

## Section 1 Chemical Product and Company Information

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(800) 225-3739

**CHEMTREC 24 Hour Emergency**  
**Phone Number (800) 424-9300**  
For laboratory use only.  
Not for drug, food or household use.

<b>Product</b>	DIETHYL ETHER
<b>Synonyms</b>	Ethyl Ether / Ether

## Section 2 Hazards Identification

**Signal word:** DANGER  
**Pictograms:** GHS02 / GHS07  
**Target organs:** Central nervous system



**GHS Classification:**  
Flammable liquid (Category 1)  
Acute toxicity, inhalation (Category 4)  
STOT-SE (Category 3)

**GHS Label information: Hazard statement:**  
H224: Extremely flammable liquid and vapour.  
H302: Harmful if swallowed.  
H336: May cause drowsiness or dizziness.

**Supplementary Hazard Statement Code(s):**  
EUH019: May form explosive peroxides.  
EUH066: Repeated exposure may cause skin dryness or cracking.

**Precautionary statement:**

P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
P233: Keep container tightly closed.  
P241: Use explosion-proof electrical/ventilating/lighting equipment.  
P242: Use only non-sparking tools.  
P243: Take precautionary measures against static discharge.  
P261: Avoid breathing mist/vapours/spray.  
P264: Wash hands thoroughly after handling.  
P270: Do not eat, drink or smoke when using this product.  
P271: Use only outdoors or in a well-ventilated area.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P330+P312: IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell.  
P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P312: Call a POISON CENTER or doctor if you feel unwell.  
P370+P378: In case of fire: Use dry chemical, alcohol foam, carbon dioxide to extinguish.  
P403+P233: Store in a well-ventilated place. Keep container tightly closed.  
P405+P235: Store locked up. Keep cool.  
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

## Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Diethyl ether	60-29-7	96.5 - 100%	200-467-2
Ethyl alcohol	64-17-5	0 - 3.5%	200-578-6

## Section 4 First Aid Measures

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**EYE CONTACT:** MAY CAUSE EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

**SKIN ABSORPTION:** MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

## Section 5 Fire Fighting Measures

**Suitable Extinguishing Media:** Carbon dioxide, dry chemical, dry sand, alcohol foam.

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

**Specific Hazards:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Extremely flammable material and may ignite by heat, sparks, flame or static electricity. Vapors formed from this product are heavier than air and may travel along the ground to a distant source of ignition and flash back instantly. Reacts vigorously with oxidizing materials. May form explosive peroxides when brought in contact with nitric acid.

## Section 6 Accidental Release Measures

**Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

**Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.

**Containment and Cleanup:** Remove all sources of ignition. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

**Precautions for Safe Handling:** Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Conditions for Safe Storage:** Store in a cool, well-ventilated area away from incompatible substances. Keep away from ignition sources. Store at temperature not exceeding 30°C (86°F). Do NOT open container unless contents are at room temperature (72°F) or below for at least 24 hours.

## Section 8 Exposure Controls / Personal Protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Diethyl ether	TWA: 400 ppm STEL: 500 ppm	TWA: 400 ppm	TWA: 400 ppm

**Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

**Respiratory protection:** None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

## Section 9 Physical &amp; Chemical Properties

<b>Appearance:</b> Clear, colorless liquid. <b>Odor:</b> Ether-like odor. <b>Odor threshold:</b> Data not available. <b>pH:</b> Data not available. <b>Melting / Freezing point:</b> -123°C (-189°F) <b>Boiling point:</b> 358°C (676.4°F) <b>Flash point:</b> -45°C (-49°F) CC	<b>Evaporation rate ( Butyl acetate = 1):</b> 37.5 <b>Flammability (solid/gas):</b> Data not available. <b>Explosion limits: Lower / Upper:</b> 1.9% / 36.0% <b>Vapor pressure (mm Hg):</b> 440 @ 25°C (Ether) <b>Vapor density (Air = 1):</b> 2.6 <b>Relative density (Specific gravity):</b> 0.71 g/cm <sup>3</sup> <b>Solubility(ies):</b> 8.43% by weight @ 15°C (H <sub>2</sub> O)	<b>Partition coefficient:</b> Data not available <b>Auto-ignition temperature:</b> 160°C (320°F) <b>Decomposition temperature:</b> Data not available. <b>Viscosity:</b> Data not available. <b>Molecular formula:</b> (C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> O <b>Molecular weight:</b> 74.12
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## Section 10 Stability &amp; Reactivity

**Chemical stability:** Stable

**Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Excessive temperatures, heat, sparks, open flame and other sources of ignition. Heat, light and long standing contribute to instability. Reacts with air to form explosive peroxides.

**Incompatible materials:** Acetyl peroxide, liquid oxygen, bromoazide, chlorine and strong oxidizers such as nitrates. Avoid high heat, flame or other sources of ignition and exposure to light and air.

**Hazardous decomposition products:** Carbon oxides.

## Section 11 Toxicological Information

**Acute toxicity:** Oral-rat LD50: 3.23-3.92 g/kg ; Inhalation-rat LC50: 32,000 ppm/4hr

**Skin corrosion/irritation:** Data not available

**Serious eye damage/irritation:** Data not available

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity:** Data not available

**STOT-single exposure:** The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:**

Inhalation: Inhalation may cause cough, sore throat, drowsiness, vomiting, headache, labored breathing, unconsciousness.

Ingestion: Ingestion causes dizziness, drowsiness, vomiting.

Skin: Contact with skin causes irritation and/or defatting on prolonged contact.

Eyes: Contact with eyes may cause redness and pain.

**Signs and symptoms of exposure:** The substance is irritating to the eyes and respiratory tract. If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. The substance may cause effects on the central nervous system. This may result in narcosis. Exercise appropriate procedures to minimize potential hazards.

**Additional information:** RTECS #: KI5775000

## Section 12 Ecological Information

**Toxicity to fish:** Poecilia reticulata (fish, fresh water), LC50 = 2134 mg/L/14 days

**Toxicity to daphnia and other aquatic invertebrates:** Daphnia magna (Crustacea), EC50 = 165 mg/L/24 hours

**Toxicity to algae:** No data available

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

## Section 14 Transport Information (US DOT / CANADA TDG)

**UN/NA number:** UN1155

**Shipping name:** Diethyl ether

**Hazard class:** 3

**Packing group:** I

**Reportable Quantity:** No


**Marine pollutant:** No

**Exceptions:** Limited quantity equal to or less than 0.5 L

**2012 ERG Guide #** 127

## Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Diethyl ether	Listed	Not listed	U117	Listed	Not listed	 B2

## Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.