

## Safety Data Sheet

### Isobutyl Methacrylate

#### SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

##### 1.1 Product identifier

**Product name:** Isobutyl Methacrylate

**Synonym(s):** 2-Propenoic acid, 2-methyl-, 2-methylpropyl ester; 2-Methylpropyl methacrylate; Methacrylic acid, isobutyl ester

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

**General use:** Industrial applications; use only in well ventilated areas

**Uses advised against:** No data available

##### 1.3 Details of the supplier and of the safety data sheet

**Manufacturer/Distributor**

Silver Fern Chemical, Inc.

121 W. De La Guerra Street, Suite B

Santa Barbara, CA 93101 USA

Ph: 1-866-282-3384; Website - [www.silverfernchemical.com](http://www.silverfernchemical.com); email address - [info@silverfernchemical.com](mailto:info@silverfernchemical.com)

##### 1.4 Emergency telephone number: +1-800-535-5053; Outside USA & Canada +1-352-323-3500

#### SECTION 2 - HAZARDS IDENTIFICATION

##### 2.1 Classification of substance or mixture

**Product definition:** Substance

**Classification in accordance with 29 CFR 1910 (OSHA HCS) and Regulation EC No. 1272/2008**

Flammable Liquid - Category 3 [H226]

Skin Irritation - Category 2 [H315]

Sensitizer, Skin - Category 1 [H317]

Eye irritation - Category 2A [H319]

Specific Target Organ Toxicity, Single Exposure - Category 3; STOT SE 3 [H335]

Aquatic Toxicity, Acute - Category 1 [H400]

##### 2.2 Label elements

**Hazard symbol(s):**



GHS02



GHS07



GHS09

**Signal word:**

Danger

**Hazard statement(s):**

H226 - Flammable liquid and vapor

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H319 - Causes serious eye irritation

H335 - May cause respiratory irritation

H400 - Very toxic to aquatic life

**Precautionary statements:**

**[Prevention]**

P210 - Keep away from heat, open flames and hot surface. No smoking.

P233 - Keep container tightly closed.

P240 - Ground and bond container and receiving equipment.

P241 + P242 - Use explosion proof electrical, ventilating and lighting equipment. Use only non-sparking tools.

P243 - Take precautionary measures against static discharge.

P261 - Avoid breathing mist and vapor.

P264 - Wash hands and other exposed skin areas thoroughly after handling.

P271 - Use only outdoors or in a well-ventilated area.

P272 - Contaminated work clothing should not be allowed out of the workplace.

P273 - Avoid release to the environment

P280 - Wear protective gloves, protective clothing and eye protection.

**[Response]**

P303 + P361 + P353 - IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water or shower.

P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.

P321 + P312 - Specific treatment: Call a POISON CENTER or doctor if you feel unwell. Refer to Section 4 of this SDS.

P333 + P337 + P313 - If skin irritation or rash occurs or eye irritation persists: Get medical attention.

[Storage]  
[Disposal]

P362 - Take off contaminated clothing and wash before reuse.  
P370 + P378 - In case of fire: Use water fog, foam, dry chemical or carbon dioxide for extinction.  
P405 + P403 + P233 + P235 - Store in a well-ventilated place. Keep container tightly closed. Keep cool.  
P501 - Dispose of contents and containers in accordance with national and local regulations.

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None as defined under 29 CFR 1900.1200.

## SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

| % by Weight | Ingredient            | CAS Number | EC Number | Index Number | GHS Classification     |
|-------------|-----------------------|------------|-----------|--------------|------------------------|
| 100         | Isobutyl Methacrylate | 97-86-9    | 202-613-0 | 607-113-00-X | H225, H315, H317, H335 |

There are no additional ingredients present in this product 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.

### 3.2 Mixtures

Not applicable

## SECTION 4 – FIRST AID MEASURES

### 4.1 Description of first aid measures

**Inhalation:** If product mist or vapor causes respiratory irritation or distress, move the exposed person to fresh air immediately. If breathing is difficult or irregular, administer oxygen; if respiratory arrest occurs, start artificial respiration by trained personnel. If unconscious, maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. If symptoms persist or if the victim feels unwell, seek medical attention.

**Eyes:** Immediately flush eyes with large amounts of water or saline solution for at least 15 minutes, occasionally lifting the upper and lower lids. Remove contact lenses, if present and easy to do, after first 2 minutes and continue rinsing. If irritation persists seek medical attention, preferably from an ophthalmologist.

**Skin:** Flush skin with large amounts of water while removing contaminated clothing. Wash the affected area with soap and water followed by thorough rinsing. Wash contaminated clothing and shoes before reuse. If irritation persists or if the victim feels unwell, seek medical attention.

**Ingestion:** Rinse mouth with water if the victim is conscious. Remove dentures if present. DO NOT induce vomiting unless directed to do so by medical personnel. Vomiting may occur spontaneously. To prevent aspiration of material into the lungs, lay the victim on one side with the head lower than the waist. Never give anything by mouth to an unconscious or convulsing person. Do not leave the victim unattended. Seek immediate medical attention.

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

#### Potential health symptoms and effects

**Eyes:** Causes moderate to severe eye irritation. Exposure to vapor may cause eye dryness and irritation.

**Skin:** Causes skin irritation with localized redness, itching and discomfort. May cause skin sensitization. Persons previously sensitized can experience allergic skin reactions with redness, itching, swelling and rash upon re-exposure to this product. May cause allergic dermatitis.

**Inhalation:** Vapor or mist may cause irritation of the respiratory tract with cough, mucosal irritations, sore throat, shortness of breath and chest tightness. May cause respiratory depression, drowsiness, muscular weakness and affect the central nervous system. May cause allergic reaction with asthma-like symptoms. Prolonged exposure may lead to coma and damage the respiratory system.

**Ingestion:** Causes irritation of the digestive tract with nausea, vomiting, abdominal pain and diarrhea. May be harmful if swallowed.

**Chronic:** Pre-existing disorders of the skin and respiratory system may be aggravated by exposure to this product. Chronic exposure may cause headache, drowsiness, nausea and weakness. Prolonged and repeated exposure may result in cross-sensitization with other methacrylates and acrylates. May cause allergic dermatitis. Repeated exposure to high levels may cause adverse effects on the heart, lungs, liver and kidneys.

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

#### Advice to doctor and hospital personnel

Treat symptomatically and supportively.

## SECTION 5 – FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

**Suitable methods of extinction:** Use extinguishing media such as water spray or fog, carbon dioxide, foam and dry chemical.

**Unsuitable methods of extinction:** Water jets or streams may spread the fire.

### 5.2 Special hazards arising from the substance or mixture

Flammable liquid and vapor! Vapors are heavier than air and can travel along the ground to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. Exposure to ignition sources can ignite vapors, causing a flash fire. Closed containers may rupture due to the buildup of pressure when exposed to extreme heat. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent or may be delayed. Obtain medical attention.

**Explosion hazards:** Avoid sources of ignition. Vapors may form an explosive mixture with air, especially in confined spaces. Ground and bond

containers in storage and when container is in use.

### 6.3 Advice to firefighters

Firefighters should wear full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion when exposed to extreme heat. If possible, firefighters should control runoff to prevent environmental contamination. Notify appropriate authorities of potential fire and explosion hazard if liquid enters sewers or waterways.

## SECTION 6 – ACCIDENTAL RELEASE MEASURES

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### 6.1 Personal precautions, protective equipment and emergency procedures

Evacuate non-essential personnel. Wear appropriate protective clothing and equipment designated in Section 8.2. Ventilate the area. Remove all sources of ignition. NO SMOKING. Clean up spills immediately. Spill creates a slip hazard.

### 6.2 Environmental precautions

Avoid dispersal of spilled material or runoff and prevent contact with soil and entry into drains, sewers or waterways.

### 6.3 Methods and materials for containment and cleaning up

Approach spill from upwind direction. DO NOT flush material down the drain. Cover drains and contain spill. Cover spill with a large quantity of inert absorbent. Do not use combustible material such as sawdust. Collect material using non-sparking tools and place into an approved container for proper disposal. Observe possible material restrictions (Sections 7.2 and 10.5). Do not allow material or runoff from rinsing contaminated areas to enter floor drains or storm drains and ditches that lead to waterways. Dispose of via a licensed waste disposal contractor.

### 6.4 Reference to other sections

For indications about waste treatment, see Section 13.

## SECTION 7 – STORAGE AND HANDLING

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### 7.1 Precautions for safe handling

Wear all appropriate personal protective equipment specified in Section 8.2. Do not get in eyes or on skin or clothing. Do not inhale mist or vapor. NO SMOKING. If normal use of material presents a respiratory hazard, use only adequate ventilation or wear an appropriate respirator. Open containers slowly to control possible pressure release. Wash contaminated clothing and shoes thoroughly before reuse. Contaminated work clothing should not be allowed out of the workplace.

#### Advice on protection against fire and explosion

Keep away from heat and sources of ignition. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in dry, cool, well-ventilated areas away from incompatible materials (see Section 10.5), food and drink. Keep away from heat and ignition sources. Keep away from direct sunlight. Keep from freezing. Transfer only to approved containers having correct labeling. Keep containers tightly closed when not in use. Protect containers against physical damage. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Containers are hazardous when empty as they contain product residue. Do not cut, drill, weld, braze, solder grind or perform similar operations on or near empty containers. Use appropriate containment to avoid environmental contamination. Ventilate closed areas. Do not take internally. Keep out of reach of children.

### 7.3 Specific end uses

Apart from the uses mentioned in Section 1.2, no other specific uses are stipulated.

## SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

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### 8.1 Control parameters

Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

**Engineering measures:** Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Use adequate ventilation. Local exhaust is preferable. Refer to Section 7.1.

**Individual protection measures:** Wear protective clothing to prevent repeated or prolonged contact with product. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the representative supplier.

**Hygiene measures:** Facilities storing or using this material should be equipped with an eyewash station and safety shower. Change contaminated clothing. Preventive skin protection is recommended. Wash hands thoroughly after use, before eating, drinking, smoking or using the lavatory.

**Eyeface protection:** Wear safety glasses with unperforated side shields or protective splash goggles during use.

**Hand protection:** Wear gloves made of butyl rubber or those recommended by glove supplier for protection against materials in Section 3. Gloves should be impermeable to chemicals and oil. Breakthrough time of selected gloves must be greater than the intended use period.

**Skin protection:** Wear protective clothing. Wear protective boots if the situation requires.

**Respiratory protection:** Always use an approved respirator when vapor/aerosols exceed permissible exposure limits. Where risk assessment

shows air-purifying respirators are appropriate use a half-mask respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Follow OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.

**Environmental exposure controls:** Do not empty into drains.

*PPE must not be considered a long-term solution to exposure control. PPE usage must be accompanied by employer programs to properly select, maintain, clean fit and use. Consult a competent industrial hygiene resource to determine hazard potential and/or the PPE manufacturers to ensure adequate protection*



## SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

|                                         |                                               |
|-----------------------------------------|-----------------------------------------------|
| Appearance                              | Clear, colorless liquid                       |
| Odor                                    | Characteristic                                |
| Odor Threshold                          | No data available                             |
| Molecular Weight                        | 142.20 g/mol                                  |
| Chemical Formula                        | C <sub>8</sub> H <sub>14</sub> O <sub>2</sub> |
| pH                                      | Not applicable                                |
| Freezing/Melting Point                  | - 35 °C (- 31 °F)                             |
| Boiling Point Range                     | 155 °C (311 °F)                               |
| Evaporation Rate                        | No data available                             |
| Flammability (solid, gas)               | Not applicable                                |
| Flash Point                             | 49 °C (120.2 °F), closed cup                  |
| Autoignition Temperature                | 390 °C (734 °F)                               |
| Decomposition Temperature               | No data available                             |
| Lower Explosive Limit (LEL)             | 1% (v)                                        |
| Upper Explosive Limit (UEL)             | 8% (v)                                        |
| Vapor Pressure                          | 36.3 mm Hg @ 20 °C                            |
| Vapor Density                           | 4.9 [Air = 1]                                 |
| Specific Gravity                        | 0.9                                           |
| Viscosity                               | No data available                             |
| Solubility in Water                     | Slightly miscible                             |
| Partition Coefficient (n-octanol/water) | log P <sub>ow</sub> = 2.95                    |
| Oxidizing Properties                    | Not applicable                                |
| Explosive Properties                    | Not applicable                                |
| Volatiles by Weight @ 21 °C             | No data available                             |

### 9.2 Other Data

None known

## SECTION 10 – STABILITY AND REACTIVITY

### 10.1 Reactivity

This material is stable under normal handling conditions and use.

### 10.2 Chemical Stability

This material is stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Unstable upon depletion of the inhibitor. Polymerization may occur under the influences of heat, light or on contact with polymerization initiators. Polymerization is exothermic and can degenerate into an uncontrolled reaction.

### 10.4 Conditions to avoid

This material polymerizes exothermically in the presence of heat, contamination, oxygen-free atmosphere, free radicals, peroxides and inhibitor depletion. DO NOT expose to sunlight.

### 10.5 Incompatible materials

Acids, bases, oxidizing agents, light, free radical initiators

### 10.6 Hazardous decomposition products

Thermal decomposition products include oxides of carbon, hazardous fumes and gases.

## SECTION 11 – TOXICOLOGICAL INFORMATION

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### 11.1 Information on toxicological effects

#### Acute oral toxicity

LD<sub>50</sub>, rat: 9,590 mg/kg (male and female)

#### Acute inhalation toxicity

No data available

#### Acute dermal toxicity

LD<sub>50</sub>, Guinea pig: > 17,760 mg/kg

#### Skin irritation

Causes skin irritation.

#### Eye irritation

Causes serious eye irritation.

#### Sensitization

May cause allergic skin reactions and asthma-like symptoms.

#### Genotoxicity in vitro

No data available

#### Mutagenicity

No data available

#### Specific organ toxicity - single exposure

May cause respiratory irritation.

#### Specific organ toxicity - repeated exposure

No data available

#### Aspiration hazard

No data available

### 11.2 Further information

This product contains no substances present at levels greater than or equal to the 0.1% threshold (de minimis) that are identified as a probable, possible, potential or confirmed carcinogens by ACGIH, IARC, NTP or OSHA. No data is available regarding the mutagenicity or teratogenicity of this product, nor is there any available data that indicates that it causes adverse developmental or fertility effects.

Handle in accordance with good industrial hygiene and safety practice.

## SECTION 12 - ECOLOGICAL INFORMATION

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### 12.1 Toxicity

This material is harmful to aquatic life.

#### Toxicity to fish:

LC<sub>50</sub> - *Oncorhynchus mykiss* (rainbow trout), 96 h: 20 mg/l

#### Toxicity to aquatic invertebrates:

EC<sub>50</sub> - *Daphnia magna* (Water flea), 48 h: > 29 mg/l, immobilization

#### Toxicity to aquatic plants:

EC<sub>50</sub> - *Scenedesmus capricornutum* (fresh water algae), 96 h: > 0.29 mg/l, growth inhibition

### 12.2 Persistence and degradability

This product is readily biodegradable.

### 12.3 Bioaccumulation potential

This material is not expected to bioaccumulate.

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

This material is not persistent, bioaccumulative and toxic (PBT) and not very persistent and very bioaccumulative (vPvB).

### 12.6 Other effects

#### Additional ecological information

Do not allow material to run into surface waters, wastewater or soil.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## SECTION 13 – DISPOSAL CONSIDERATIONS

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### 13.1 Waste treatment methods

Methods of disposal: The generation of waste should be avoided or minimized whenever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. Avoid dispersal of spilt material and runoff

and contact with soil, waterways, drains and sewers.

**RCRA F-Series:** No listings above the reportable threshold (de minimis)

**RCRA U-Series:** No listings above the reportable threshold (de minimis)

## SECTION 14 – TRANSPORTATION INFORMATION

**Note:** Transportation information provided is for reference only. Customer is urged to consult 49 CFR 100 - 177, IMDG, IATA, EC, United Nations TDG and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

*Limited quantity for flammable liquids Packing Group III when inner packagings are not over 5.0 liters (1.3 gallons) net capacity each, packed in a strong outer packaging.*

### USA DOT (Ground Transportation) - Bulk and Non-bulk

|                                |                                         |
|--------------------------------|-----------------------------------------|
| <b>Proper Shipping Name</b>    | Isobutyl methacrylate, stabilized       |
| <b>Hazard Class</b>            | 3                                       |
| <b>UN/NA</b>                   | UN2283                                  |
| <b>Packing Group</b>           | III                                     |
| <b>NEAREG</b>                  | Guide #130P                             |
| <b>Packaging Authorization</b> | Non-Bulk: 49 CFR 173.203; Bulk: 173.242 |
| <b>Packaging Exceptions</b>    | 49 CFR 173.150                          |

**Drum Label(s)**



### IMO/IMDG (Water Transportation)

|                             |                                   |
|-----------------------------|-----------------------------------|
| <b>Proper Shipping Name</b> | Isobutyl methacrylate, stabilized |
| <b>Hazard Class</b>         | 3                                 |
| <b>UN/NA</b>                | UN2283                            |
| <b>Packing Group</b>        | III                               |
| <b>Marine Pollutant</b>     | No                                |
| <b>EMS Number</b>           | F-E, S-D                          |

### ICAO/IATA (Air Transportation)

|                             |                                                                               |
|-----------------------------|-------------------------------------------------------------------------------|
| <b>Proper Shipping Name</b> | Isobutyl methacrylate, stabilized                                             |
| <b>Hazard Class</b>         | 3                                                                             |
| <b>UN/NA</b>                | UN2283                                                                        |
| <b>Packing Group</b>        | III                                                                           |
| <b>Quantity Limitations</b> | 49 CFR 175.27 and 175.75 - Cargo Aircraft Only: 60 l; Passenger Aircraft: 5 l |

### RID/ADR (Rail Transportation)

|                             |                                   |
|-----------------------------|-----------------------------------|
| <b>Proper Shipping Name</b> | Isobutyl methacrylate, stabilized |
| <b>Hazard Class</b>         | 3                                 |
| <b>UN/NA</b>                | UN2283                            |
| <b>Packing Group</b>        | III                               |

## SECTION 15 - REGULATORY INFORMATION

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

#### U. S. Federal Regulations

**OSHA Hazard Communication Standard:** This material is classified as hazardous in accordance with OSHA 29 CFR 1910-1200.

**OSHA Process Safety Management Standard:** This product is not regulated under OSHA PSM Standard 29 CFR 1910.119.

**EPA Risk Management Planning Standard:** This product is not regulated under EPA RMP Standard (RMP) 40 CFR Part 68.

**EPA Federal Insecticide, Fungicide and Rodenticide Act:** This product is not a registered Pesticide under the FIFRA, 40 CFR Part 150.

**Toxic Substance Control Act (TSCA) Inventory:** All substances in this product are listed on the TSCA Inventory. This product is not subject to TSCA 12(b) Export Notification.

**Drug Enforcement Administration (DEA) List 2, Essential Chemicals (21 CFR 1310.02(b)) and 1310.4(f)(2)) and Chemical Code Number**  
Not listed

**Drug Enforcement Administration (DEA) Lists 1 & 2, Exempt Chemical Mixtures (21 CFR 1310.12(c)) and Code Number:** Not listed

**Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS) Chemicals:** Not listed

#### **Superfund Amendments and Reauthorization Act (SARA)**

##### **SARA Section 311/312 Hazard Categories**

|                                                   |                                     |
|---------------------------------------------------|-------------------------------------|
| Flammable liquid and vapor                        | May cause an allergic skin reaction |
| Causes skin irritation and serious eye irritation | May cause respiratory irritation    |

**SARA 313 Information:** None of the components of the product exceed the threshold (de minimis) reporting requirements of Section 313 of the Emergency Planning and Community Right-to Know Act of 1986.

**SARA 302/304 Extremely Hazardous Substance:** None of the components of the product exceed the threshold (de minimis) reporting levels of

established by these sections of Title III of SARA.

**SARA 302/304 Emergency Planning & Notification:** None of the components of the product exceed the threshold (de minimis) reporting levels established by of these sections of Title III of SARA.

**Comprehensive Response Compensation and Liability Act (CERCLA):** This product does not contain CERCLA reportable substances.

**Clean Air Act (CAA)**

This product does not contain Hazardous Air Pollutants (HAPs) designated in CAA Section 112 (b).

This product does not contain Class 1 Ozone depleters.

This product does not contain Class 2 Ozone depleters.

**Clean Water Act (CWA)**

This product does not contain Hazardous Substances.

This product does not contain Priority Pollutants.

This product does not contain Toxic Pollutants.

**U.S. State Regulations**

**California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986**

This product contains no chemical(s) known to the state of California to cause cancer birth defects or reproductive harm in concentrations that exceed the threshold (de minimis) reporting levels established under Proposition 65.

**Other U.S. State Inventories**

*Isobutyl Methacrylate* (CAS #97-86-9) is listed on the following State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/Air Pollutants lists: NY.

**Canada**

**WHMIS Hazard Classification**

Flammable liquid and vapor

**Canadian National Pollutant Release Inventory (NPRI):** None of the components of this material are listed on the NPRI.

**European Economic Community**

**WGK, Germany (Water danger/protection):** 1 (slightly hazardous to water)

**Global Chemical Inventory Lists**

| Country       | Inventory Name                                                     | Listed |
|---------------|--------------------------------------------------------------------|--------|
| Canada        | Domestic Substance List (DSL)                                      | Yes    |
| Canada        | Non-Domestic Substance List (NDSL)                                 | No     |
| Europe        | Inventory of New and Existing Chemicals (EINECS)                   | Yes    |
| United States | Toxic Substance Control Act (TSCA)                                 | Yes    |
| Australia     | Australian Inventory of Chemical Substances (AICS)                 | Yes    |
| New Zealand   | New Zealand Inventory of Chemicals (NZIoC)                         | Yes    |
| China         | Inventory of Existing Chemical Substances in China (IECSC)         | Yes    |
| Japan         | Inventory of Existing and New Chemical Substances (ENCS)           | Yes    |
| Korea         | Existing Chemicals List (KECI)                                     | Yes    |
| Philippines   | Philippines Inventory of Chemicals and Chemical Substances (PICCS) | Yes    |

\*Yes - All components of this product comply with the inventory requirements administered by the governing country.

No - One or more components of this product are not on the inventory or are exempt from listing.

**15.2 Chemical safety assessment**

For this product a chemical safety assessment was not carried out.

**SECTION 16 - OTHER INFORMATION**

**Hazardous Material Information System (HMIS)**

|                     |   |
|---------------------|---|
| HEALTH              | 2 |
| FLAMMABILITY        | 2 |
| PHYSICAL HAZARD     | 0 |
| PERSONAL PROTECTION | C |

C = safety goggles, gloves  
& apron

**HMIS Hazard Rating Legend**

0 = Minimal 1 = Slight 2 = Moderate

3 = Serious 4 = Severe

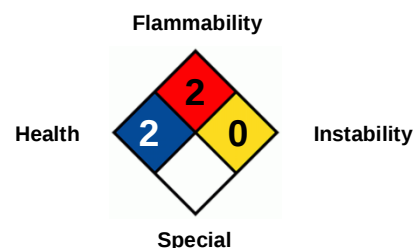
\* = Chronic Health Hazard

**NFPA Hazard Rating Legend**

0 = Insignificant 1 = Slight 2 = Moderate

3 = High 4 = Extreme

**National Fire Protection Association (NFPA)**



**Abbreviation Key**

|       |                                                                                                                   |                  |                                      |
|-------|-------------------------------------------------------------------------------------------------------------------|------------------|--------------------------------------|
| ACGIH | American Conference of Governmental Industrial Hygienists                                                         | LD <sub>50</sub> | Lowest Lethal Dose                   |
| ADR   | Accord Dangereux Routier (European regulations concerning the international transport of dangerous goods by road) | mppcf            | Millions of Particles Per Cubic Foot |
| CAS   | Chemical Abstract Services                                                                                        | NA               | North America                        |

|                         |                                                                               |
|-------------------------|-------------------------------------------------------------------------------|
| <b>CFR</b>              | Code of Federal Regulations                                                   |
| <b>COC</b>              | Cleveland Open Cup                                                            |
| <b>DOT</b>              | Department of Transportation                                                  |
| <b>EC<sub>50</sub></b>  | Half maximal effective concentration                                          |
| <b>EMS</b>              | Emergency Response Procedures for Ships Carrying                              |
| <b>EPA</b>              | Environmental Protection Agency                                               |
| <b>ErC<sub>50</sub></b> | Reduction of Growth Rate                                                      |
| <b>ERG</b>              | Emergency Response Guide Book                                                 |
| <b>FDA</b>              | Food and Drug Administration                                                  |
| <b>GHS</b>              | Globally Harmonized System of Classification and Labelling of Chemicals (GHS) |
| <b>HCS</b>              | Hazard Communication Standard                                                 |
| <b>IARC</b>             | International Agency for Research on Cancer                                   |
| <b>IATA</b>             | International Air Transport Association                                       |
| <b>IC<sub>50</sub></b>  | Half Maximal Inhibitory Concentration                                         |
| <b>ICAO</b>             | International Civil Aviation Organization                                     |
| <b>IDLH</b>             | Immediately Dangerous to Life and Health                                      |
| <b>IMDG</b>             | International Maritime Dangerous Goods                                        |
| <b>IMO</b>              | International Maritime Organization                                           |
| <b>LC<sub>50</sub></b>  | 50% Lethal Concentration                                                      |
| <b>LD<sub>50</sub></b>  | 50% Lethal Dose                                                               |

|                |                                                     |
|----------------|-----------------------------------------------------|
| <b>NAERG</b>   | North American Emergency Response Guide Book        |
| <b>NIOSH</b>   | National Institute for Occupational Safety & Health |
| <b>NTP</b>     | National Toxicology Program                         |
| <b>OSHA</b>    | Occupational Safety and Health Administration       |
| <b>PBT</b>     | Persistent, Bioaccumulating and Toxic               |
| <b>PEL</b>     | Permissible exposure limit                          |
| <b>PMCC</b>    | Pensky-Martens Closed Cup                           |
| <b>ppm</b>     | Parts Per Million                                   |
| <b>RCRA</b>    | Resource Conservation and Recovery Act              |
| <b>RID</b>     | Dangerous Goods by Rail                             |
| <b>RQ</b>      | Reportable Quantity                                 |
| <b>TCC/Tag</b> | Tagliabue Closed Cup                                |
| <b>TLV</b>     | Threshold Limit Value                               |
| <b>TSCA</b>    | Toxic Substance Control Act                         |
| <b>TWA</b>     | Time-weighted Average                               |
| <b>UN</b>      | United Nations                                      |
| <b>VOC</b>     | Volatile Organic Compounds                          |
| <b>vPvB</b>    | Very Persistent and Very Bioaccumulating            |
| <b>WHMIS</b>   | Workplace Hazardous Materials Information System    |

#### DISCLAIMER OF RESPONSIBILITY

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