

# SAFETY DATA SHEET



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All non-emergency numbers should be directed  
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## ETHYLENE GLYCOL MONOETHYL ETHER

SDS No. M0101

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Ethylene Glycol Monoethyl Ether

Synonyms: 2-Ethoxyethanol; Cellosolve(R), Ethylene glycol ethyl ether, Oxitol, EGEE, 2-EE.

Recommended Use: This product is recommended for laboratory and manufacturing use only. It is not recommended for drug, food or household use.

### 2. HAZARDS IDENTIFICATION



**Classification:**

Flammable Liquids: GHS Category 3

Acute Toxicity, Oral: GHS Category 4

Acute Toxicity, Inhalation: GHS Category 3

Reproductive Toxicity: GHS Category 1B

**Label Elements**

Signal Word: DANGER!

Hazard Statements:

H226 – Flammable liquid and vapor

H302 – Harmful if swallowed.

H331 – Toxic if inhaled.

H360 – May damage fertility or the unborn child.

Precautionary Statements:

P210 – Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

P280 – Wear protective gloves/protective clothing/eye protection/face protection.

P284 – Wear respiratory protection.

P303+P361+P353 – If on skin or hair: Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.

**Emergency Overview**

May cause eye irritation. May cause chemical conjunctivitis and corneal damage. May cause skin irritation. May be absorbed through the skin. May cause irritation and dermatitis. May cause gastrointestinal irritation with nausea, vomiting

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and diarrhea. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma.

HMIS Rating:

Health – 1\* Flammability – 2 Physical Hazard – 0 PPE – User supplied

NOTE: HMIS ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. These ratings are based on the inherent properties of this chemical under expected conditions of normal use and are not intended to be used in emergency situations. PPE is determined by the user based on their needs and conditions.

### 3. COMPOSITION AND INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS No</u>	<u>Percent</u>	<u>Hazardous</u>
Ethylene Glycol Monoethyl Ether	110-80-5	>99%	Yes

### 4. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

Ingestion: Do not induce vomiting unless directed to by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have victim lean forward. Get medical aid immediately.

Skin Contact: Remove any contaminated clothing. Wash skin with soap or mild detergent and water for at least 15 minutes. Get medical attention if irritation persists.

Eye Contact: Check for and remove contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention.

Notes to Physician: Treat symptomatically and supportively.

### 5. FIRE FIGHTING MEASURES

Flammability: Flammable liquid and vapor. (GHS Category 2)

Auto-ignition Temperature: 235° C (455° F)

Flash Point: 43° C (109.4° F)

Flammable Limits: Lower Limit – 1.7 vol %, Upper Limit – 15.6 vol %

Products of Combustion: May decompose into irritating and highly toxic gases under fire conditions (carbon monoxide, carbon dioxide, peroxides).

Specific Fire Hazards: As in any fire, always wear self-contained breathing apparatus in pressure-demand (MSA/NIOSH approved or equivalent), and full protective gear. Use water spray to keep fire exposed containers cool. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.

Specific Explosion Hazards: Containers may explode if heated.

Fire Fighting Media: Use water, dry chemical, carbon dioxide, or appropriate foam. Solid streams of water may be ineffective and spread material...

National Fire Protective Association: Health - 2, Flammability - 2, Reactivity - 0

NOTE: NFPA ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. They are for use by emergency personnel to address the hazards that are presented by short term, acute exposure to this product under fire, spill, or similar emergencies. Ratings involve data and interpretations that may vary from company to company.

### 6. ACCIDENTAL RELEASE MEASURES

Absorb spilled liquid with sorbent pads, socks, or other inert material such as vermiculite, sand, or earth. Use spark-proof tools. Provide ventilation to the affected area and remove all ignition sources. Approach the spill from upwind and pick up

absorbed material and place it in a suitable container. Always use proper personal protective equipment as described in section 8.

## 7. HANDLING AND STORAGE

Precautions: Always use proper personal protective equipment as described in section 8. Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Remove contaminated clothing and wash before reuse. Ground or bond containers before transferring material. Empty containers contain product residue (liquid and vapor) and can be dangerous. Keep container tightly closed and away from heat, spark, and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks, or open flames. Use with adequate ventilation. Avoid breathing vapor or mist.

Storage: Keep away from heat, sparks, and flame in a flammables area. Store in a cool place in the original container and protect from sunlight and moisture. Keep under a nitrogen blanket. Keep from contact with oxidizing materials. Containers should be dated when opened and tested periodically for the presence of peroxides. Should crystals form in a peroxidizable liquid, peroxidation may have occurred and the product should be considered extremely dangerous. In this instance, the container should only be opened remotely by professionals. All peroxidizable substances should be stored away from heat and light and be protected from ignition sources.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or using the material should be equipped with eyewash station and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Personal Protection: Wear protective chemical goggles or other appropriate eye protection. Use butyl rubber gloves and protective clothing to prevent skin exposure. A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever possible. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Exposure Limits:

ACGIH – 5 ppm TWA; Skin – potential significant contribution to overall exposure by cutaneous route

NIOSH – 0.5 ppm TWA; 1.8 mg/m<sup>3</sup> TWA; 500 ppm IDLH

OSHA Final PELs – 200 ppm TWA; 740 mg/m<sup>3</sup> TWA

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State and Appearance: Clear, colorless liquid.

Odor: Mild, pleasant, ethereal, sweetish odor

Molecular Formula: C<sub>2</sub>H<sub>5</sub>OCH<sub>2</sub>CH<sub>2</sub>OH

Molecular Weight: 90.12

Auto-ignition Temperature: 235° C (455° F)

Flash Point: 43° C (109.4° F)

Flammable Limits: Lower Limit – 1.7 vol %, Upper Limit – 15.6 vol %

pH: Not available

Boiling Point: 135° C @ 760 mm Hg

Freezing/Melting Point: -90° C

Decomposition Temperature: Not available.

Specific Gravity: 0.93 g/cm<sup>3</sup>

Vapor Density (Air=1): 3.1

Vapor Pressure: 3.8 mm Hg @ 25° C.

Evaporation Rate (Butyl acetate = 1): 0.41.

Viscosity: 2.1 cP @ 20° C.

Solubility: Soluble

Conductivity: Conductive; Conductivity = 9.3x10<sup>6</sup> pS/m; Dielectric Constant = 29.6; Relaxation Time Constant = 2.8x10<sup>-5</sup> seconds

## 10. STABILITY AND REACTIVITY

Stability: Under normal storage conditions, peroxidizable compounds can form and accumulate peroxides which may explode when subject to heat or shock. This material is most hazardous when peroxide levels are concentrated by distillation or evaporation.

Conditions to Avoid: Light, ignition sources, excess heat, flames, prolonged exposure to air.

Incompatibility With Various Substances: Strong oxidizers, copper.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, peroxides.

Hazardous Polymerization: Will not occur.

## 11. TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, skin absorption, skin contact

Acute Exposure Hazards:

INHALATION HAZARD: Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. May cause respiratory tract irritation. Aspiration may lead to pulmonary edema. Vapors may cause dizziness or suffocation. May cause burning sensation in the chest.

INGESTION HAZARD: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. Ingestion of large amounts may cause CNS depression.

SKIN CONTACT HAZARD: May cause skin irritation. May be absorbed through the skin. May cause irritation and dermatitis. May cause cyanosis of the extremities.

EYE CONTACT HAZARD: May cause eye irritation. May cause chemical conjunctivitis and corneal damage.

Chronic Exposure Hazards: Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion. Prolonged or repeated skin contact may cause defatting and dermatitis. Chronic exposure may cause reproductive disorders and teratogenic effects.

Animal Toxicity:

Corrosion/irritation test, rabbit eye: 24H Mild;

Inhalation, rat: LD50 = 7.63 mg/L/8H;

Inhalation, rat: LD50 = 2000 ppm/7H;

Oral, guinea pig: LD50 = 1400 mg/kg;

Oral, rat: LD50 = 2125 mg/kg;

Skin, rabbit: LD50 = 3300 mg/kg;

Carcinogenicity: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65

Epidemiology: No information available.

Reproductive Effects: May cause congenital malformation in the fetus.

Mutagenicity: No information available.

Neurotoxicity: No information available.

Other Studies: No information available.

## 12. ECOLOGICAL INFORMATION

Ecotoxicity:

Fish: bluegill: LC50 = 10,000 mg/L, 96H, unspecified;

Aquatic invertebrates: water flea: EC50 = >10,000 mg/L/1892.5, 2449H, unspecified;

Environmental Fate: Readily biodegradable. 63-83% (OECD Test Guideline 301C).

## 13. DISPOSAL CONSIDERATIONS

Material that cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing, use or contamination of this product may change the waste management options. Waste generators must

decide if discarded material is a hazardous waste. State and local disposal regulations may differ from federal disposal definitions found in 40 CFR 261.3. Dispose of container and unused contents in accordance with federal, state and local requirements. This material is a "U" listed waste (U359) under 40 CFR 261.33.

#### 14. TRANSPORT INFORMATION

##### US DOT

Proper Shipping Name: Ethylene Glycol Monoethyl Ether  
Hazard Class: 3  
UN Number: UN1171  
Packing Group: III

##### IMDG

Proper Shipping Name: Ethylene Glycol Monoethyl Ether  
Hazard Class: 3  
UN Number: UN1171  
Packing Group: III

##### IATA

Proper Shipping Name: Ethylene Glycol Monoethyl Ether  
Hazard Class: 3  
UN Number: UN1171  
Packing Group: III

#### 15. REGULATORY INFORMATION

##### US Federal Regulations:

CERCLA Hazardous Substances: CAS# 110-80-5: 1000 lb (454 kg) RQ  
SARA Section 302: Does not have a TPQ  
SARA Codes: CAS# 110-80-5 – immediate, delayed, fire  
Section 313: Ethylene Glycol Monoethyl Ether (110-80-5) is subject to SARA Title III Section 313 40 CFR 373 reporting requirements.  
Clean Air Act: CAS# 110-80-5 (as glycol ethers) is listed as a hazardous air pollutant (HAP).  
OSHA: Not considered highly hazardous by OSHA.

##### US State Regulations:

CAS# 110-80-5 is on the following state right-to-know lists: New Jersey, Pennsylvania, and Massachusetts  
California Prop 65: WARNING! This product contains ethylene glycol monoethyl ether, a chemical known to the state of California to cause birth defects or other reproductive harm.

#### 16. OTHER INFORMATION

Originally Prepared: 6/30/2006

Last Revised: 9/22/2014 – Updated pictograms, hazard categories, hazard statements, and precautionary statements in Section 2. Updated Toxicity information in Section 11. Updated Ecotoxicity information in Section 12.

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