

# Safety Data Sheet

## Diethyl Ether (DEE)



### SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

#### 1.1 Product identifier

**Product name:** Diethyl Ether (DEE)  
**Product number:** Diethyl Ether (DEE)  
**Synonym(s):** Ethyl ether; Ether

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

**General Use:** None specified  
**Uses advised against:** None specified

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

**Manufacturer/Distributor**  
GreenChem Industries  
222 Clematis Street, Suite 207  
West Palm Beach, FL 33401 USA  
1-561-659-2236

#### 1.4 Emergency telephone number

CHEMTREC: 1-800-424-9300 (USA)

### 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 1 [H224]  
Acute Toxicity, Oral - Category 4 [H302]  
Single Target Organ Toxicity, Single Exposure - Category 3; STOT SE 3 [H336]

#### 2.2 Label elements

**Hazard symbol(s):**



GHS02



GHS07

**Signal word:** **Danger**

**Hazard statement(s):** H224 - Extremely flammable liquid and vapor  
H302 - Harmful if swallowed  
H336 - May cause drowsiness or dizziness

**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.  
P2610 - Avoid breathing mist or vapor.  
P264 - Wash hands and other exposed skin areas thoroughly after handling.  
P270 - Do not eat, drink or smoke when using this product.  
P271 - Use only outdoors or in a well ventilated area.  
P280 - Wear protective gloves, protective clothing and eye protection.

**[Response]**

P301 + P330 + P312 - IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell.  
P303 + P361 + P353 + P312 - IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water or shower. Call a POISON CENTER or doctor if you feel unwell.  
P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a comfortable position for breathing. Call a POISON CENTER or doctor if you feel unwell.  
P370 + P378 - In case of fire: Use water fog, foam, dry chemical or carbon dioxide for extinction.

**[Storage]**

P405 + P403 + P233 + P235 - Store locked up in a well-ventilated place. Keep container tightly closed. Keep cool.

**[Disposal]**

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

May form explosive peroxides. Repeated exposure may cause skin dryness or cracking.

### SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

% by Weight	Ingredient	CAS Number	EC Number	Index Number	GHS Classification
≤ 100	Diethyl ether	60-29-7	200-467-2	603-022-00-4	H224, H302, H335

≤ 5	Ethanol	64-17-5	200-578-6	603-002-00-5	H225
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\*Contains Butyl hydroxytoluene (10 ppm) for stabilization.

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 vomit 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 eye irritation with redness, swelling, itching, tearing, blurred vision and pain/discomfort. Vapor or mist may cause eye irritation.

**Skin:** May cause skin irritation with localized redness, itching and discomfort. Prolonged and repeated contact with unprotected skin may cause defatting of the skin or dermatitis. Prolonged contact with unprotected skin may result in the absorption of harmful amounts of material.

**Inhalation:** Harmful if inhaled. Irritating to nose, throat and respiratory system. Symptoms include headache, salivation, cough, chest tightness and shortness of breath. Causes central nervous system depression characterized by headache, drowsiness, dizziness, nausea, vomiting, narcosis, irregular breathing, circulatory collapse, unconsciousness and possible death due to respiratory failure.

**Ingestion:** Harmful if swallowed. May cause irritation of the digestive tract with nausea, vomiting, abdominal pain and constipation or diarrhea. May cause central nervous system depression characterized by excitement, followed by headache, excitement, fatigue, nausea, vomiting, stupor and coma. May affect the liver. This material can get into the lungs during swallowing or vomiting causing lung inflammation and chemical pneumonitis, which may be fatal. Symptoms of aspiration into the lungs include coughing, gasping, choking, shortness of breath, bluish colored skin, rapid breathing and rapid heart rate.

**Chronic:** Pre-existing skin, eye and respiratory disorders may be aggravated by exposure to this product. Prolonged or repeated skin contact may cause drying and cracking of the skin, dermatitis or aggravate existing skin conditions. Impaired central nervous system functions from pre-existing disorders may be aggravated by exposure to this product. Chronic exposure to high concentrations may affect the liver.

Intentional misuse by deliberately concentrating and inhaling this product may be harmful or fatal. Organic solvents may be absorbed into the body by inhalation and cause permanent damage to the nervous system, including the brain. Chronic solvent abuse (e.g. sniffing solvents) has been associated with anorexia, irregular heart rhythms and potential cardiac arrest.

### 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

Extremely 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 (e.g. cell phones) can ignite vapors, causing a flash fire. Closed containers may explode 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.

### 5.3 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

### 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 SPILL 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

### 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.

#### Advice on protection against fire and explosion

Keep away from heat, hot surfaces and sources of ignition. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical, lighting and ventilating equipment.

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

Store between 15 - 25 °C (59 - 77 °F) in dry, cool, well-ventilated areas away from incompatible materials (see Section 10.5), food and drink. Do not store in direct sunlight. Keep away from heat and ignition sources. Keep away from oxidizing agents, acids, bases and combustible materials. 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. Keep locked up and out of reach of children.

Test for peroxide formation periodically and before distillation.

### 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

### 8.1 Control parameters

#### Occupational exposure limit values

CAS Number	Ingredient	OSHA PEL	ACGIH TLV	NIOSH
60-29-7	Diethyl ether	400 ppm TWA; 1,200 ppm STEL	400 ppm TWA; 500 ppm STEL	400 ppm TWA; 500 ppm STEL 1,900 ppm IDLH
64-17-5	Ethanol	1,000 ppm; 1,900 mg/m <sup>3</sup> TWA	1,000 ppm; 1,880 mg/m <sup>3</sup> TWA	1,000 ppm; 1,900 mg/m <sup>3</sup> TWA 3,300 ppm IDLH

### 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. *Use only under a hood in the lab.* 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.

**Eye/face protection:** Wear safety glasses with unperforated side shields or splash goggles during use.

**Hand protection:** Wear Viton® gloves 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. Wear flame retardant antistatic protective clothing if necessary.

**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

<b>Appearance</b>	Clear, colorless liquid
<b>Odor</b>	Sweet, ethereal
<b>Odor Threshold</b>	< 10 ppm
<b>Molecular Weight</b>	74.12 g/mol
<b>Chemical Formula</b>	C <sub>4</sub> H <sub>10</sub> O
<b>pH</b>	No data available
<b>Freezing/Melting Point</b>	- 116 °C (- 176.8 °F)
<b>Initial Boiling Point</b>	34.6 °C (94.3 °F)
<b>Evaporation Rate</b>	No data available
<b>Flammability (solid, gas)</b>	Not applicable
<b>Flash Point</b>	- 45 °C (- 49 °F), Tag closed cup
<b>Autoignition Temperature</b>	180 °C (356 °F)
<b>Decomposition Temperature</b>	No data available
<b>Lower Explosive Limit (LEL)</b>	1.9 % (v)
<b>Upper Explosive Limit (UEL)</b>	48 % (v)
<b>Vapor Pressure</b>	440 mm Hg @ 20 °C
<b>Vapor Density</b>	2.6 [Air = 1]
<b>Specific Gravity</b>	0.71 @ 20 °C
<b>Viscosity, Dynamic</b>	0.23 cPs @ 20 °C
<b>Solubility in Water</b>	Miscible; 65 g/l @ 20 °C
<b>Partition Coefficient (n-octanol/water)</b>	log P <sub>ow</sub> = 1.1
<b>Oxidizing Properties</b>	Not applicable
<b>Explosive Properties</b>	No data available
<b>Volatiles by Weight @ 21 °C</b>	100%

### 9.2 Other Data

No data available

## SECTION 10 – STABILITY AND REACTIVITY

### 10.1 Reactivity

This material is stable under normal handling conditions and use. Formation of peroxides possible. Vapors may form explosive mixture with air.

### 10.2 Chemical Stability

This material is stable under recommended storage conditions. Stabilized with ethanol (2%) and butyl hydroxytoluene (10 ppm).

### 10.3 Possibility of hazardous reactions

Vapors can form explosive mixture with air. Reacts violently with oxidants causing fire and explosion hazard. Hazardous polymerization will not occur.

### 10.4 Conditions to avoid

High temperatures (≥ 25 °C), sources of ignition, hot surfaces, direct sunlight, moisture, contact with incompatible materials

### 10.5 Incompatible materials

Strong oxidizing agents, acids, bases

### 10.6 Hazardous decomposition products

Thermal decomposition products include oxides of carbon and flammable gases.

## SECTION 11 – TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute oral toxicity

LD<sub>50</sub>, rat: 1,227.27 mg/kg

#### Acute inhalation toxicity

LC<sub>50</sub>, mouse: 97.5 mg/l, 4 h

**Acute dermal toxicity**

LD<sub>50</sub>, rat: > 20 g/kg

**Skin irritation**

May cause skin irritation.

**Eye irritation**

Causes eye irritation.

**Sensitization**

No data available

**Carcinogenicity**

No data available

**Germ cell mutagenicity**

No data available

**Reproductive toxicity**

No data available

**Specific organ toxicity - single exposure**

May cause respiratory irritation, drowsiness and dizziness.

**Specific organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**11.2 Further information**

**Ethanol** (CAS #64-17-5): Carcinogen classifications of IARC, ACGIH, NTP, OSHA and California Proposition 65 apply to *beverage use only*.

This product is NOT intended for this use. Ethanol has been shown to produce fetotoxicity in the embryo or fetus of laboratory animals. Prenatal exposure to ethanol is associated with congenital malformations that have collectively been termed "fetal alcohol syndrome".

Handle in accordance with good industrial hygiene and safety practice.

**SECTION 12 - ECOLOGICAL INFORMATION**

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**12.1 Toxicity**

Large spills or discharges of this material may be harmful to aquatic life.

**Data for Diethyl Ether****Toxicity to fish:**

LC<sub>50</sub> - *Leuciscus idus* (Golden orfe), 48 h: 2,840 mg/l

**Toxicity to aquatic invertebrates:**

EC<sub>50</sub> - *Daphnia magna* (Water flea), 48 h: 1,380 mg/l

**Toxicity to aquatic plants:**

ErC<sub>50</sub> - *Desmodesmus subspicatus* (Green algae), static test, 72 h: > 100 mg/l

**Toxicity to bacteria:**

EC<sub>50</sub> - Activated sludge (Bacteria), static test, 3 h: 21 g/l

NOEC<sub>50</sub> - Activated sludge (Bacteria), static test, 3 h: 42 mg/l

**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**

This material is not expected to adsorb to soil.

**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:** Diethyl ether (CAS #60-29-7), F003

**RCRA U-Series:** Diethyl ether (CAS #60-29-7), U117

## 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 in Packing Group I when inner packagings are not over 0.5 liter (0.1 gallon) net capacity each, packed in a strong outer packaging.

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

Proper Shipping Name	Diethyl Ether
Hazard Class	3
UN	UN1155
Packing Group	I
NAREG	Guide #127
Packaging Authorization	Non-Bulk: 49 CFR 173.201; Bulk: 173.243
Packaging Exceptions	49 CFR 173.150

Drum Label(s)



### Transportation of Dangerous Goods (TGD) - Canada

Proper Shipping Name	Diethyl Ether
Hazard Class	3
UN	UN1155
Packing Group	I
Special Provisions	---
Explosive Limit & Limited Quantity Index	0
Excepted Quantity Index	E3
ERAP Index	---
Passenger Carrying Vessel Index	Forbidden
Passenger Carrying Road Vehicle/	1 I
Passenger Carrying Railway Vehicle Index	

### IMO/IMDG (Water Transportation)

Proper Shipping Name	Diethyl Ether
Hazard Class	3
UN	UN1155
Packing Group	I
Marine Pollutant	No
EMS Number	F-E, S-D

### ICAO/IATA (Air Transportation)

Proper Shipping Name	Diethyl Ether
Hazard Class	3
UN	UN1155
Packing Group	I
Quantity Limitations	49 CFR 175.27 and 175.75 - Cargo Aircraft Only: 30 I; Passenger Aircraft: 1 I

### RID/ADR (Rail Transportation)

Proper Shipping Name	Diethyl Ether
Hazard Class	3
UN	UN1155
Packing Group	I

## 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 contains the following EPA RMP Standard (RMP) 40 CFR Part 68 regulated substance: Diethyl ether (CAS #60-29-707-31-3) Threshold Quantity (TQ) = 4,536 kg (10,000 lb)

**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:**

No listings

**Drug Enforcement Administration (DEA) Lists 1 & 2, Exempt Chemical Mixtures (21 CFR 1310.12(c)) and Code Number:** No listings

**Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS) Chemicals**

Ethyl ether (CAS #60-29-7)

Security Issue: Release - Flammables

Release: Minimum Concentration = 1.00%

Release: Screening threshold quantity = 10,000 lb



## Superfund Amendments and Reauthorization Act (SARA)

### SARA Section 311/312 Hazard Categories

Extremely flammable liquid and vapor      Harmful if swallowed      May cause drowsiness or dizziness      May form explosive peroxides

**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 contains the following CERCLA reportable substance: Diethyl ether (CAS #60-29-7): RQ = 45.4 kg (100 lb)

### Clean Air Act (CAA)

Diethyl ether (CAS #60-29-7) is a Hazardous Air Pollutant (HAP) designated in CAA Section 112 (b).

Diethyl ether (CAS #60-29-7) is regulated under the CAA112(r), Accidental Release Prevention /Risk Management Plan Rule: TQ = 10,000 lb.

This product does not contain Class 1 Ozone depleters.

This product does not contain Class 2 Ozone depleters.

### Clean Water Act (CWA)

Diethyl ether (CAS #60-29-7) is a Hazardous Substance.

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

*Diethyl ether* (CAS #60-29-7) is listed on the following State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/Air Pollutants lists: CA, DE, NJ, PA, RI.

*Ethanol* (CAS #64-17-5) is listed on the following State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/Air Pollutants lists: CA, ID, MA, MN, NJ, NY, PA, WA.

### Canada

#### WHMIS Hazard Classification

Extremely flammable liquid and vapor      Harmful if swallowed      May cause drowsiness or dizziness

**Canadian National Pollutant Release Inventory (NPRI):** None of the substances in 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	4
PHYSICAL HAZARD	0
PERSONAL PROTECTION	H

C = safety glasses, gloves, apron  
& vapor respirator

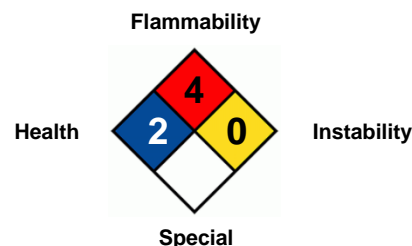
#### HMIS Hazard Rating Legend

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)



### Full Text of GHS Hazard Phrases Referenced in Section 3 (not covered in Section 2)

H225 - Highly flammable liquid and vapor

#### Abbreviation Key

<b>ACGIH</b>	American Conference of Governmental Industrial Hygienists	<b>LD<sub>Lo</sub></b>	Lowest Lethal Dose
<b>ADR</b>	Accord Dangereux Routier (European regulations concerning the international transport of dangerous goods by road)	<b>mppcf</b>	Millions of Particles Per Cubic Foot
<b>CAS</b>	Chemical Abstract Services	<b>NA</b>	North America
<b>CFR</b>	Code of Federal Regulations	<b>NAERG</b>	North American Emergency Response Guide Book
<b>COC</b>	Cleveland Open Cup	<b>NIOSH</b>	National Institute for Occupational Safety & Health
<b>DOT</b>	Department of Transportation	<b>NTP</b>	National Toxicology Program
<b>EC<sub>50</sub></b>	Half maximal effective concentration	<b>OSHA</b>	Occupational Safety and Health Administration
<b>EMS</b>	Emergency Response Procedures for Ships Carrying	<b>PBT</b>	Persistent, Bioaccumulating and Toxic
<b>EPA</b>	Environmental Protection Agency	<b>PEL</b>	Permissible exposure limit
<b>ErC<sub>50</sub></b>	Reduction of Growth Rate	<b>PMCC</b>	Pensky-Martens Closed Cup
<b>ERG</b>	Emergency Response Guide Book	<b>ppm</b>	Parts Per Million
<b>FDA</b>	Food and Drug Administration	<b>RCRA</b>	Resource Conservation and Recovery Act
<b>GHS</b>	Globally Harmonized System of Classification and Labelling of Chemicals (GHS)	<b>RID</b>	Dangerous Goods by Rail
<b>HCS</b>	Hazard Communication Standard	<b>RQ</b>	Reportable Quantity
<b>IARC</b>	International Agency for Research on Cancer	<b>TCC/Tag</b>	Tagliabue Closed Cup
<b>IATA</b>	International Air Transport Association	<b>TLV</b>	Threshold Limit Value
<b>IC<sub>50</sub></b>	Half Maximal Inhibitory Concentration	<b>TSCA</b>	Toxic Substance Control Act
<b>ICAO</b>	International Civil Aviation Organization	<b>TWA</b>	Time-weighted Average
<b>IDLH</b>	Immediately Dangerous to Life and Health	<b>UN</b>	United Nations
<b>IMDG</b>	International Maritime Dangerous Goods	<b>VOC</b>	Volatile Organic Compounds
<b>IMO</b>	International Maritime Organization	<b>vPvB</b>	Very Persistent and Very Bioaccumulating
<b>LC<sub>50</sub></b>	50% Lethal Concentration	<b>WHMIS</b>	Workplace Hazardous Materials Information System
<b>LD<sub>50</sub></b>	50% Lethal Dose		

### DISCLAIMER OF RESPONSIBILITY

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