – Handling And Storage

HANDLING:

As with any industrial chemical, handle the product in a manner that minimizes exposure to practicable levels. Prior to handling, consult Section 8 of this MSDS to evaluate personal protective equipment needs. Open containers slowly to relieve any pressure. Follow all other standard industrial hygiene practices.

Empty containers may contain product residue. All safety precautions taken when handling this product should also be taken when handling empty drums and containers. Keep containers closed when not in use.

Product residue in empty containers is combustible but will not readily burn. Note, however, that excessive heating or cutting of empty containers may create an ignition source sufficient to start a fire and, in extreme cases, cause an explosion.

STORAGE:

Protect product quality by storing indoors and away from extreme temperatures. Close all containers when not in use.

## Section 8 – Exposure Controls / Personal Protection

EXPOSURE GUIDELINES:

Component

| | | |
|---|---|---|
| Mineral Oil | ACGIH TLV:<br>ACGIH STEL:<br>OSHA PEL: | 5 mg / m3 (as mist)<br>10 mg / m3 (as mist)<br>5 mg / m3 (as mist |
| Sulfur Additive Package | No information | |

ENGINEERING CONTROLS:

Normal general ventilation is expected to be adequate. It is recommended that ventilation be designed in all instances to maintain airborne concentrations at lowest practicable levels. Ventilation should, at a minimum, prevent airborne concentrations from exceeding any exposure limits.

The user may wish to refer to 29 CFR 1910.1000(d) (2) and the ACGIH "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices" (Appendix C) for the determination of exposure limits of mixtures. An industrial hygienist or similar professional may be consulted to confirm that the calculated exposure limits apply.

PERSONAL PROTECTIVE EQUIPMENT:

Selection of personal protective equipment should be based upon the anticipated exposure and made in accordance with OSHA's Personal Protective Equipment Standard found in 29 CFR 1910 Subpart I. The following information may be used to assist in PPE selection.

- Eye Protection
  Wear eye protection appropriate to prevent eye exposure. Where splashing is not likely, chemical safety glasses with side shields are recommended. Where splashing may occur, chemical goggles or full face shield is recommended.

- Skin Protection
  Gloves are not normally needed during normal conditions of use. If health effects are experienced, oil or chemical resistant gloves such as butyl or nitrile are recommended. Where splashing or soaking is likely, wear oil or chemical resistant clothing to prevent exposure.

- Respiratory Protection
  A respirator may be worn to reduce exposure to vapors, dust or mist. Select a NIOSH/MSHA approved respirator appropriate for the type and physical character of the airborne material. A self-contained breathing apparatus is recommended in all situations where airborne contaminant concentration has not been confirmed to be below safe levels. Respirator use should comply with the OSHA Respirator Protection Standard found in 29 CFR 1910.134.

- General Hygiene Considerations
  Wash thoroughly after handling.

Product Name.....: RIDGID Nu-Clear Thread Cutting Oil

## Section 9 – Physical And Chemical Properties

Physical Appearance:.....: Clear Yellow
Odor. .....: Mild Petroleum
Physical State.....: Liquid
Water Solubility.....: Insoluble
Specific Gravity.....: .878
VOC .....: 2%

## Section 10 – Stability And Reactivity

STABILITY:
This product is stable at room temperature.

CONDITIONS TO AVOID:
Avoid contact with incompatible materials and exposure to extreme temperatures.

INCOMPATIBLE MATERIALS:
This product is incompatible with strong oxidizing agents.

DECOMPOSITION PRODUCTS MAY INCLUDE:
Thermal decomposition products are dependent on combustion conditions. A complex mixture of airborne solid, liquid, particulates and gasses may evolve when the material burns. Combustion by-products may include:

oxides of carbon

oxides of sulfur

incompletely burned hydrocarbons as fumes and smoke

POSSIBILITY OF HAZARDOUS REACTIONS:
This product is not expected to polymerize

## Section 11 – Toxicological Information

ACUTE:

Oral $LD_{50}$: Not determined
Inhalation $LC_{50}$: Not determined

CHRONIC: No further toxicological data known.

SENSITIZATION: No further toxicological data known.

REPRODUCTIVE EFFECTS: No further toxicological data known.

TERATOGENIC EFFECTS: No further toxicological data known.

MUTAGENICITY: No further toxicological data known.

SYNERGISTIC MATERIALS: No further toxicological data known.

CARCINOGENICITY: This product is not listed as a known or suspected carcinogen by IARC, OSHA or the NTP.

## Section 12 – Ecological Information

ECOTOXICOLOGICAL INFORMATION:

This product has not been evaluated for ecotoxicity. As with any industrial chemical, exposure to the environment should be prevented and minimized wherever possible.

ENVIRONMENTAL FATE:

The degree of biodegradability and persistence of this product has not been determined.

VOC CONTENT:

2%

Product Name.....: RIDGID Nu-Clear Thread Cutting Oil

## Section 13 – Disposal Consideration

WASTE DISPOSAL:

Ensure that collection, transport, treatment and disposal of waste product and containers complies with all applicable laws and regulations. Note that use, mixture, processing or contamination of the product may cause the material to be classified as a hazardous waste. It is the responsibility of the product user or owner to determine at the time of disposal whether the product is regulated as a hazardous waste.

## Section 14 – Transportation Information

U.S. DOT HAZARDOUS MATERIAL INFORMATION:
Not DOT regulated.

CANADA TRANSPORT OF DANGEROUS GOODS:
This material is not TDG regulated.

## Section 15 – Regulatory Information

FEDERAL REGULATIONS:

SARA 313:
This product contains NONE of the substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

CLEAN WATER ACT:
This product contains mineral oil and is subject to regulation by Section 311 of the Clean Water Act and the Oil Pollution Act. Releases of the product into or leading to surface waters must be reported to the National Response Center at 1-800-424-8802.

Product Name.....: RIDGID Nu-Clear Thread Cutting Oil

CERCLA REPORTABLE QUANTITY:

Any components listed below have been assigned a reportable quantity (RQ) by the Federal EPA. Releases of the product into the environment that exceed the RQ for a particular component must be reported to the National Response Center at 1-800-424-8802.

None to report

TOXIC SUBSTANCE CONTROL ACT:

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

OZONE DEPLETING SUBSTANCES:

This product contains no ozone depleting substances as defined by the Clean Air Act.

HAZARDOUS AIR POLLUTANTS:

Any components listed below are defined by the Federal EPA as hazardous air pollutants:

None to report

STATE REGULATIONS

This product contains mineral oil, and as used, may be regulated by state used oil regulations. Check with the appropriate state agency to determine whether such a regulation exists.

CANADA

WHMIS Classification: Not controlled under WHMIS

DSL:

The components of this product are listed on DSL Inventory.

Product Name.....: RIDGID Nu-Clear Thread Cutting Oil

## Section 16 – Other Information

Prepared by:.....Ridge Tool Company

Issue Date:..... September 30, 2009
Last Revision Date:..... September 30, 2009

RIDGE TOOL BELIEVES THE STATEMENTS, TECHNICAL INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE RELIABLE BUT THEY ARE GIVEN WITHOUT WARRANTY OR GUARANTEE OF ANY KIND, EXPRESSED OR IMPLIED, AND WE ASSUME NO RESPONSIBILITY FOR ANY LOSS, DAMAGE OR EXPENSE, DIRECT OR CONSEQUENTIAL, ARISING OUT OF THEIR USE.

# Safety Data Sheet

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|---|---|---|---|
| **Document Group:** | 31-7558-5 | **Version Number:** | 3.00 |
| **Issue Date:** | 05/22/18 | **Supercedes Date:** | 01/25/18 |

## SECTION 1: Identification

**1.1. Product identifier**
3M™ Super Silicone Sealant (Clear), 08661, 08663

**Product Identification Numbers**
60-4550-7160-9, 60-4550-7162-5

**1.2. Recommended use and restrictions on use**

**Recommended use**
Automotive, General purpose bonding and sealing, as well as formed-in-place gasket applications.

**1.3. Supplier's details**

| | |
|---|---|
| **MANUFACTURER:** | 3M |
| **DIVISION:** | Automotive Aftermarket |
| **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

The label elements below were prepared in accordance with OSHA Hazard Communication Standard, 29 CFR 1910.1200. This information may be different from the actual product label information for labels regulated by other agencies.

**2.1. Hazard classification**
Serious Eye Damage/Irritation: Category 2A.
Skin Corrosion/Irritation: Category 2.
Reproductive Toxicity: Category 2.

**2.2. Label elements**
**Signal word**
Warning

**Symbols**
Exclamation mark | Health Hazard |

**Pictograms**

**Hazard Statements**
Causes serious eye irritation.
Causes skin irritation.
Suspected of damaging fertility or the unborn child.

**Precautionary Statements**
**General:**
Keep out of reach of children.

**Prevention:**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves and eye/face protection.
Wash thoroughly after handling.

**Response:**
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
IF exposed or concerned: Get medical advice/attention.

**Storage:**
Store locked up.

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

1% of the mixture consists of ingredients of unknown acute oral toxicity.
11% of the mixture consists of ingredients of unknown acute dermal toxicity.
71% of the mixture consists of ingredients of unknown acute inhalation toxicity.

## SECTION 3: Composition/information on ingredients

| Ingredient | C.A.S. No. | % by Wt |
|---|---|---|
| Siloxanes and Silicones, Di-me, Hydroxy-Terminated | 70131-67-8 | 60 - 100 Trade Secret * |
| Silica | 7631-86-9 | 5 - 10 Trade Secret * |
| Solvent Refined Hydrotreated Middle Distillate | 64742-46-7 | 5 - 10 Trade Secret * |
| Ethyltriacetoxysilane | 17689-77-9 | 1 - 5 Trade Secret * |
| Methyltriacetoxysilane | 4253-34-3 | 1 - 5 Trade Secret * |
| Decamethylcyclopentasiloxane | 541-02-6 | <= 1 Trade Secret * |
| Octamethylcyclotetrasiloxane | 556-67-2 | <= 1 Trade Secret * |
| Poly(dimethylsiloxane) | 63148-62-9 | <= 1 Trade Secret * |
| Polydimethylcyclosiloxane | 69430-24-6 | <= 1 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:**
Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

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

**If Swallowed:**
Rinse mouth. If you feel unwell, get medical attention.

**4.2. Most important symptoms and effects, both acute and delayed**
See Section 11.1. Information on toxicological effects.

**4.3. Indication of any immediate medical attention and special treatment required**
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 | Condition |
|---|---|
| Carbon monoxide | During Combustion |
| Carbon dioxide | 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**
Evacuate area. Ventilate the area with fresh air. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

**6.2. Environmental precautions**
Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or

bodies of water.

**6.3. Methods and material for containment and cleaning up**
Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

# SECTION 7: Handling and storage

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

**7.2. Conditions for safe storage including any incompatibilities**
Store away from oxidizing agents.

# SECTION 8: Exposure controls/personal protection

**8.1. Control parameters**

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

| Ingredient | C.A.S. No. | Agency | Limit type | Additional Comments |
|---|---|---|---|---|
| Decamethylcyclopentasiloxane | 541-02-6 | AIHA | TWA:10 ppm | |
| Octamethylcyclotetrasiloxane | 556-67-2 | AIHA | TWA:10 ppm | |
| Paraffin oil | 64742-46-7 | OSHA | TWA(as mist):5 mg/m3 | |
| SILICA, AMORPHOUS | 7631-86-9 | OSHA | TWA concentration:0.8 mg/m3;TWA:20 millions of particles/cu. ft. | |

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 ventilated enclosure for heat curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control device. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

**8.2.2. Personal protective equipment (PPE)**

**Eye/face protection**

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

Indirect Vented Goggles

**Skin/hand protection**
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.
Gloves made from the following material(s) are recommended: Neoprene
Polymer laminate

**Respiratory protection**

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

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

## SECTION 9: Physical and chemical properties

**9.1. Information on basic physical and chemical properties**

| | |
|---|---|
| **General Physical Form:** | Liquid |
| **Odor, Color, Grade:** | Clear silicone elastomer paste with acetic acid odor. |
| **Odor threshold** | *No Data Available* |
| **pH** | *No Data Available* |
| **Melting point** | *No Data Available* |
| **Boiling Point** | *No Data Available* |
| **Flash Point** | Flash point > 93 °C (200 °F) [*Test Method:*Closed Cup] |
| **Evaporation rate** | *No Data Available* |
| **Flammability (solid, gas)** | Not Applicable |
| **Flammable Limits(LEL)** | *No Data Available* |
| **Flammable Limits(UEL)** | *No Data Available* |
| **Flammable Limits(UEL)** | *No Data Available* |
| **Vapor Pressure** | *No Data Available* |
| **Vapor Density** | *No Data Available* |
| **Density** | 1.0 g/ml |
| **Specific Gravity** | 1.0 [*Ref Std:*WATER=1] |
| **Solubility In Water** | *No Data Available* |
| **Solubility- non-water** | *No Data Available* |
| **Partition coefficient: n-octanol/ water** | *No Data Available* |
| **Autoignition temperature** | *No Data Available* |
| **Decomposition temperature** | *No Data Available* |
| **Viscosity** | *No Data Available* |
| **Hazardous Air Pollutants** | 0 % weight [*Test Method:*Calculated] |
| **Volatile Organic Compounds** | <=3 % weight [*Test Method:*calculated per CARB title 2] |
| **Volatile Organic Compounds** | <=31 g/l [*Test Method:*calculated SCAQMD rule 443.1] |
| **VOC Less H2O & Exempt Solvents** | <=31 g/l [*Test Method:*calculated SCAQMD rule 443.1] |

## SECTION 10: Stability and reactivity

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

**10.2. Chemical stability**
Stable.

**10.3. Possibility of hazardous reactions**
Hazardous polymerization will not occur.

**10.4. Conditions to avoid**
None known.

**10.5. Incompatible materials**
Strong oxidizing agents

**10.6. Hazardous decomposition products**

| Substance | Condition |
|---|---|
| Formaldehyde | Heat |

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:**
May be harmful if inhaled. Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

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

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

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

May cause additional health effects (see below).

**Additional Health Effects:**

**Reproductive/Developmental Toxicity:**
Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

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

**Acute Toxicity**

| Name | Route | Species | Value |
|---|---|---|---|
| Overall product | Dermal | | No data available; calculated ATE >5,000 mg/kg |
| Overall product | Inhalation-Dust/Mist(4 hr) | | No data available; calculated ATE5 - 12.5 mg/l |
| Overall product | Ingestion | | No data available; calculated ATE >5,000 mg/kg |
| Siloxanes and Silicones, Di-me, Hydroxy-Terminated | Dermal | Rabbit | LD50 > 16,000 mg/kg |
| Siloxanes and Silicones, Di-me, Hydroxy-Terminated | Ingestion | Rat | LD50 > 64,000 mg/kg |
| Silica | Dermal | Rabbit | LD50 > 5,000 mg/kg |
| Solvent Refined Hydrotreated Middle Distillate | Dermal | Rabbit | LD50 > 2,000 mg/kg |
| Silica | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 0.691 mg/l |
| Silica | Ingestion | Rat | LD50 > 5,110 mg/kg |
| Solvent Refined Hydrotreated Middle Distillate | Inhalation-Dust/Mist (4 hours) | Rat | LC50 4.6 mg/l |
| Solvent Refined Hydrotreated Middle Distillate | Ingestion | Rat | LD50 > 5,000 mg/kg |
| Ethyltriacetoxysilane | Ingestion | Rat | LD50 1,462 mg/kg |
| Methyltriacetoxysilane | Ingestion | Rat | LD50 1,602 mg/kg |
| Decamethylcyclopentasiloxane | Dermal | Rabbit | LD50 > 15,000 mg/kg |
| Poly(dimethylsiloxane) | Dermal | Rabbit | LD50 > 19,400 mg/kg |
| Decamethylcyclopentasiloxane | Inhalation-Dust/Mist (4 hours) | Rat | LC50 8.7 mg/l |
| Decamethylcyclopentasiloxane | Ingestion | Rat | LD50 > 24,134 mg/kg |
| Octamethylcyclotetrasiloxane | Dermal | Rat | LD50 > 2,400 mg/kg |
| Octamethylcyclotetrasiloxane | Inhalation-Dust/Mist (4 hours) | Rat | LC50 36 mg/l |
| Octamethylcyclotetrasiloxane | Ingestion | Rat | LD50 > 5,000 mg/kg |
| Poly(dimethylsiloxane) | Ingestion | Rat | LD50 > 17,000 mg/kg |

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

| Name | Species | Value |
|---|---|---|
| Silica | Rabbit | No significant irritation |
| Solvent Refined Hydrotreated Middle Distillate | Rabbit | Minimal irritation |
| Ethyltriacetoxysilane | Rabbit | Corrosive |
| Methyltriacetoxysilane | Rabbit | Corrosive |
| Decamethylcyclopentasiloxane | Rabbit | No significant irritation |
| Octamethylcyclotetrasiloxane | Rabbit | Minimal irritation |
| Poly(dimethylsiloxane) | Rabbit | No significant irritation |

**Serious Eye Damage/Irritation**

| Name | Species | Value |
|---|---|---|
| Silica | Rabbit | No significant irritation |
| Solvent Refined Hydrotreated Middle Distillate | Not available | Mild irritant |
| Ethyltriacetoxysilane | similar health hazards | Corrosive |

| | | |
|---|---|---|
| Methyltriacetoxysilane | Rabbit | Corrosive |
| Decamethylcyclopentasiloxane | Rabbit | No significant irritation |
| Octamethylcyclotetrasiloxane | Rabbit | No significant irritation |
| Poly(dimethylsiloxane) | Rabbit | No significant irritation |

## Skin Sensitization

| Name | Species | Value |
|---|---|---|
| Silica | Human and animal | Not classified |
| Decamethylcyclopentasiloxane | Mouse | Not classified |
| Octamethylcyclotetrasiloxane | 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 |
|---|---|---|
| Siloxanes and Silicones, Di-me, Hydroxy-Terminated | In Vitro | Not mutagenic |
| Silica | In Vitro | Not mutagenic |
| Solvent Refined Hydrotreated Middle Distillate | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| Decamethylcyclopentasiloxane | In Vitro | Not mutagenic |
| Decamethylcyclopentasiloxane | In vivo | Not mutagenic |
| Octamethylcyclotetrasiloxane | In Vitro | Some positive data exist, but the data are not sufficient for classification |

## Carcinogenicity

| Name | Route | Species | Value |
|---|---|---|---|
| Silica | Not Specified | Mouse | Some positive data exist, but the data are not sufficient for classification |
| Solvent Refined Hydrotreated Middle Distillate | Dermal | Mouse | Some positive data exist, but the data are not sufficient for classification |
| Decamethylcyclopentasiloxane | Inhalation | Rat | Some positive data exist, but the data are not sufficient for classification |

## Reproductive Toxicity

## Reproductive and/or Developmental Effects

| Name | Route | Value | Species | Test Result | Exposure Duration |
|---|---|---|---|---|---|
| Silica | Ingestion | Not classified for female reproduction | Rat | NOAEL 509 mg/kg/day | 1 generation |
| Silica | Ingestion | Not classified for male reproduction | Rat | NOAEL 497 mg/kg/day | 1 generation |
| Silica | Ingestion | Not classified for development | Rat | NOAEL 1,350 mg/kg/day | during organogenesis |
| Decamethylcyclopentasiloxane | Inhalation | Not classified for female reproduction | Rat | NOAEL 2.43 mg/l | 2 generation |
| Decamethylcyclopentasiloxane | Inhalation | Not classified for male reproduction | Rat | NOAEL 2.43 mg/l | 2 generation |
| Decamethylcyclopentasiloxane | Inhalation | Not classified for development | Rat | NOAEL 2.43 mg/l | 2 generation |
| Octamethylcyclotetrasiloxane | Inhalation | Not classified for male reproduction | Rat | NOAEL 8.5 mg/l | 2 generation |
| Octamethylcyclotetrasiloxane | Ingestion | Toxic to female reproduction | Rabbit | NOAEL 50 mg/kg/day | during organogenesis |
| Octamethylcyclotetrasiloxane | Inhalation | Toxic to female reproduction | Rat | NOAEL 3.6 | 2 generation |

| | | | | | |
|---|---|---|---|---|---|
| | | | | mg/l | |

### Target Organ(s)

### Specific Target Organ Toxicity - single exposure

| Name | Route | Target Organ(s) | Value | Species | Test Result | Exposure Duration |
|---|---|---|---|---|---|---|
| Solvent Refined Hydrotreated Middle Distillate | Inhalation | central nervous system depression \| respiratory irritation | Some positive data exist, but the data are not sufficient for classification | Not available | NOAEL NA | |
| Solvent Refined Hydrotreated Middle Distillate | Ingestion | central nervous system depression | May cause drowsiness or dizziness | Not available | NOAEL NA | |
| Ethyltriacetoxysilane | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | similar health hazards | NOAEL Not available | |
| Methyltriacetoxysilane | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | similar health hazards | NOAEL Not available | |

### Specific Target Organ Toxicity - repeated exposure

| Name | Route | Target Organ(s) | Value | Species | Test Result | Exposure Duration |
|---|---|---|---|---|---|---|
| Silica | Inhalation | respiratory system \| silicosis | Not classified | Human | NOAEL Not available | occupational exposure |
| Decamethylcyclopentasiloxane | Dermal | hematopoietic system \| eyes | Not classified | Rat | NOAEL 1,600 mg/kg/day | 28 days |
| Decamethylcyclopentasiloxane | Inhalation | hematopoietic system \| respiratory system \| liver \| eyes \| kidney and/or bladder | Not classified | Rat | NOAEL 2.42 mg/l | 2 years |
| Decamethylcyclopentasiloxane | Ingestion | liver \| immune system \| respiratory system \| heart \| hematopoietic system \| kidney and/or bladder | Not classified | Rat | NOAEL 1,000 mg/kg/day | 90 days |
| Octamethylcyclotetrasiloxane | Dermal | hematopoietic system | Not classified | Rabbit | NOAEL 960 mg/kg/day | 3 weeks |
| Octamethylcyclotetrasiloxane | Inhalation | liver | Not classified | Rat | NOAEL 8.5 mg/l | 13 weeks |
| Octamethylcyclotetrasiloxane | Inhalation | endocrine system \| immune system \| kidney and/or bladder | Not classified | Rat | NOAEL 8.5 mg/l | 2 generation |
| Octamethylcyclotetrasiloxane | Inhalation | hematopoietic system | Not classified | Rat | NOAEL 8.5 mg/l | 13 weeks |
| Octamethylcyclotetrasiloxane | Ingestion | liver | Not classified | Rat | NOAEL 1,600 mg/kg/day | 2 weeks |

### Aspiration Hazard

| Name | Value |
|---|---|
| Solvent Refined Hydrotreated Middle Distillate | Aspiration hazard |

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

## SECTION 12: Ecological information

### Ecotoxicological information

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

### Chemical fate information

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

## SECTION 13: Disposal considerations

**13.1. Disposal methods**
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

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

## SECTION 14: Transport Information

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

## SECTION 15: Regulatory information

**15.1. US Federal Regulations**
Contact 3M for more information.

**EPCRA 311/312 Hazard Classifications:**

| Physical Hazards |
|---|
| Not applicable |

| Health Hazards |
|---|
| Reproductive toxicity |
| Serious eye damage or eye irritation |
| Skin Corrosion or Irritation |

**This material contains a chemical which requires export notification under TSCA Section 12[b]:**

| Ingredient (Category if applicable) | C.A.S. No | Regulation | Status |
|---|---|---|---|
| Octamethylcyclotetrasiloxane | 556-67-2 | Toxic Substances Control Act (TSCA) 4 Test Rule Chemicals | Applicable |

**15.2. State Regulations**
Contact 3M for more information.

**15.3. Chemical Inventories**
The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

Contact 3M for more information.

**15.4. International Regulations**
Contact 3M for more information.

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

## SECTION 16: Other information

**NFPA Hazard Classification**
**Health:** 2 **Flammability:** 1 **Instability:** 0 **Special Hazards:** None

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

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

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

| | | | |
|---|---|---|---|
| **Document Group:** | 31-7558-5 | **Version Number:** | 3.00 |
| **Issue Date:** | 05/22/18 | **Supercedes Date:** | 01/25/18 |

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# Safety Data Sheet
## acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 06/10/2015 Reviewed on 06/10/2015

## 1 Identification

· **Product identifier**

· **Trade name:** **Lead-Free Solders, Stay Brite®, Stay Brite 8®, Stay Brite® Ultra**
· **Product size:** Variable

· **Other means of identification**
· **SDS Number:** 0125

· **Recommended use and restriction on use**
· **Recommended use:** Metal soldering
· **Restrictions on use:** No further relevant information available.

· **Manufacturer/Importer/Supplier/Distributor information**
· **Manufacturer/Supplier:**
Harris Products Group
4501 Quality Place
Mason, Ohio 45040 US
513-754-2000

· **Safety Data Sheet Questions:** salesinfo@jwharris.com
· **Arc Welding Safety Information:** www.lincolnelectric.com/safety

· **24-Hour Emergency Response Telephone Numbers:**
1-866-519-4752 (USA, Canada, Mexico only)

(+) 1-760-476-3962

· **3E Company Access Code:** 333895

## 2 Hazard(s) identification

Classified according to the criteria of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS), OSHA Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Controlled Products Regulations.

· **Classification of the substance or mixture**
The product is not classified as hazardous according to the Globally Harmonized System (GHS).
· **Additional information:**
0 percent of the mixture consists of ingredient(s) of unknown toxicity.
There are no other hazards not otherwise classified that have been identified.

· **Label elements**
· **GHS label elements**
The product is not classified as hazardous according to OSHA GHS regulations within the United States.
· **Hazard pictograms** Not Regulated
· **Signal word** Not Regulated

· **Hazard-determining components of labeling:** None.
· **Hazard statements** Not Regulated

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# Safety Data Sheet
## acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 06/10/2015 Reviewed on 06/10/2015

**Trade name: Lead-Free Solders, Stay Brite®, Stay Brite 8®, Stay Brite® Ultra**

(Contd. of page 1)

· **Precautionary statements** Not Regulated
· **Additional information:**
· **Other hazards which do not result in GHS classification:**
Heat rays (infrared radiation) from flame or hot metal can injure eyes. Overexposure to soldering fumes andgases can be hazardous. Read and understand the manufacturer's instructions, Safety Data Sheets andthe precautionary labels before using this product.
· **Hazard description:**
· **WHMIS-symbols:** Not hazardous under WHMIS.

## 3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

| · **Dangerous components:** | | |
|---|---|---|
| 7440-31-5 | tin | 94-97% |
| 7440-22-4 | silver | 3-6% |

· **Additional information:**
For the listed ingredients, the identity and exact percentages are being withheld as a trade secret.
· **Composition comments:**
The term "Hazardous Ingredients" should be interpreted as a term defined in Hazard Communication standards and does not necessarily imply the existence of a hazard. The product may contain additional nonhazardous ingredients or may form additional compounds under the condition of use. Refer to Sections 2 and 8 for more information.

## 4 First-aid measures

· **Description of first aid measures**
· **General information:** No special measures required.
· **After inhalation:**
Move to fresh air if breathing is difficult. If breathing has stopped, perform artificial respiration and obtain medical assistance at once.
· **After skin contact:**
Remove contaminated clothing and wash the skin thoroughly with soap and water. For reddened or blistered skin, or thermal burns, obtain medical assistance at once.
· **After eye contact:**
Dust or fume from this product should be flushed from the eyes with copious amounts of clean, tepid water until transported to an emergency medical facility. Do not allow victim to rub or keep eyes tightly closed. Obtain medical assistance at once.
· **After swallowing:**
Unlikely due to form of product, except for granular materials. Avoid hand, clothing, food, and drink contact with metal fume or powder which can cause ingestion of particulate during hand to mouth activities such as drinking, eating, smoking, etc. If ingested, do not induce vomiting. Contact a poison control center. Unless the poison control center advises otherwise, wash out mouth thoroughly with water. If symptoms develop, seek medical attention at once.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed**
No further relevant information available.

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# Safety Data Sheet
## acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 06/10/2015 Reviewed on 06/10/2015

**Trade name: Lead-Free Solders, Stay Brite®, Stay Brite 8®, Stay Brite® Ultra**

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· **Danger**
Soldering hazards are complex and may include physical and health hazards such as but not limited to infrared radiation from flame or hot metal, physical strains, thermal burns due to hot metal or spatter and potential health effects of overexposure to brazing fume or dust. Refer to Section 11 for more information.

· **Indication of any immediate medical attention and special treatment needed** Treat symptomatically.

## 5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:**
As shipped, the product will not burn. In case of fire in the surroundings: use appropriate extinguishing agent.
For metal fires: Use specific agents only.

· **For safety reasons unsuitable extinguishing agents:** For metal fires: Use specific agents only.

· **Special hazards arising from the substance or mixture**
Infrared radiation from flame or hot metal can ignite combustibles and flammable products.

· **Advice for firefighters**

· **Special fire fighting procedures:**
Use standard firefighting procedures and consider the hazards of other involved materials.

· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.

· **Additional information**
Read and understand American National Standard Z49.1, "Safety In Welding, Cutting and Allied Processes" and National Fire rotection Association NFPA 51B, "Standard for Fire Prevention During Welding, Cutting and Other Hot Work" before using this product.

## 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
If airborne dust and/or fume is present, use adequate engineering controls and, if needed, personal protection to prevent overexposure. Refer to recommendations in Section 8.

· **Environmental precautions:**
Avoid release to the environment.
Prevent further leakage or spillage if safe to do so.

· **Methods and material for containment and cleaning up:**
Clean up spills immediately, observing precautions in the personal protective equipment in Section 8. Avoid generating dust. Prevent product from entering any drains, sewers or water sources.
Pick up mechanically.
Send for recovery or disposal in suitable receptacles.
Dispose contaminated material as waste according to item 13.

· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

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# Safety Data Sheet
## acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 06/10/2015 Reviewed on 06/10/2015

**Trade name: Lead-Free Solders, Stay Brite®, Stay Brite 8®, Stay Brite® Ultra**

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## 7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Prevent formation of dust.
Ensure good ventilation/exhaustion at the workplace.
Any deposit of dust which cannot be avoided must be regularly removed.
Read and understand the manufacturer's instruction and the precautionary label on the product. Refer to Lincoln Safety Publications at www.lincolnelectric.com/safety. See American National Standard Z49.1, "Safety In Welding, Cutting and Allied Processes" published by the American Welding Society, http://pubs.aws.org and OSHA Publication 2206 (29CFR1910), U.S. Government Printing Office, www.gpo.gov.
· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Store in closed original container in a dry place. Store away from incompatible materials. Store in accordance with local/regional/national regulations.
· **Information about storage in one common storage facility:** No special requirements.
· **Further information about storage conditions:** No special requirements.
· **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**
· **Exposure Guidelines:**
Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs) are values published by the American Conference of Government Industrial Hygienists (ACGIH). ACGIH Statement of Positions Regarding the TLVs® and BEIs® states that the TLV-TWA should be used as a guide in the control of health hazards and should not be used to indicate a fine line between safe and dangerous exposures. See Sections 2, 3, 8, 10, and 11 for information on potential fume constituents of health interest. Threshold Limit Values are figures published by the American Conference of Government Industrial Hygienists.
· **Components with limit values that require monitoring at the workplace:**
These components may be present

| **7440-31-5 tin** | |
|---|---|
| PEL (USA) | Long-term value: 2 mg/m³<br>metal |
| REL (USA) | Long-term value: 2 mg/m³ |
| TLV (USA) | Long-term value: 2 mg/m³<br>metal |
| EL (Canada) | Long-term value: 2 mg/m³<br>metal |
| EV (Canada) | Long-term value: 2* 0.1** mg/m³<br>*metal, oxide, inorg. compds.;**org. compds.: Skin |

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# Safety Data Sheet
## acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 06/10/2015 Reviewed on 06/10/2015

**Trade name: Lead-Free Solders, Stay Brite®, Stay Brite 8®, Stay Brite® Ultra**

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| | |
|---|---|
| LMPE (Mexico) | Long-term value: 2* mg/m³<br>*metal |
| **7440-22-4 silver** | |
| PEL (USA) | Long-term value: 0.01 mg/m³ |
| REL (USA) | Long-term value: 0.01 mg/m³ |
| TLV (USA) | Long-term value: 0.1 mg/m³<br>metal: dust and fume |
| EL (Canada) | Short-term value: 0.03 mg/m³<br>Long-term value: 0.01 mg/m³<br>as Ag |
| EV (Canada) | Long-term value: 0.1* 0.01** mg/m³<br>*metal;**water-soluble compdounds (as silver) |
| LMPE (Mexico) | Long-term value: 0.1 mg/m³<br>Metal, polvos y humos |

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Do not eat, drink or smoke when using the product. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits. See ANSI/AWS F1.1, F1.2, F1.3 and F1.5, available from the American Welding Society, www.aws.org.

Keep away from foodstuffs, beverages and feed.

· **Engineering controls:** No further relevant information available.

· **Ventilation**

Use enough ventilation, local exhaust at the the flame or heat source, or both to keep the fumes and gases from the worker's breathing zone and the general area. Train the operator to keep his head out of the fumes. Keep exposure as low as possible.

· **Breathing equipment:**

Keep your head out of fumes. Use enough ventilation and local exhaust to keep fumes and gases from your breathing zone and the general area. An approved respirator should be used unless exposure assessments are below applicable exposure limits.

· **Protection of hands:**

Thermally-protective gloves.

Suitable gloves can be recommended by the glove supplier.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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# Safety Data Sheet
## acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 06/10/2015 Reviewed on 06/10/2015

**Trade name: Lead-Free Solders, Stay Brite®, Stay Brite 8®, Stay Brite® Ultra**

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· **Eye protection:**

Wear glasses or face shield with appropriate shading for brazing operations.

· **Body protection:** Protective work clothing
· **Limitation and supervision of exposure into the environment** No special requirements.
· **Risk management measures** No special requirements.

## 9 Physical and chemical properties

| | |
|---|---|
| · **Information on basic physical and chemical properties** | |
| · **General Information** | |
| · **Appearance:** | |
| **Form:** | Solid material |
| **Color:** | According to product specification |
| · **Odor:** | Odorless |
| · **Odor threshold:** | Not determined. |
| · **pH-value:** | Not applicable. |
| · **Change in condition** | |
| **Melting point/Melting range:** | Undetermined. |
| **Boiling point/Boiling range:** | Undetermined. |
| · **Flash point:** | Not applicable. |
| · **Flammability (solid, gaseous):** | Not determined. |
| · **Auto-ignition temperature:** | Not determined. |
| · **Decomposition temperature:** | Not determined. |
| · **Auto igniting:** | Product is not self-igniting. |
| · **Danger of explosion:** | Product does not present an explosion hazard. |
| · **Explosion limits:** | |
| **Lower:** | Not determined. |
| **Upper:** | Not determined. |
| · **Vapor pressure:** | Not applicable. |
| · **Density:** | Not determined. |
| · **Relative density** | Not determined. |
| · **Vapour density** | Not applicable. |
| · **Evaporation rate** | Not applicable. |
| · **Solubility in / Miscibility with** | |
| **Water:** | Insoluble. |
| · **Partition coefficient (n-octanol/water):** | Not determined. |

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# Safety Data Sheet
## acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 06/10/2015 Reviewed on 06/10/2015

**Trade name: Lead-Free Solders, Stay Brite®, Stay Brite 8®, Stay Brite® Ultra**

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| | |
|---|---|
| · **Viscosity:** | |
| **Dynamic:** | Not applicable. |
| **Kinematic:** | Not applicable. |
| · **Other information** | No further relevant information available. |

## 10 Stability and reactivity

· **Reactivity** The product is non-reactive under normal conditions of use, storage and transport.
· **Chemical stability** Stable under normal temperatures and pressures.
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
· **Possibility of hazardous reactions**
Reacts with strong acids and alkali.
Reacts with strong oxidizing agents.
· **Conditions to avoid** Avoid heat or contamination.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:**
Solderinging fumes and gases cannot be classified simply. The composition and products: quantity of both aredependent upon the metal being joined, the process, procedure and filler metals and flux used. Otherconditions which also influence the composition and quantity of the fumes and gases to which workersmay be exposed include: coatings on the metal being joined (such as paint, plating, or galvanizing), thenumber of operators and the volume of the worker area, the quality and amount of ventilation, the positionof the operator's head with respect to the fume and fumes from chemical fluxes used in some soldering operations.
When the wire or rod is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in Section 3, plus those from the base metal and coating, etc., as noted above.

## 11 Toxicological information

· **Information on likely routes of exposure**
· **Ingestion:**
Unlikely route of exposure.
Health injuries from ingestion are not known or expected under normal use.
· **Inhalation:**
Potential chronic health hazards related to the use of welding consumables are most applicable to the inhalation route of exposure.
· **Skin Contact:** Heat rays can burn skin.
· **Eye Contact:** Heat rays (infrared radiation from flame) or hot metal can injure eyes.
· **Information on toxicological effects**
· **Inhalation**
Short-term (acute) overexposure to soldering fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratoryproblems (e.g. asthma, emphysema). Long-term (chronic) overexposure to brazing fumes can lead tosiderosis (iron deposits in lung), central nervous system effects, bronchitis and other pulmonary effects.

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# Safety Data Sheet
## acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 06/10/2015 Reviewed on 06/10/2015

**Trade name: Lead-Free Solders, Stay Brite®, Stay Brite 8®, Stay Brite® Ultra**

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· **Acute toxicity:**
· **LD/LC50 values that are relevant for classification:** None.
· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **in the respiratory system:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**

Organic polymers may be used in the manufacture of various welding consumables. Overexposure to their decomposition byproducts may result in a condition known as polymer fume fever. Polymer fume fever usually occurs within 4 to 8 hours of exposure with the presentation of flu like symptoms, including mild pulmonary irritation with or without an increase in body temperature. Signs of exposure can include an increase in white blood cell count. Resolution of symptoms typically occurs quickly, usually not lasting longer than 48 hours.
The product is not subject to classification according to internally approved calculation methods for preparations:
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

· **Carcinogenic categories**

| · **IARC (International Agency for Research on Cancer)** |
|---|
| None of the ingredients is listed. |
| · **NTP (National Toxicology Program)** |
| None of the ingredients is listed. |
| · **OSHA-Ca (Occupational Safety & Health Administration)** |
| None of the ingredients is listed. |

· **Other information relevant to carcinogenicity**
Cancerous lesions have been reported in persons exposed to arc rays.
· **Germ cell mutagenicity**
· **In vitro:** Not classified
· **In vivo** 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

## 12 Ecological information

· **Persistence and degradability**
Inorganic product, is not eliminable from water by means of biological cleaning processes.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Negative ecological effects are, according to the current state of knowledge, not expected.

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# Safety Data Sheet
## acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 06/10/2015 Reviewed on 06/10/2015

**Trade name: Lead-Free Solders, Stay Brite®, Stay Brite 8®, Stay Brite® Ultra**

(Contd. of page 8)

· **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:**
The generation of waste should be avoided or minimized whenever possible. When practical, recycle in an environmentally acceptable, regulatory compliant manner. Dispose of non-recyclable products in accordance with all applicable Federal, State, Provincial, and Local requirements.
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

| | |
|---|---|
| · **UN-Number**<br>· **DOT, ADR, ADN, IMDG, IATA** | Not Regulated |
| · **UN proper shipping name**<br>· **DOT, ADR, ADN, IMDG, IATA** | Not Regulated |
| · **Transport hazard class(es)**<br>· **DOT, ADR, ADN, IMDG, IATA**<br>· **Class** | Not Regulated |
| · **Packing group**<br>· **DOT, ADR, IMDG, IATA** | Not Regulated |
| · **Environmental hazards:**<br>· **Marine pollutant:** | No |
| · **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":** | - |

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# Safety Data Sheet
## acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 06/10/2015 Reviewed on 06/10/2015

**Trade name: Lead-Free Solders, Stay Brite®, Stay Brite 8®, Stay Brite® Ultra**

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## 15 Regulatory information

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

· **US Federal Regulations**

None of the ingredients is listed.

· **US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**
None present or none present in regulated quantities.

· **SARA**

· **Section 302 (extremely hazardous substances)**

None of the ingredients is listed.

· **Section 304 (emergency release notification)**

None of the ingredients is listed.

· **Sections 311/312 (hazardous chemical threshold planning quantity in pounds)**

None of the ingredients is listed.

· **Section 313 (TRI reporting)**

| | |
|---|---|
| 7440-22-4 | silver |

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **CERCLA Hazardous Substance List (40 CFR 302.4):**

| | |
|---|---|
| 7440-22-4 | silver |

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)**
None present or none present in regulated quantities.

· **Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):**
None present or none present in regulated quantities.

· **Proposition 65 (California)**

· **Chemicals known to cause cancer:**

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 is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

| | | |
|---|---|---|
| 7440-22-4 | silver | D |

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

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| · **NIOSH-Ca (National Institute for Occupational Safety and Health)** |
|---|
| None of the ingredients is listed. |

· **State Right to Know Listings**

| · **US. New Jersey Worker and Community Right-to-Know Act** |
|---|
| tin |
| silver |
| · **US. Massachusetts RTK - Substance List** |
| tin |
| silver |
| · **US. Pennsylvania RTK - Hazardous Substances** |
| tin |
| silver |
| · **US. Rhode Island RTK** |
| tin |
| silver |

· **Canada**
· **Canadian Controlled Products Regulations:** Not hazardous under WHMIS.
· **Canadian substance listings:**

| · **Canadian Domestic Substances List (DSL)** |
|---|
| All ingredients are listed. |
| · **Canada Non-Domestic Substances List (NDSL)** |
| None of the ingredients is listed. |
| · **Canadian Ingredient Disclosure list (limit 0.1%)** |
| None of the ingredients is listed. |
| · **Canadian Ingredient Disclosure list (limit 1%)** |
| All ingredients are listed. |

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

· **Date of preparation / last revision** 06/10/2015 / -

· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

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# Safety Data Sheet
## acc. to OSHA GHS (29 CFR 1910.1200)

Printing date 06/10/2015 Reviewed on 06/10/2015

**Trade name: Lead-Free Solders, Stay Brite®, Stay Brite 8®, Stay Brite® Ultra**

(Contd. of page 11)

· **Sources**

SDS Prepared by:
ChemTel Inc.
1305 North Florida Avenue
Tampa, Florida USA 33602-2902
Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573
Website: www.chemtelinc.com

· **Disclaimer:**

We urge each end user and recipient of this SDS to study it carefully. If necessary consult an industrial hygienist or other expert to understand this information and safeguard the environment and protect workers from potential hazards associated with the handling or use of this product.

Harris Products Group cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for use, handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

# Material Safety Data Sheet

Cast Iron (Tyler Pipe)

Date Printed: 12/15/00
MSDS Date: 2/18/99

## Section 1: Product and Company Identification

**Product Name:** Cast Iron
**Synonyms:**
**Chemical Name:**
**Chemical Family:**
**Chemical Formula:** N/A
**Manufacturer:** Tyler Pipe Company
**Division:**
**Address:** P.O. Box 2027
Tyler, TX 75710-2027
**Phone Number:** (903) 882-2226
**FAX:** (903) 882-2222
**Prepared By:**
**Product Use:**
**Section 1 Notes:**

## Section 2: Composition/Information on Ingredients

**Carbon** CAS #: 133-86-4 SARA 313 Reportable: No
OSHA PEL: OSHA STEL: OSHA Ceiling:
ACGIH TLV: 3.5 mg/m3 ACGIH STEL: ACGIH Ceiling:

**Chromium** CAS#: 7440-47-3 SARA 313 Reportable: No
OSHA PEL: OSHA STEL: OSHA Ceiling:
ACGIH:TLV 0.5 NA ACGIH STEL: ACGIH Ceiling

**Iron:** CAS#: 1307-37-1 SARA 313 Reportable: No
OSHA PEL: OSHA STEL: OSHA Ceiling:
ACGIH TLV: 5mg/m3 ACGIH STEL: ACGIH Ceiling

**Manganese:** CAS#: 007439-96-5 SARA 313 Reportable: No
OSHA PEL: OSHA STEL: OSHA Ceiling:
ACGIH TLV: ACGIH STEL: ACGIH Ceiling:

**Molybdenum** CAS#: 7439-98-7 SARA 313 Reportable: No
OSHA PEL: OSHA STEL: OSHA Ceiling:
ACGIH TLV: ACGIH STEL: ACGIH Ceiling:

**Nickel** CAS#: 7440-02-0 SARA 313 Reportable: No
OSHA PEL: OSHA STEL: OSHA Ceiling:
ACGIH TLV: ACGIH STEL: ACGIH Ceiling:

**Phosphorus** CAS#: 7723-14-0 SARA 313 Reportable: No
OSHA PEL: OSHA STEL: OSHA Ceiling:
ACGIH TLV: ACGIH STEL: ACGIH Ceiling:

**Silicon** CAS#: 7440-21-3 SARA 313 Reportable: No
OSHA PEL: OSHA STEL: OSHA Ceiling:
ACGIH TLV: ACGIH STEL: ACGIH Ceiling:

**Sulfur** CAS#: 7404-34-9 SARA 313 Reportable: No
OSHA PEL: OSHA STEL: OSHA Ceiling:
ACGIH TLV: NA NA ACGIH STEL: ACGIH Ceiling

**Section 2 Notes:**

# Material Safety Data Sheet

Cast Iron (Tyler Pipe)

Date Printed: 12/15/00
MSDA Date: 2/18/99

## Section 3: Hazards Identification

**Emergency Overview:**
**Routes of Entry:** NA
**Potential Health Effects**
**Eyes:**
**Skin:**
**Ingestion:**
**Inhalation:**
**Chronic Health Hazards:** NA
**Conditions Aggravated by Exposure** NA
**Carcinogenicity** **OSHA:** No **ACGIH:** No **NTP:** Yes **Other:** CHROMIUM (Suspected)
NICKEL (Suspected)

**Section 3 Notes:**

## Section 4 First Aid Measures

**Eyes:** FLUSH WITH LARGE AMOUNTS OF WATER.
**Skin:** IF DUST OR MIST GETS ON THE SKIN WASH THE CONTAMINATED SKIN WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING AND LAUNDER BEFORE USING AGAIN.
**Ingestion:** NA
**Inhalation:** IF ACUTE OVEREXPOSURE TO FUMES OCCURS, REMOVE VICTIM FROM THE ADVERSE ENVIRONMENT AND SEEK MEDICAL ATTENTION.
**Notes to First Aid Providers:**
**Section 4 Notes:**

## Section 5: Fire-Fighting Measures

**Flammable Limits in Air** **Upper:** NA **Lower:** NA **Method Used:** NA
**Flash Point:** NA F C
**Autoignition Temp:** NA F C
**FFPA Hazard Classification Health:** **Flammability:** **Reactivity:** **Other:**
**HMIS Hazard Classification Health:** **Flammability** **Reactivity:** **Protection:**
**Extinguishing Media:**
**Special Fire Fighting Procedures:** NA
**Unusual Fire and Explosion Hazards:** NA
**Hazardous Decomposition Products:**
**Section 5 Notes:**

## Section 6: Accidental Release Measures

**Accidental Release Measures:** Material in solid form.

## Section 7: Handling and Storage

**Handling and Storage:**

## Section 8: Exposure Control/Personal Protection

**Engineering Controls:**
**Ventilation:** LOCAL EXHAUST: If needed MECHANICAL (GENERAL): If needed
**Respiratory Protection:**
**Eye Protection:** If Welding or Grinding use appropriate eye protection.
**Skin Protection:** Protective equipment optional.
**Other Protective Clothing or Equipment:** NA
**Work Hygienic Practices:** NA
**Exposure Guidelines:**
**Section 8 Notes:**

# Material Safety Data Sheet
## CAST IRON (TYLER PIPE)

Date Printed: 12/15/00
MSDS Date: 2/18/99

## Section 9: Physical and Chemical Properties

**Appearance:** Grey colored metal
**Physical State:**
**Odor:** None
**Vapor Pressure (mmHg):** NA@ F C
**Vapor Density (Air=1)** NA@ F C
**Specific Gravity (H20=1):** 7.03
**Evaporation rate:** NA **Basis**
**Percent Solids by Weight:** **Percent Volatile by Weight:**
**Volatile Organic Compounds (VOC):** NA
**Section: 9 Notes:**

**pH as Supplied:** NA **pH at Dilution:**
**Boiling Point:** F C
**Melting Point:** 2300F C
**Freezing Point:** F C
**Viscosity:** @ F C
**Molecular Weight** NA F C
**Solubility in Water:**
**by Volume:** @ F C

## Section 10: Stability and Reactivity

**Stable:** **Hazardous Polymerization** 3
**Conditions to Avoid:**
**Hazardous Polymerization:**
**Incompatibilities:**
**Hazardous Decomposition:** NA
**Section10 Notes:**

## Section 11: Toxicological Information

**Toxicological Information**

## Section 12: Ecological Information

**Ecological Information**

## Section 13: Disposal Considerations

**Waste Disposal Method:** Dispose of in accordance with appropriate Federal, State, and Local regulations.
**RCRA Hazard Class:**
**Section 13 Notes:**

## Section 14: Transport Information

**Proper Shipping Name:**
**Shipping Instructions:**
**Shipping Hazards:**
**Labels:**
**Other Agencies:**
**Section 14 Notes:**

UN/NA Type:
UN/NA Number:
U.S.D.O.T. ID Number:
Packing Group:

## Section 15: Regulatory Information

**T.S.C.A.**
**U.S. Federal:**
**International:**
**SARA 311/312** **Fire:** No **Pressure:** No **Reactivity:** No **Delayed:** No **Immediate:** No
**Section 15 Notes:**

**C.E.R.C.L.A.**
**State:**

## Section 16: Other Information

**Preparation Information:**
**Disclaimer:**
**Section 16 Notes:**

**Label Statement:**

# *Material Safety Data Sheet*

**Tyseal 27-A Pipe Joint Lubricant** Date of Preparation: August 1998/**Revised 12/2009**

## Section 1 - Chemical Product and Company Identification

**Product/Chemical Name:** Tyseal 27-A Pipe Joint Lubricant
**Chemical Formula:** 88-6R7
**Manufacturer:** JTM Products, Inc., 31025 Carter Street, Solon, OH 44139, Phone (440) 287-2302, FAX (440) 287-3095 (CHEM-TEL 24-hour emergency: (800) 255-3924)

## Section 2 - Composition / Information on Ingredients

Proprietary blend of soap [CAS#61790-44-1], glycol [CAS#57-55-6]and filler [CAS#12001-26-2].
**revised February 2005 - John Cahoon**

## Section 3 - Hazards Identification

******* Emergency Overview *******

**HMIS**
**H** 1
**F** 0
**R** 0
**PPE†**
†Sec. 8

### Potential Health Effects

**Primary Entry Routes:** Not Hazardous
**Carcinogenicity:** IARC, NTP, and OSHA do not list the ingredients in Tyseal 27-A Pipe Joint Lubricant as carcinogens.

## Section 4 - First Aid Measures

**Eye Contact:** Flush with copious volumes of water for 15 minutes while holding eyelids open.
**Skin Contact:** Wash with water.
***If irritation persists, call a physician.***

## Section 5 - Fire-Fighting Measures

**Flash Point:** >220 °F (>104 °C)
**Flash Point Method:** NA, contains water
**Autoignition Temperature:** NA
**LEL:** NA
**UEL:** NA
**Flammability Classification:** 0

NFPA
0
1 0
—

**Extinguishing Media:** Water, water fog, alcohol foam, carbon dioxide or dry chemical are all suitable.
**Unusual Fire or Explosion Hazards:** None
**Hazardous Combustion Products:** None
**Fire-Fighting Instructions:** Do not release runoff from fire control methods to sewers or waterways.
**Fire-Fighting Equipment:** Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode.

## Section 6 - Accidental Release Measures

**Spill /Leak Procedures:** This product is a biodegradable soap.
**Containment:** For large spills, dike far ahead of spill for later disposal.
**Cleanup:** Place the bulk of any spilled material into drums, then rinse any remaining material to sewage treatment facility, in accordance with any applicable regulations.
**Regulatory Requirements:** Follow applicable OSHA regulations (29 CFR 1910.120).

## Section 7 - Handling and Storage

**Handling Precautions:** No special precautions are required.
**Storage Requirements:** No special precautions are required.
**Regulatory Requirements:** No known regulatory requirement for handling and storage.

## Section 8 - Exposure Controls / Personal Protection

**Engineering Controls:**
**Ventilation:** Provide general or local exhaust ventilation systems.
**Administrative Controls:**
**Respiratory Protection:** If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

**Protective Clothing/Equipment:** Wear chemically protective gloves to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.
**Safety Stations:** Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.
**Contaminated Equipment:** Launder before reuse. Remove this material from your shoes and clean personal protective equipment.
**Comments:** Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

## Section 9 - Physical and Chemical Properties

**Physical State:** Paste
**Appearance and Odor:** amber paste, bland odor
**Odor Threshold:** NA
**Vapor Pressure:** NA
**Vapor Density (Air=1):** NA
**Formula Weight:** NA (blend)
**Density:** 8.3 lbs./gal.
**Specific Gravity ($H_2O$=1, at 4 °C):** 1.0
**pH:** 11

**Water Solubility:** complete solubility in water
**Boiling Point:** >220 °F
**Freezing/Melting Point:** <32 °F
**Viscosity:** viscous paste
**Refractive Index:** unknown
**Surface Tension:** unknown
**% Volatile:** 28 **[Revised April 2006]**
**Evaporation Rate:** NA

## Section 10 - Stability and Reactivity

**Stability:** Tyseal 27-A Pipe Joint Lubricant is stable at room temperature in closed containers under normal storage and handling conditions.
**Polymerization:** Hazardous polymerization will not occur.
**Chemical Incompatibilities:**
**Conditions to Avoid:** Avoid contact with strong oxidizing agents. **[Revised April 2006]**
**Hazardous Decomposition Products:** Thermal oxidative decomposition of Tyseal 27-A Pipe Joint Lubricant can produce oxides of carbon and nitrogen.

## Section 11- Toxicological Information

### Toxicity Data:

**Eye Effects:** Eye irritant [based on blended ingredients].
**Skin Effects:** Slight skin irritant if allowed to remain in contact.

## Section 12 - Ecological Information

**Ecotoxicity:** **Environmental Fate**
**Environmental Transport:** Unknown. **Environmental Degradation:** Soaps are well known to be biodegradable.
**Soil Absorption/Mobility:** Unknown.

## Section 13 - Disposal Considerations

**Disposal:** Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.

## Section 14 - Transport Information

**Not hazardous under DOT regulations.**

## Section 15 - Regulatory Information

**EPA Regulations:** None apply.

## Section 16 - Other Information

**Prepared By:** B. Noragon **Approved By:** B. Roll
**Disclaimer:** JTM PRODUCTS, INC. makes no warranty, expressed or implied, as to the accuracy, completeness, or reliability of information contained herein, except that such information is, to the best of JTM's knowledge and belief, accurate as of the date indicated. It is for the purchaser and/or user to decide whether this information is suitable for his purposes.
**Reviewed/Section 2 revised February 2005 by John Cahoon; Reviewed/Section 9 & 10 revised April 2006 by John Cahoon; Reviewed and revised December 2009 by D. Barrer**

# SAFETY DATA SHEET

## 1. Identification

**Material name:** VULKEM 116 LV GRAY 30 CTG/CS
**Material:** 426712L 323

**Recommended use and restriction on use**

**Recommended use:** Sealant
**Restrictions on use:** Not known.

**Manufacturer/Importer/Supplier/Distributor Information**
Tremco U.S Sealants
3735 Green Road
Beachwood OH 44122
US

| | |
|---|---|
| **Contact person:** | EH&S Department |
| **Telephone:** | 216-292-5000 |
| **Emergency telephone number:** | 1-800-424-9300 (US); 1-613-996-6666 (Canada) |

## 2. Hazard(s) identification

**Hazard Classification**

**Health Hazards**

| | |
|---|---|
| Respiratory sensitizer | Category 1 |
| Skin sensitizer | Category 1 |
| Germ Cell Mutagenicity | Category 1B |
| Carcinogenicity | Category 1A |

**Unknown toxicity - Health**

| | |
|---|---|
| Acute toxicity, oral | 34.06 % |
| Acute toxicity, dermal | 41.27 % |
| Acute toxicity, inhalation, vapor | 97.73 % |
| Acute toxicity, inhalation, dust or mist | 99.12 % |

**Environmental Hazards**

| | |
|---|---|
| Acute hazards to the aquatic environment | Category 2 |

**Unknown toxicity - Environment**

| | |
|---|---|
| Acute hazards to the aquatic environment | 78.43 % |
| Chronic hazards to the aquatic environment | 100 % |

**Label Elements**

**Hazard Symbol:**

**Signal Word:** Danger

**Hazard Statement:** May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause genetic defects.
May cause cancer.
Toxic to aquatic life.

**Precautionary Statement:**

**Prevention:** Avoid breathing dust/fume/gas/mist/vapors/spray. [In case of inadequate ventilation] wear respiratory protection. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Avoid release to the environment.

**Response:** If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. If exposed or concerned: Get medical advice/attention. Specific treatment (see this label). Wash contaminated clothing before reuse.

**Storage:** Store locked up.

**Disposal:** Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Other hazards which do not result in GHS classification:** None.

## 3. Composition/information on ingredients

**Mixtures**

| Chemical Identity | CAS number | Content in percent (%)* |
|---|---|---|
| Calcium Carbonate (Limestone) | 1317-65-3 | 10 - 30% |
| Titanium dioxide | 13463-67-7 | 3 - 7% |
| Polyethylene | 9002-88-4 | 3 - 7% |
| Heavy aromatic naphtha | 64742-94-5 | 1 - 5% |
| Aromatic petroleum distillates | 64742-95-6 | 0.5 - 1.5% |
| 1,2,4-Trimethylbenzene | 95-63-6 | 0.5 - 1.5% |
| 4,4'-Methylene bis(phenylisocyanate) | 101-68-8 | 0.5 - 1.5% |

| | | |
|---|---|---|
| Aluminum oxide | 1344-28-1 | 0.1 - 1% |
| Polymethylene polyphenyl isocyanate | 9016-87-9 | 0.1 - 1% |
| 1,3,5-Trimethylbenzene | 108-67-8 | 0.1 - 1% |
| Crystalline Silica (Quartz)/ Silica Sand | 14808-60-7 | 0.1 - 1% |

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## 4. First-aid measures

**Ingestion:** Call a POISON CENTER/doctor/.../if you feel unwell. Rinse mouth.

**Inhalation:** Call a physician or poison control center immediately. If breathing stops, provide artificial respiration. Move to fresh air. If breathing is difficult, give oxygen.

**Skin Contact:** If skin irritation occurs: Get medical advice/attention. Destroy or thoroughly clean contaminated shoes. Immediately remove contaminated clothing and shoes and wash skin with soap and plenty of water. If skin irritation or an allergic skin reaction develops, get medical attention.

**Eye contact:** Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. If eye irritation persists: Get medical advice/attention.

**Most important symptoms/effects, acute and delayed**

**Symptoms:** May cause skin and eye irritation.

**Indication of immediate medical attention and special treatment needed**

**Treatment:** Symptoms may be delayed.

## 5. Fire-fighting measures

**General Fire Hazards:** No unusual fire or explosion hazards noted.

### Suitable (and unsuitable) extinguishing media

**Suitable extinguishing media:** Use fire-extinguishing media appropriate for surrounding materials.

**Unsuitable extinguishing media:** Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical:** During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters**

**Special fire fighting procedures:** No data available.

**Special protective equipment for fire-fighters:** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures:** Ventilate closed spaces before entering them. Evacuate area. See Section 8 of the SDS for Personal Protective Equipment. Keep upwind. Keep unauthorized personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

**Methods and material for containment and cleaning up:** Collect spillage in containers, seal securely and deliver for disposal according to local regulations.

**Notification Procedures:** In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

**Environmental Precautions:** Avoid release to the environment. Prevent further leakage or spillage if safe to do so.

## 7. Handling and storage

**Precautions for safe handling:** Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after handling. Ventilate well, avoid breathing vapors. Use approved respirator if air contamination is above accepted level. Use mechanical ventilation in case of handling which causes formation of dust.

**Conditions for safe storage, including any incompatibilities:** Store locked up.

## 8. Exposure controls/personal protection

**Control Parameters**

**Occupational Exposure Limits**

| Chemical Identity | type | Exposure Limit Values | Source |
|---|---|---|---|
| Calcium Carbonate (Limestone) - Total dust. | PEL | 15 mg/m3 | US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006) |
| Calcium Carbonate (Limestone) - Respirable fraction. | PEL | 5 mg/m3 | US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006) |
| Titanium dioxide | TWA | 10 mg/m3 | US. ACGIH Threshold Limit Values (2011) |
| Titanium dioxide - Total dust. | PEL | 15 mg/m3 | US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006) |
| Polyethylene - Inhalable particles. | TWA | 10 mg/m3 | US. ACGIH Threshold Limit Values (03 2015) |
| Polyethylene - | TWA | 3 mg/m3 | US. ACGIH Threshold Limit Values |

| | | | |
|---|---|---|---|
| Respirable particles. | | | (03 2015) |
| Polyethylene - Respirable fraction. | PEL | 5 mg/m3 | US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006) |
| Polyethylene - Total dust. | PEL | 15 mg/m3 | US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006) |
| | TWA | 15 mg/m3 | US. OSHA Table Z-3 (29 CFR 1910.1000) (2000) |
| | TWA | 50 millions of particles per cubic foot of air | US. OSHA Table Z-3 (29 CFR 1910.1000) (2000) |
| Polyethylene - Respirable fraction. | TWA | 5 mg/m3 | US. OSHA Table Z-3 (29 CFR 1910.1000) (2000) |
| | TWA | 15 millions of particles per cubic foot of air | US. OSHA Table Z-3 (29 CFR 1910.1000) (2000) |
| Heavy aromatic naphtha - Non-aerosol. - as total hydrocarbon vapor | TWA | 200 mg/m3 | US. ACGIH Threshold Limit Values (03 2014) |
| Heavy aromatic naphtha | PEL | 100 ppm 400 mg/m3 | US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006) |
| 1,2,4-Trimethylbenzene | TWA | 25 ppm | US. ACGIH Threshold Limit Values (2011) |
| 4,4'-Methylene bis(phenylisocyanate) | TWA | 0.005 ppm | US. ACGIH Threshold Limit Values (2011) |
| | Ceiling | 0.02 ppm 0.2 mg/m3 | US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006) |
| Aluminum oxide - Respirable fraction. | TWA | 1 mg/m3 | US. ACGIH Threshold Limit Values (2011) |
| | PEL | 5 mg/m3 | US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006) |
| Aluminum oxide - Total dust. | PEL | 15 mg/m3 | US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006) |
| Polymethylene polyphenyl isocyanate | TWA | 0.005 ppm | US. ACGIH Threshold Limit Values (2011) |
| | Ceiling | 0.02 ppm 0.2 mg/m3 | US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006) |
| 1,3,5-Trimethylbenzene | TWA | 25 ppm | US. ACGIH Threshold Limit Values (2011) |
| Crystalline Silica (Quartz)/ Silica Sand - Respirable fraction. | TWA | 0.025 mg/m3 | US. ACGIH Threshold Limit Values (2011) |
| Crystalline Silica (Quartz)/ Silica Sand - Respirable. | TWA | 2.4 millions of particles per cubic foot of air | US. OSHA Table Z-3 (29 CFR 1910.1000) (2000) |

| | | | |
|---|---|---|---|
| | TWA | 0.1 mg/m3 | US. OSHA Table Z-3 (29 CFR 1910.1000) (2000) |
| Crystalline Silica (Quartz)/ Silica Sand - Total dust. | TWA | 0.3 mg/m3 | US. OSHA Table Z-3 (29 CFR 1910.1000) (2000) |

| **Chemical name** | **type** | **Exposure Limit Values** | **Source** |
|---|---|---|---|
| Diisodecyl phthalate | TWAEV | 5 mg/m3 | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010) |
| Calcium Carbonate (Limestone) - Total dust. | STEL | 20 mg/m3 | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007) |
| | TWA | 10 mg/m3 | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007) |

| | | | |
|---|---|---|---|
| Calcium Carbonate (Limestone) - Respirable fraction. | TWA | 3 mg/m3 | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007) |
| Calcium Carbonate (Limestone) - Total dust. | TWA | 10 mg/m3 | Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008) |
| Titanium dioxide - Total dust. | TWA | 10 mg/m3 | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007) |
| Titanium dioxide - Respirable fraction. | TWA | 3 mg/m3 | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007) |
| Titanium dioxide | TWAEV | 10 mg/m3 | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010) |
| Titanium dioxide - Total dust. | TWA | 10 mg/m3 | Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008) |
| Polyethylene - Respirable fraction. | TWA | 3 mg/m3 | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (05 2013) |
| Polyethylene - Total dust. | TWA | 10 mg/m3 | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (05 2013) |
| Polyethylene - Respirable particles. | TWAEV | 3 mg/m3 | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010) |
| Polyethylene - Inhalable | TWAEV | 10 mg/m3 | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010) |
| Polyethylene - Total dust. | TWA | 10 mg/m3 | Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (11 2011) |
| Heavy aromatic naphtha - Non-aerosol. - as total hydrocarbon vapor | TWA | 200 mg/m3 | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (05 2013) |
| Heavy aromatic naphtha - Non-aerosol. - as total hydrocarbon vapor | TWAEV | 200 mg/m3 | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010) |

| | | | | |
|---|---|---|---|---|
| Heavy aromatic naphtha | TWA | 400 ppm | 1,590 mg/m3 | Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (11 2011) |
| 1,2,4-Trimethylbenzene | TWA | 25 ppm | | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007) |
| 1,2,4-Trimethylbenzene | TWAEV | 25 ppm | | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010) |
| 1,2,4-Trimethylbenzene | TWA | 25 ppm | 123 mg/m3 | Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008) |
| 4,4'-Methylene bis(phenylisocyanate) | CEILING | 0.01 ppm | | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007) |
| | TWA | 0.005 ppm | | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007) |
| 4,4'-Methylene bis(phenylisocyanate) | TWAEV | 0.005 ppm | | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010) |
| | CEV | 0.02 ppm | | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010) |
| 4,4'-Methylene bis(phenylisocyanate) | TWA | 0.005 ppm | 0.051 mg/m3 | Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008) |
| Polymethylene polyphenyl isocyanate | TWA | 0.005 ppm | | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007) |
| | CEILING | 0.01 ppm | | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007) |
| | TWA | 0.005 ppm | | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007) |
| | CEILING | 0.01 ppm | | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, |

| | | | | |
|---|---|---|---|---|
| | | | | as amended) (07 2007) |
| Polymethylene polyphenyl isocyanate | TWAEV | 0.005 ppm | | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010) |
| | CEV | 0.02 ppm | | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010) |
| Polymethylene polyphenyl isocyanate | TWA | 0.005 ppm | 0.051 mg/m3 | Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008) |
| 1,3,5-Trimethylbenzene | TWA | 25 ppm | | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007) |
| 1,3,5-Trimethylbenzene | TWAEV | 25 ppm | | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010) |
| 1,3,5-Trimethylbenzene | TWA | 25 ppm | 123 mg/m3 | Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008) |
| Crystalline Silica (Quartz)/ Silica Sand - Respirable fraction. | TWA | | 0.025 mg/m3 | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007) |
| Crystalline Silica (Quartz)/ Silica Sand - Respirable. | TWAEV | | 0.10 mg/m3 | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010) |
| Crystalline Silica (Quartz)/ Silica Sand - Respirable dust. | TWA | | 0.1 mg/m3 | Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008) |

**Appropriate Engineering Controls** Mechanical ventilation or local exhaust ventilation may be required. Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of dust.

**Individual protection measures, such as personal protective equipment**

**General information:** Use personal protective equipment as required.

**Eye/face protection:** Wear goggles/face shield.

**Skin Protection**

**Hand Protection:** Use suitable protective gloves if risk of skin contact.

**Other:** Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

**Respiratory Protection:** If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.

**Hygiene measures:** Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin.

## 9. Physical and chemical properties

**Appearance**

| | |
|---|---|
| **Physical state:** | solid |
| **Form:** | Paste |
| **Color:** | Gray |
| **Odor:** | Mild |
| **Odor threshold:** | No data available. |
| **pH:** | No data available. |
| **Melting point/freezing point:** | No data available. |
| **Initial boiling point and boiling range:** | No data available. |
| **Flash Point:** | 99 °C 210 °F(ISO 3679 (seta closed)) |
| **Evaporation rate:** | Slower than n-Butyl Acetate |
| **Flammability (solid, gas):** | No |
| **Upper/lower limit on flammability or explosive limits** | |
| **Flammability limit - upper (%):** | No data available. |
| **Flammability limit - lower (%):** | No data available. |
| **Explosive limit - upper (%):** | No data available. |
| **Explosive limit - lower (%):** | No data available. |
| **Vapor pressure:** | No data available. |
| **Vapor density:** | Vapors are heavier than air and may travel along the floor and in the bottom of containers. |
| **Relative density:** | 1.16 |
| **Solubility(ies)** | |
| **Solubility in water:** | Insoluble in water |
| **Solubility (other):** | No data available. |
| **Partition coefficient (n-octanol/water):** | No data available. |
| **Auto-ignition temperature:** | No data available. |
| **Decomposition temperature:** | No data available. |
| **Viscosity:** | No data available. |

## 10. Stability and reactivity

**Reactivity:** No data available.

| | |
|---|---|
| **Chemical Stability:** | Material is stable under normal conditions. |
| **Possibility of hazardous reactions:** | No data available. |
| **Conditions to avoid:** | Avoid heat or contamination. |
| **Incompatible Materials:** | Alcohols. Amines. Strong acids. Avoid contact with oxidizing agents (e.g. nitric acid, peroxides and chromates). Strong bases. Water, moisture. |
| **Hazardous Decomposition Products:** | Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors. |

## 11. Toxicological information

**Information on likely routes of exposure**

| | |
|---|---|
| **Ingestion:** | May be ingested by accident. Ingestion may cause irritation and malaise. |
| **Inhalation:** | In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes. |
| **Skin Contact:** | Causes mild skin irritation. May cause an allergic skin reaction. |
| **Eye contact:** | Eye contact is possible and should be avoided. |

**Information on toxicological effects**

**Acute toxicity (list all possible routes of exposure)**

**Oral**
**Product:** ATEmix: 11,435.4 mg/kg

**Dermal**
**Product:** ATEmix: 21,029.43 mg/kg

**Inhalation**
**Product:** No data available.

**Repeated dose toxicity**
**Product:** No data available.

**Skin Corrosion/Irritation**
**Product:** No data available.

**Specified substance(s):**
Titanium dioxide — in vivo (Rabbit): Experimental result, Supporting study

| | |
|---|---|
| Heavy aromatic naphtha | in vivo (Rabbit): Experimental result, Key study |
| Aromatic petroleum distillates | in vivo (Rabbit): Experimental result, Key study |
| 1,2,4-Trimethylbenzene | in vivo (Rabbit): Read-across from supporting substance (structural analogue or surrogate), Key study |
| 4,4'-Methylene bis(phenylisocyanate) | in vivo (Rabbit): Read-across based on grouping of substances (category approach), Key study |
| Aluminum oxide | in vivo (Rabbit): Experimental result, Key study |
| 1,3,5-Trimethylbenzene | in vivo (Rabbit): Experimental result, Key study |

**Serious Eye Damage/Eye Irritation**

**Product:** No data available.

**Specified substance(s):**

| | |
|---|---|
| Titanium dioxide | in vivo (Rabbit, 24 hrs): Not irritating |
| Heavy aromatic naphtha | in vivo (Rabbit, 24 - 72 hrs): Not irritating |
| Aromatic petroleum distillates | in vivo (Rabbit, 24 - 72 hrs): Not irritating |
| 1,2,4-Trimethylbenzene | in vivo (Rabbit, 30 min): Not irritating |
| 4,4'-Methylene bis(phenylisocyanate) | in vivo (Rabbit, 24 - 72 hrs): Not irritating |
| Aluminum oxide | in vivo (Rabbit, 24 hrs): Not irritating |

**Respiratory or Skin Sensitization**

**Product:** May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause sensitization by inhalation.

**Carcinogenicity**

**Product:** No data available.

**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**

| | |
|---|---|
| Titanium dioxide | Overall evaluation: Possibly carcinogenic to humans. |
| Crystalline Silica (Quartz)/ Silica Sand | Overall evaluation: Carcinogenic to humans. |

**US. National Toxicology Program (NTP) Report on Carcinogens:**

| | | |
|---|---|---|
| Crystalline (Quartz)/ Sand | Silica Silica | Known To Be Human Carcinogen. |

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):**
No carcinogenic components identified

**Germ Cell Mutagenicity**

**In vitro**
**Product:** No data available.

**In vivo**
**Product:** No data available.

**Reproductive toxicity**
**Product:** No data available.

**Specific Target Organ Toxicity - Single Exposure**
**Product:** No data available.

**Specific Target Organ Toxicity - Repeated Exposure**
**Product:** No data available.

**Aspiration Hazard**
**Product:** No data available.

**Other effects:** No data available.

## 12. Ecological information

**Ecotoxicity:**

**Acute hazards to the aquatic environment:**

**Fish**
**Product:** No data available.

**Specified substance(s):**

| | |
|---|---|
| 1,2,4-Trimethylbenzene | LC 50 (Fathead minnow (Pimephales promelas), 96 h): 7.19 - 8.28 mg/l Mortality |
| 1,3,5-Trimethylbenzene | LC 50 (Goldfish (Carassius auratus), 96 h): 9.89 - 15.05 mg/l Mortality |

**Aquatic Invertebrates**

| | |
|---|---|
| **Product:** | No data available. |
| **Specified substance(s):** | |
| 1,2,4-Trimethylbenzene | LC 50 (Scud (Elasmopus pectinicrus), 24 h): 4.89 - 5.62 mg/l Mortality |
| 1,3,5-Trimethylbenzene | EC 50 (Water flea (Daphnia magna), 24 h): 50 mg/l Intoxication |

**Chronic hazards to the aquatic environment:**

**Fish**

| | |
|---|---|
| **Product:** | No data available. |
| **Specified substance(s):** | |
| Titanium dioxide | ED 0 (Phoxinus phoxinus, 30 d): >= 1,000 mg/l Experimental result, Supporting study<br>LC 10 (Oncorhynchus mykiss, 28 d): 0.981 mg/l Read-across from supporting substance (structural analogue or surrogate), Supporting study<br>LC 50 (Oncorhynchus mykiss, 28 d): 7.31 mg/l Read-across from supporting substance (structural analogue or surrogate), Supporting study<br>LC 1 (Oncorhynchus mykiss, 28 d): 0.191 mg/l Read-across from supporting substance (structural analogue or surrogate), Supporting study<br>LC 0 (Coregonus autumnalis migratorius G., 30 d): 3 mg/l Experimental result, Supporting study |
| Heavy aromatic naphtha | NOAEL (Oncorhynchus mykiss, 28 d): 0.098 mg/l QSAR QSAR, Key study |
| Aromatic petroleum distillates | LL 50 (Pimephales promelas, 14 d): 5.2 mg/l Experimental result, Supporting study<br>EC 50 (Daphnia magna, 21 d): 10 mg/l Other, Key study<br>NOAEL (Pimephales promelas, 14 d): 2.6 mg/l Experimental result, Supporting study<br>NOAEL (Daphnia magna, 21 d): 2.6 mg/l Other, Key study |
| Aluminum oxide | NOAEL (Pimephales promelas, 28 d): 4.7 mg/l Experimental result, Weight of Evidence study<br>IC 25 (Pimephales promelas, 7 d): 11.59 mg/l Experimental result, Weight of Evidence study<br>LOAEL (Salvelinus fontinalis, 60 d): 0.35 mg/l Experimental result, Weight of Evidence study<br>NOAEL (Pimephales promelas, 7 d): 0.4 mg/l Read-across based on grouping of substances (category approach), Weight of Evidence study<br>NOAEL (Pimephales promelas, 7 d): >= 0.831 mg/l Experimental result, Weight of Evidence study |

**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.

**Other Adverse Effects:** Toxic to aquatic organisms.

## 13. Disposal considerations

**Disposal instructions:** Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Contaminated Packaging:** No data available.

## 14. Transport information

**TDG:**

Not Regulated

**CFR / DOT:**

Not Regulated

**IMDG:**

Not Regulated

## 15. Regulatory information

**US Federal Regulations**

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

| Chemical Identity | Reportable quantity |
|---|---|
| P-chlorobenzotrifluoride | De minimis concentration: 1.0% One-Time Export Notification only. |

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

None present or none present in regulated quantities.

**CERCLA Hazardous Substance List (40 CFR 302.4):**

| Chemical Identity | Reportable quantity |
|---|---|
| 4,4'-Methylene bis(phenylisocyanate) | 5000 lbs. |
| Polymethylene polyphenyl isocyanate | 5000 lbs. |
| 2,4-Toluene diisocyanate | 100 lbs. |
| Cumene | 5000 lbs. |
| Xylene | 100 lbs. |
| Toluene-2,6-Diisocyanate | 100 lbs. |
| Ethylbenzene | 1000 lbs. |
| Chromium | 5000 lbs. |

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**

Delayed (Chronic) Health Hazard
Immediate (Acute) Health Hazards

**SARA 302 Extremely Hazardous Substance**

| Chemical Identity | Reportable quantity | Threshold Planning Quantity |
|---|---|---|
| 2,4-Toluene diisocyanate | 100 lbs. | 500 lbs. |
| Toluene-2,6-Diisocyanate | 100 lbs. | 100 lbs. |

**SARA 304 Emergency Release Notification**

| Chemical Identity | Reportable quantity |
|---|---|
| Diisodecyl phthalate | |
| 4,4'-Methylene bis(phenylisocyanate) | 5000 lbs. |
| Polymethylene polyphenyl isocyanate | 5000 lbs. |
| 2,4-Toluene diisocyanate | 100 lbs. |
| Cumene | 5000 lbs. |
| Xylene | 100 lbs. |
| Toluene-2,6-Diisocyanate | 100 lbs. |
| Ethylbenzene | 1000 lbs. |
| Chromium | 5000 lbs. |

**SARA 311/312 Hazardous Chemical**

| Chemical Identity | Threshold Planning Quantity |
|---|---|
| 2,4-Toluene diisocyanate | 500lbs |
| Toluene-2,6-Diisocyanate | 100lbs |
| Calcium Carbonate (Limestone) | 500 lbs |
| Titanium dioxide | 500 lbs |
| Polyethylene | 500 lbs |
| Heavy aromatic naphtha | 500 lbs |
| Aromatic petroleum distillates | 500 lbs |
| 1,2,4-Trimethylbenzene | 500 lbs |
| 4,4'-Methylene bis(phenylisocyanate) | 500 lbs |
| Aluminum oxide | 500 lbs |
| Polymethylene polyphenyl isocyanate | 500 lbs |
| 1,3,5-Trimethylbenzene | 500 lbs |
| Crystalline Silica (Quartz)/ Silica Sand | 500 lbs |

**SARA 313 (TRI Reporting)**

None present or none present in regulated quantities.

**Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)**

| Chemical Identity | Reportable quantity |
|---|---|
| Xylene | 100 lbs. |

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):**

| Chemical Identity | Reportable quantity |
|---|---|
| 2,4-Toluene diisocyanate | 10000 lbs |
| Toluene-2,6-Diisocyanate | 10000 lbs |

**US State Regulations**

**US. California Proposition 65**

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

**US. New Jersey Worker and Community Right-to-Know Act**

| Chemical Identity |
|---|
| Calcium Carbonate (Limestone) |
| Titanium dioxide |
| P-chlorobenzotrifluoride |
| Heavy aromatic naphtha |
| Crystalline Silica (Quartz)/ Silica Sand |

**US. Massachusetts RTK - Substance List**

**Chemical Identity**
Calcium Carbonate (Limestone)
Titanium dioxide
Heavy aromatic naphtha
Crystalline Silica (Quartz)/ Silica Sand
2,4-Toluene diisocyanate
Toluene-2,6-Diisocyanate

**US. Pennsylvania RTK - Hazardous Substances**

**Chemical Identity**
Diisodecyl phthalate
Calcium Carbonate (Limestone)
Titanium dioxide
Heavy aromatic naphtha

**US. Rhode Island RTK**

**Chemical Identity**
Diisodecyl phthalate

**Other Regulations:**

| | |
|---|---|
| **Regulatory VOC (less water and exempt solvent):** | 38 g/l |
| **VOC Method 310:** | 1.72 % |

**Inventory Status:**

| | |
|---|---|
| Australia AICS: | One or more components in this product are not listed on or exempt from the Inventory. |
| Canada DSL Inventory List: | All components in this product are listed on or exempt from the Inventory. |
| EINECS, ELINCS or NLP: | One or more components in this product are not listed on or exempt from the Inventory. |
| Japan (ENCS) List: | One or more components in this product are not listed on or exempt from the Inventory. |
| China Inv. Existing Chemical Substances: | One or more components in this product are not listed on or exempt from the Inventory. |
| Korea Existing Chemicals Inv. (KECI): | One or more components in this product are not listed on or exempt from the Inventory. |
| Canada NDSL Inventory: | One or more components in this product are not listed on or exempt from the Inventory. |
| Philippines PICCS: | One or more components in this product are not listed on or exempt from the Inventory. |

| | |
|---|---|
| US TSCA Inventory: | All components in this product are listed on or exempt from the Inventory. |
| New Zealand Inventory of Chemicals: | One or more components in this product are not listed on or exempt from the Inventory. |
| Japan ISHL Listing: | One or more components in this product are not listed on or exempt from the Inventory. |
| Japan Pharmacopoeia Listing: | One or more components in this product are not listed on or exempt from the Inventory. |

## 16.Other information, including date of preparation or last revision

| | |
|---|---|
| **Revision Date:** | 03/30/2016 |
| **Version #:** | 1.0 |
| **Further Information:** | No data available. |
| **Disclaimer:** | For Industrial Use Only. Keep out of Reach of Children. The hazard information herein is offered solely for the consideration of the user, subject to their own investigation of compliance with applicable regulations, including the safe use of the product under every foreseeable condition. |

# Safety Data Sheet

## 1 - Identification

| | |
|---|---|
| **Product Name: WD-40 Multi-Use Product Aerosol**<br>***NOT FOR SALE IN CALIFORNIA***<br><br>**Product Use: Lubricant, Penetrant, Drives Out Moisture, Removes and Protects Surfaces From Corrosion**<br><br>**Restrictions on Use: None identified**<br><br>**SDS Date Of Preparation: 07/20/2014** | **Manufacturer: WD-40 Company**<br>**Address: 1061 Cudahy Place (92110)**<br>**P.O. Box 80607**<br>**San Diego, California, USA**<br>**92138 –0607**<br>**Telephone:**<br>**Emergency only: 1-888-324-7596 (PROSAR)**<br>**Information: 1-888-324-7596**<br>**Chemical Spills: 1-800-424-9300 (Chemtrec)**<br>**1-703-527-3887 (International Calls)** |

## 2 – Hazards Identification

**Hazcom 2012/GHS Classification:**
Flammable Aerosol Category 1
Gas Under Pressure: Compressed Gas
Aspiration Toxicity Category 1

Note: This product is a consumer product and is labeled in accordance with the US Consumer Product Safety Commission regulations which take precedence over OSHA Hazard Communication labeling. The actual container label will not include the label elements below. The labeling below applies to industrial/professional products.

**Label Elements:**

**DANGER**!
Extremely Flammable Aerosol.
Contains gas under pressure; may explode if heated.
May be fatal if swallowed and enters airways.
**Prevention**
Keep away from heat, sparks, open flames, hot surfaces – No smoking.
Do not spray on an open flame or other ignition source.
Pressurized container: Do not pierce or burn, even after use.
**Response**
IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.
**Storage**
Store locked up.
Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Store in a well-ventilated place.
**Disposal**
Dispose of contents and container in accordance with local and national regulations.

## 3 - Composition/Information on Ingredients

| Ingredient | CAS # | Weight Percent | US Hazcom 2012/ GHS Classification |
|---|---|---|---|
| Aliphatic Hydrocarbon | 64742-47-8 | 45-50 | Flammable Liquid Category 3 |

| | | | |
|---|---|---|---|
| | | | Aspiration Toxicity Category 1 |
| Petroleum Base Oil | 64742-56-9<br>64742-65-0<br>64742-53-6<br>64742-54-7<br>64742-71-8 | <25 | Not Hazardous |
| LVP Aliphatic Hydrocarbon | 64742-47-8 | 12-18 | Aspiration Toxicity Category 1 |
| Carbon Dioxide | 124-38-9 | 2-3 | Simple Asphyxiant<br>Gas Under Pressure,<br>Compressed Gas |
| Non-Hazardous Ingredients | Mixture | <10 | Not Hazardous |

Note: The exact percentages are a trade secret.

**4 – First Aid Measures**

**Ingestion (Swallowed):** Aspiration Hazard. DO NOT induce vomiting. Call physician, poison control center or the WD-40 Safety Hotline at 1-888-324-7596 immediately.
**Eye Contact:** Flush thoroughly with water. Remove contact lenses if present after the first 5 minutes and continue flushing for several more minutes. Get medical attention if irritation persists.
**Skin Contact:** Wash with soap and water. If irritation develops and persists, get medical attention.
**Inhalation (Breathing):** If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.
**Signs and Symptoms of Exposure**: May cause eye and respiratory irritation. Inhalation may cause coughing, headache and dizziness. Skin contact may cause drying of the skin.
**Indication of Immediate Medical Attention/Special Treatment Needed**: Immediate medical attention is needed for ingestion.

**5 – Fire Fighting Measures**

**Suitable (and unsuitable) Extinguishing Media:** Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet or flooding amounts of water. Burning product will float on the surface and spread fire.
**Specific Hazards Arising from the Chemical**: Contents under pressure. Keep away from ignition sources and open flames. Exposure of containers to extreme heat and flames can cause them to rupture often with violent force. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back. Combustion will produce oxides of carbon and hydrocarbons.
**Special Protective Equipment and Precautions for Fire-Fighters**: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water. Use shielding to protect against bursting containers.

**6 – Accidental Release Measures**

**Personal Precautions, Protective Equipment and Emergency Procedures:** Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area.
**Methods and Materials for Containment/Cleanup:** Leaking cans should be placed in a plastic bag or open pail until the pressure has dissipated. Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly. Report spills to authorities as required.

**7 – Handling and Storage**

**Precautions for Safe Handling:** Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Use only with adequate ventilation. Keep away from heat, sparks, pilot lights, hot surfaces and open flames. Unplug electrical tools, motors and appliances before spraying or bringing the can near any source of electricity. Electricity can burn a hole in the can and cause contents to burst into flames. To avoid serious burn injury, do not let the can touch battery terminals, electrical connections on motors or appliances or any other source of electricity. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep out of the reach of children. Do not puncture, crush or incinerate containers, even when empty.

**Conditions for Safe Storage:** Store in a cool, well-ventilated area, away from incompatible materials Do not store above 120°F or in direct sunlight. U.F.C (NFPA 30B) Level 3 Aerosol. Store away from oxidizers.

**8 – Exposure Controls/Personal Protection**

| Chemical | Occupational Exposure Limits |
|---|---|
| Aliphatic Hydrocarbon | 1200 mg/m3 TWA (manufacturer recommended) |
| Petroleum Base Oil | 5 mg/m3 TWA, 10 mg/m3 STEL ACGIH TLV<br>5 mg/m3 TWA OSHA PEL |
| LVP Aliphatic Hydrocarbon | 1200 mg/m3 TWA (manufacturer recommended) |
| Carbon Dioxide | 5000 ppm TWA (OSHA/ACGIH), 30,000 ppm STEL (ACGIH) |
| Non-Hazardous Ingredients | None Established |

**The Following Controls are Recommended for Normal Consumer Use of this Product**
**Appropriate Engineering Controls:** Use in a well-ventilated area.
**Personal Protection:**
**Eye Protection:** Avoid eye contact. Always spray away from your face.
**Skin Protection:** Avoid prolonged skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.
**Respiratory Protection:** None needed for normal use with adequate ventilation.

**For Bulk Processing or Workplace Use the Following Controls are Recommended**
**Appropriate Engineering Controls:** Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.
**Personal Protection:**
**Eye Protection:** Safety goggles recommended where eye contact is possible.
**Skin Protection:** Wear chemical resistant gloves.
**Respiratory Protection:** None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.
**Work/Hygiene Practices:** Wash with soap and water after handling.

**9 – Physical and Chemical Properties**

| | | | |
|---|---|---|---|
| Appearance: | Light amber liquid | Flammable Limits: (Solvent Portion) | LEL: 0.6% UEL: 8% |
| Odor: | Mild petroleum odor | Vapor Pressure: | 95-115 PSI @ 70°F |
| Odor Threshold: | Not established | Vapor Density: | Greater than 1 (air=1) |
| pH: | Not Applicable | Relative Density: | 0.8 – 0.82 @ 60°F |
| Melting/Freezing Point | Not established | Solubilities: | Insoluble in water |
| Boiling Point/Range: | 361 - 369°F (183 - 187°C) | Partition Coefficient; n-octanol/water: | Not established |
| Flash Point: | 122°F (49°C) Tag Closed Cup (concentrate) | Autoignition Temperature: | Not established |
| Evaporation Rate: | Not established | Decomposition Temperature: | Not established |
| Flammability (solid, gas) | Flammable Aerosol | Viscosity: | 2.79-2.96 cSt @ 100°F |
| VOC: | 412 grams/liter (49.5%) | Pour Point: | -63°C (-81.4°F ) ASTM D-97 |

**10 – Stability and Reactivity**

**Reactivity:** Not reactive under normal conditions
**Chemical Stability:** Stable

**Possibility of Hazardous Reactions:** May react with strong oxidizers generating heat.
**Conditions to Avoid:** Avoid heat, sparks, flames and other sources of ignition. Do not puncture or incinerate containers.
**Incompatible Materials:** Strong oxidizing agents.
**Hazardous Decomposition Products:** Carbon monoxide and carbon dioxide.

## 11 – Toxicological Information

**Symptoms of Overexposure:**
**Inhalation:** High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. Intentional abuse may be harmful or fatal.
**Skin Contact:** Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis.
**Eye Contact:** Contact may be irritating to eyes. May cause redness and tearing.
**Ingestion:** This product has low oral toxicity. Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhea. This product is an aspiration hazard. If swallowed, can enter the lungs and may cause chemical pneumonitis, severe lung damage and death.
**Chronic Effects:** None expected.
**Carcinogen Status:** None of the components are listed as a carcinogen or suspect carcinogen by IARC, NTP, ACGIH or OSHA.
**Reproductive Toxicity**: None of the components is considered a reproductive hazard.

**Numerical Measures of Toxicity**:
The oral toxicity of this product is estimated to be greater than 5,000 mg/kg and the dermal toxicity greater than 2,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard.

## 12 – Ecological Information

**Ecotoxicity:** No specific aquatic toxicity data is currently available, however components of this product are not expected to be harmful to aquatic organisms
**Persistence and Degradability:** Component are readily biodegradable.
**Bioaccumulative Potential:** Bioaccumulation is not expected based on an assessment of the ingredients.
**Mobility in Soil:** No data available
**Other Adverse Effects:** None known

## 13 - Disposal Considerations

If this product becomes a waste, it would be expected to meet the criteria of a RCRA ignitable hazardous waste (D001). However, it is the responsibility of the generator to determine at the time of disposal the proper classification and method of disposal. Do not puncture or incinerate containers, even empty. Dispose in accordance with federal, state, and local regulations.

## 14 – Transportation Information_

DOT Surface Shipping Description:
UN1950, Aerosols, 2.1 Ltd. Qty (Note: Shipping Papers are not required for Limited Quantities unless transported by air or vessel – each package must be marked with the Limited Quantity Mark)
IMDG Shipping Description: Un1950, Aerosols, 2.1, LTD QTY
ICAO Shipping Description: UN1950, Aerosols, flammable, 2.1 NOTE: WD-40 does not test aerosol cans to assure that they meet the pressure and other requirements for transport by air. We do not recommend that our aerosol products be transported by air.

## 15 – Regulatory Information

**U.S. Federal Regulations**:
**CERCLA 103 Reportable Quantity:** This product is not subject to CERCLA reporting requirements, however, oil spills are reportable to the National Response Center under the Clean Water Act and many

states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.
**SARA TITLE III**:
**Hazard Category For Section 311/312:** Acute Health, Fire Hazard, Sudden Release of Pressure
**Section 313 Toxic Chemicals**: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements: None
Section 302 Extremely Hazardous Substances (TPQ): None
**EPA Toxic Substances Control Act (TSCA) Status**: All of the components of this product are listed on the TSCA inventory.
**VOC Regulations**: This product complies with the consumer product VOC limits of the US EPA and states adopting the OTC VOC rules but does not comply with CARB.
**California Safe Drinking Water and Toxic Enforcement Act (Proposition 65**): This product does not contain chemicals regulated under California Proposition 65.
**Canadian Environmental Protection Act**: One of the components is listed on the NDSL. All of the other ingredients are listed on the Canadian Domestic Substances List or exempt from notification.
**Canadian WHMIS Classification**: Class A (Compressed gas), Class B-5 (Flammable Aerosol)
This MSDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

**16 – Other Information:**

**HMIS Hazard Rating:**
**Health – 1 (slight hazard), Fire Hazard – 4 (severe hazard), Reactivity – 0 (minimal hazard)**

Revision Date: July 20, 2014 Supersedes: May 23, 2014

Revision Summary: Convert to Hazcom 2012. Changes in all sections.

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