

# SAFETY DATA SHEET



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## 24-Hour Emergency Number (CHEMTREC)

USA: 800-424-9300  
International: 703-527-3887

All non-emergency numbers should be directed  
to Customer Service at 800-PURITY1

## ETHYLENE GLYCOL MONOMETHYL ETHER

SDS No. M0103

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Ethylene Glycol Monomethyl Ether

Synonyms: 2-Methoxyethanol; Methyl Cellosolve™; Methoxyhydroxyethane

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, Inhalation: GHS Category 4

Acute Toxicity, Dermal: GHS Category 4

Reproductive Toxicity: GHS Category 1B

#### **Label Elements**

Signal Word: WARNING!

#### Hazard Statements:

H226 – Flammable liquid and vapor

H312 – Harmful in contact with skin.

H332 – Harmful 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.

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

## Emergency Overview

Causes eye irritation. May cause irritation to skin and respiratory tract. Harmful if swallowed, inhaled, or absorbed through the skin. Affects central nervous system, blood, blood forming organs, reproductive system, and kidneys. May cause birth defects based on animal data. Flammable liquid and vapor. May form explosive peroxides in air.

### 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 Monomethyl Ether	109-86-4	>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 attention. Do not use mouth-to-mouth resuscitation.

Ingestion: Do not induce vomiting. 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. Flush skin with water for at least 15 minutes. Get medical attention.

Eye Contact: 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 3)

Auto-ignition Temperature: 285° C (545° F)

Flash Point: 38° C (100° F)

Flammable Limits: Lower Limit – 1.8 vol %, Upper Limit –19.8 vol %

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

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. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Flammable liquid and vapor. May form explosive peroxides. 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: Vapors may form an explosive mixture with air.

Fire Fighting Media: For small fires, use dry chemical, carbon dioxide, water spray, or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Water may be ineffective. *Do not* use straight streams of water.

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. A vapor suppressing foam may be used to

reduce vapors. 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. Use with adequate ventilation. Avoid breathing vapor or mist.

Storage: Store away from ignition sources. Keep in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. 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 – 0.1 ppm TWA, Skin – potential significant contribution to overall exposure by the subcutaneous route.

NIOSH – 0.1 ppm TWA; 0.5 mg/m<sup>3</sup> TWA; 200 ppm IDLH

OSHA PELs – 25 ppm TWA; 80 mg/m<sup>3</sup> TWA

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State and Appearance: Clear, colorless liquid.

Odor: Mild, ethereal odor

Molecular Formula: CH<sub>3</sub>OCH<sub>2</sub>CH<sub>2</sub>OH

Molecular Weight: 76.10

Auto-ignition Temperature: 285° C (545° F)

Flash Point: 38° C (100° F)

Flammable Limits: Lower Limit – 1.8 vol %, Upper Limit –19.8 vol %

pH: Not available

Boiling Point: 124° C (255° F)

Freezing/Melting Point: -85° C (-121° F)

Decomposition Temperature: Not available.

Specific Gravity: 0.960 g/cm<sup>3</sup>

Vapor Density (Air=1): 2.62

Vapor Pressure: 9.5 mm @ 25° C.

Evaporation Rate (Butyl acetate = 1): Not available.

Viscosity: 1.99 cps @ 20° C.

Solubility: Soluble

Conductivity: Conductive; Conductivity = 1.09x10<sup>8</sup> pS/m; Dielectric Constant = 16.93; Relaxation Time Constant = 1.4x10<sup>-6</sup> seconds

## 10. STABILITY AND REACTIVITY

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

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

Incompatibility With Various Substances: Strong oxidizers, alkalis, aluminum, magnesium.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, irritating and toxic fumes and gasses.

Hazardous Polymerization: Will not occur.

## 11. TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, skin absorption, skin contact

Acute Exposure Hazards:

INHALATION HAZARD: Causes respiratory tract irritation. May cause liver and kidney damage. May cause anemia. May cause drowsiness, unconsciousness, and central nervous system depression. Central nervous system effects may include confusion, ataxia (failure of muscular coordination), vertigo, tinnitus, weakness, disorientation, lethargy, drowsiness, and finally coma. Vapors may cause dizziness or suffocation.

INGESTION HAZARD: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May be harmful if swallowed. May cause effects similar to those of acute inhalation. Ingestion of large amounts may cause central nervous system depression.

SKIN CONTACT HAZARD: May be harmful if absorbed through the skin.

EYE CONTACT HAZARD: Causes redness and pain. May cause temporary corneal damage.

Chronic Exposure Hazards: Prolonged or repeated exposure may cause adverse reproductive effects. Chronic exposure may cause effects similar to those of acute exposure.

Animal Toxicity:

Eye Corrosion/irritation, rabbit, mild irritation/24H;

Skin Corrosion/irritation, rabbit: no skin irritation

Inhalation, rat: LC50 = 12.4-17.8 mg/L/4H;

Oral, rat: LD50 = 2370 mg/kg;

Intraperitoneal, rat: LD50 = 2500 mg/kg;

Skin, rabbit: LD50 = 1280 mg/kg;

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

Epidemiology: Experimental reproductive effects have been reported.

Teratogenicity: Adverse effects have been observed in experimental animals.

Reproductive Effects: Adverse effects have been observed in experimental animals.

Mutagenicity: No information available.

Neurotoxicity: No information available.

## 12. ECOLOGICAL INFORMATION

Ecotoxicity:

Fish: Bluegill: LC50 = 10,000 mg/L; 96 Hr.;

Fish: Water flea: LC50 = 10,000 mg/L; 24 Hr.

Environmental Fate: Readily biodegradable (97% - OECD Test Guideline 302). No bioaccumulation is to be expected (Log Pow <= 4).

## 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.

#### 14. TRANSPORT INFORMATION

##### US DOT

Proper Shipping Name: Ethylene Glycol Monomethyl Ether  
Hazard Class: 3  
UN Number: UN1188  
Packing Group: III

##### IMDG

Proper Shipping Name: Ethylene Glycol Monomethyl Ether  
Hazard Class: 3  
UN Number: UN1188  
Packing Group: III

##### IATA

Proper Shipping Name: Ethylene Glycol Monomethyl Ether  
Hazard Class: 3  
UN Number: UN1188  
Packing Group: III

#### 15. REGULATORY INFORMATION

##### US Federal Regulations:

CERCLA Hazardous Substances: CAS# 109-86-4: Not listed  
SARA Section 302: Does not have a TPQ  
SARA Codes: CAS# 109-86-4 – acute, chronic, fire, reactivity  
Section 313: Ethylene glycol monomethyl ether (CAS# 109-86-4) is subject to SARA Title III Section 313 40 CFR 373 reporting requirements.  
Clean Air Act: CAS# 109-86-4 (listed as glycol ethers) is listed as a hazardous air pollutant (HAP).  
OSHA: Not considered highly hazardous by OSHA.

##### US State Regulations:

CAS# 109-86-4 is on the following state right-to-know lists: New Jersey, Pennsylvania, and Massachusetts  
California Prop 65: In accordance with the California Safe Drinking Water Act: This product contains 2-Methoxyethanol, 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: 9/23/2014 – Updated pictograms, hazard categories, and hazard statements in Section 2. Updated incompatible substances in Section 10. Updated toxicity information in Section 11. Updated ecotoxicity information in Section 12.

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