



5515 North Service Rd. #306  
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megaloid.ca



## 1. PRODUCT IDENTIFICATION

**Name:** *Glycol Ether EE*

**Synonyms:** *2-ethoxyethanol; ethylene glycol monoethyl ether; ethylene glycol ethyl ether; EE*

**CAS#** 110-80-5

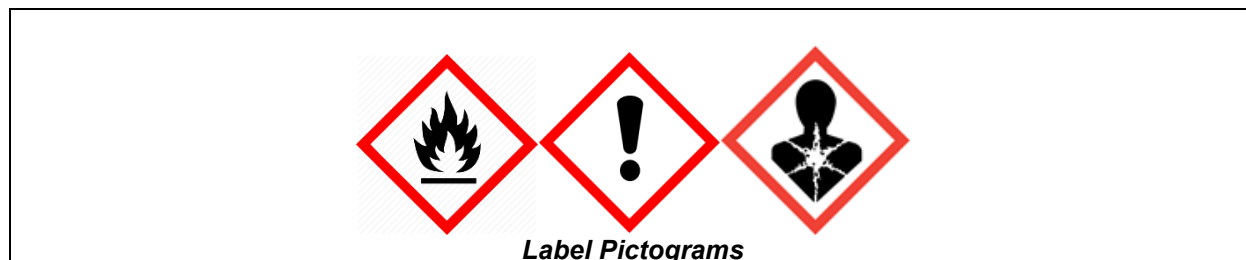
**Product Uses:** *solvent in coatings, inks; leather dyeing; emulsions; anti-freeze in aviation fuel.*

**Supplier Identifier:** *Megaloid Laboratories Limited  
5515 North Service Road, Ste 306  
Burlington, Ontario, Canada  
L7L 6G4  
Phone: 905-337-7411 / Fax: 905-337-1686*

**EMERGENCY INFORMATION** Call CHEMTREC - (800) 424-9300 (CCN# 693764)

## 2. HAZARDS

<b>GHS Class</b> <i>(category)</i>	<b>Flammable</b> <i>(3)</i>	<b>Eye irritant</b> <i>(2B)</i>	<b>Acute oral</b> <i>(4)</i>	<b>Acute inhalation</b> <i>(4)</i>	<b>Reproduction</b> <i>(1B)</i>
<b>Signal Word</b>	<b>DANGER</b>				
<b>Hazard Statements</b>	<i>flammable liquid &amp; vapour (H226)</i>	<i>Causes eye irritation (H320)</i>	<i>Harmful if swallowed (H302)</i>	<i>Harmful if inhaled (H332)</i>	<i>Inhalation or ingestion may damage fertility or the unborn child (H360)</i>



### GHS Precautionary Statements for Labelling

**Prevention**

- P201** Obtain special instructions before use.
- P202** Do not handle until all safety precautions have been read and understood.

<b>P210</b>	Keep away from heat, sparks, open flames and hot surfaces. No smoking.
<b>P233</b>	Keep container tightly closed.
<b>P240</b>	Ground or bond container and receiving equipment.
<b>P241</b>	Use explosion-proof electrical, ventilating and lighting equipment.
<b>P242</b>	Use only non-sparking tools.
<b>P243</b>	Take precautionary measures against static discharge.
<b>P261</b>	Avoid breathing vapours.
<b>P264</b>	Wash hands thoroughly after handling.
<b>P270</b>	Do not eat, drink or smoke when using this product.
<b>P271</b>	Use only outdoors or in a well-ventilated area.
<b>P280</b>	Wear eye protection, protective gloves and clothing of butyl rubber
<b>Response</b>	
<b>P301, P312</b>	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
<b>P303, P361, P353</b>	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
<b>P304, P340</b>	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician.
<b>P308, P313</b>	IF exposed or concerned: Get medical advice/ attention.
<b>P330</b>	Rinse mouth.
<b>P370, P378</b>	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
<b>Storage</b>	
<b>P403 + P233</b>	Store in a well-ventilated place. Keep container tightly closed.
<b>P403 + P235</b>	Store in a well-ventilated place. Keep cool.
<b>P405</b>	Store locked up.
<b>Disposal</b>	
<b>P501</b>	Dispose of contents and container in accordance with local, regional, national and international regulations.

### 3. COMPOSITION

Chemical Name:	CAS No.	%	Other Identifiers
<i>2-Propanol</i>	110-80-5	>99	EC # 203-804-1

### 4. FIRST AID

#### Inhalation

*Remove from contaminated area promptly. CAUTION: Rescuer must not endanger himself! If breathing stops, administer artificial respiration and seek medical aid promptly.*

#### Skin Contact

*Wash with plenty of water. Remove contaminated clothing and do not reuse until thoroughly laundered.*

#### Eye Contact

*Wash eyes with plenty of water, holding eyelids open. Seek medical assistance if there is any irritation.*

### **Ingestion**

*Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.*

#### **First-aid Comments**

*Inadvertent inhalation of vomited material may seriously damage the lungs. The danger of this is greater than the risk of poisoning through absorption of this relatively low-toxicity substance. The stomach should only be emptied under medical supervision, and after the installation of an airway to protect the lungs.*

## **5. FIRE FIGHTING & FLAMMABILITY**

### **Extinguishing Media**

#### **Suitable Extinguishing Media**

*Foam, dry chemical, water fog, water spray only to cool & dilute, product floats on water - water jet spreads flames*

### **Combustion Products**

*Carbon monoxide, nitrogen oxides, smoke, part oxidized hydrocarbon fragments*

### **Static Charge Accumulation**

*Cannot accumulate a static charge on agitation or pumping.*

### **Special Protective Equipment and Precautions for Fire-fighters**

*Firefighters must wear SCBA. Fire-fighters may enter the area if positive pressure SCBA and full Bunker Gear is worn.*

## **6. ACCIDENTAL RELEASE MEASURES**

### **Personal Precautions, Protective Equipment, and Emergency Procedures**

*Restrict access to area until completion of cleanup. Ensure cleanup is conducted by trained personnel only. Do not touch damaged containers or spilled product unless wearing appropriate protective equipment. Ventilate area. Extinguish or remove all ignition sources. Notify government occupational health and safety and environmental authorities. Eliminate all ignition sources if safe to do so.*

### **Environmental Precautions**

*It is good practice to prevent releases into the environment. Do not allow into any sewer, on the ground or into any waterway. If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas.*

### **Methods and Materials for Containment and Cleaning Up**

*Leak Precaution: dyke to control spillage and prevent environmental contamination*

*Handling Spill: Ventilate contaminated area; recover free liquid with suitable pumps; absorb residue on an inert sorbent, sweep & pick up using plastic or aluminium shovel, & store in closed containers for recycling or disposal.*

### **Other Information**

*Report spills to local health, safety and environmental authorities, as required.*

## **7. HANDLING & STORAGE**

## Precautions for Safe Handling

*This product may react with oxygen in the air to form explosive or flammable peroxides (accelerated by ultraviolet radiation and heat). (NOTE: these peroxides are unlikely to be dangerous unless the product is distilled to dryness – **which must never be attempted.**) Ensure that containers are full & tightly sealed. If prolonged storage of a part container is anticipated, flush headspace with dry nitrogen gas prior to sealing to prevent oxidation. Empty containers may contain a flammable/explosive vapour. Ensure that containers, empty or full, are tightly sealed unless in use.*

*Avoid breathing product vapour. Use with adequate ventilation. If dealing with a spill, and ventilation is impossible or impractical, wear a suitable respirator with organic vapour cartridge.*

*Never cut, drill, weld or grind on or near this container. Avoid contact with skin and wash work clothes frequently. An eye bath and safety shower must be available near the workplace.*

## Conditions for Safe Storage

*Store & use in a cool, dry environment, away from sources of ignition & oxidising agents.*

## 8. EXPOSURE CONTROL & PERSONAL PROTECTION

**Ontario TWAEV** 5ppm / 18mg/m<sup>3</sup> – (skin)  
**AGGIH TLV** 5ppm / 18mg/m<sup>3</sup> – (skin)  
**OSHA PEL** 200ppm / 740mg/m<sup>3</sup> – (skin)

**Ontario STEV** not listed  
**ACGIH STEL** not listed  
**OSHA STEL** not listed

<b>Ventilation</b>	<i>mechanical ventilation may be required to control airborne titre to regulated limits; if product is heated in sealed equipment, respirators with organic vapour cartridge should be available for “escape” should ventilation or containment fail; store respirators in airtight containers (“Tupperware” or “Zip-Lock”)</i>
<b>Hands</b>	<i>wear butyl rubber gloves – other types also protect; confirm suitability with supplier</i>
<b>Eyes</b>	<i>Safety glasses with side shields – always protect the eyes</i>
<b>Clothing</b>	<i>wear impermeable (above) apron, boots, &amp; long sleeves if there is any danger of splashing.</i>

## Appropriate Engineering Controls

*Ventilation: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.*

## 9. PHYSICAL PROPERTIES

<b>Appearance</b>	<i>Clear colourless liquid.</i>
<b>Odour</b>	<i>pleasant ether odour</i>
<b>Odour threshold</b>	<i>below 0.5ppm</i>
<b>pH</b>	<i>none – (does not liberate hydrogen ions when dissolved)</i>
<b>Melting Point/Freezing Point</b>	<i>-70°C / -94°F</i>
<b>Initial Boiling Point/Range</b>	<i>135°C / 275°F</i>
<b>Flash Point</b>	<i>43°C / 110°F (closed cup)</i>

<b>Evaporation Rate</b>	0.4 (Butyl Acetate =1)
<b>Flammability ( Solid, Gas)</b>	Not Available
<b>Upper/Lower Flammability or Explosive Limit</b>	1.7% – 15.6%
<b>Vapour Pressure</b>	0.51mHg / 3.8kPa (20°C / 68°F)
<b>Vapour Density (air = 1)</b>	3.1
<b>Specific Gravity</b>	0.93 (20/20°C)
<b>Water Solubility</b>	Complete, also soluble in most organic solvents
<b>Partition Coefficient, n-Octanol/Water (Log Kow)</b>	-0.54
<b>Auto-ignition Temperature</b>	235°C / 455°F
<b>Conversion Factor</b>	1ppm = 3.68mg/m <sup>3</sup>
<b>Viscosity</b>	2.1 centipoise (20°C / 68°F)
<b>Physical State</b>	Liquid
<b>Molecular Weight</b>	90 grams per mole
<b>Molecular Formula</b>	C4-H10-O2

## 10. REACTIVITY

**Dangerously Reactive** with strong oxidising agents, strong alkalies, strong acids.  
**Also Reactive** with softens polyvinylchloride (PVC), ABS, polyesters & certain other plastics & elastomers.

### Chemical Stability

stable; forms explosive peroxides on prolonged contact with air (faster in ultraviolet light); will not polymerize.

### Possibility of Hazardous Reactions

Avoid contact with: Strong acids. Strong bases. Strong oxidizers..

### Conditions to Avoid

Do not distill to dryness. Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

### Mechanical Impact

not sensitive

## 11. TOXICITY

Acute Toxicity	
<b>LD<sub>50</sub> (oral)</b>	1400, 1745 to 3525, 4460, 5000-5490 & 8100mg/kg (rat), 1520, 2450, 4000 & 4830mg/kg (mouse), 950, 1400 & 2140mg/kg (guinea pig), 1275, 1485, 3100 & 3530mg/kg (rabbit)

<b>LD50 (skin)</b>	3270, 3310, 3525 & 3900mg/kg (rabbit), 3900mg/kg (rat)
<b>LC50 (inhalation)</b>	2000 to 4500, 4890-5700 & 5350ppm (rat), 1820, 2410ppm (mouse), 3000ppm (guinea pig)
<b>NOTE:</b>	<i>The very large number of toxicity tests reported reflects the high level of concern around this substance.</i>

**Skin Corrosion/Irritation**

*not irritating.*

**Serious Eye Damage/Irritation**

*moderately irritating.*

**STOT (Specific Target Organ Toxicity) - Single Exposure**

**Inhalation**

*headache, nasal discharge, coughing, chest pain, nausea, dizziness, vomiting.*

**Skin Absorption**

*yes; toxic effects may occur by this route – both from the liquid & the vapour.*

**Ingestion**

*effects similar to “inhalation”, metabolic acidosis, persistent fatigue & insomnia & paresthesia of extremities – not a route of industrial exposure.*

**STOT (Specific Target Organ Toxicity) - Repeated Exposure**

*Prolonged exposure may cause dermatitis & skin cracking; accidental ingestion of 40ml caused central nervous effects & delayed acidosis, followed by reversible renal insufficiency & liver damage.*

**Respiratory and/or Skin Sensitization**

*Not known to be a respiratory sensitizer.*

**Carcinogenicity**

*Experimental carcinogen of unknown relevance to humans; not classified as carcinogen in humans by IARC, ACGIH, NTP or OSHA.*

**Reproductive Toxicity**

**Sexual Function and Fertility**

*fetotoxic at doses causing no maternal effects, ingestion causes reduced fertility (various causes) in male rats; teratogenic in rats at 175ppm & at 1800mg/kg (oral rabbit), no known effect in humans*

*NOAEL is 300ppm for parental toxicity; any reproductive effects (@1000ppm) seem to follow from this.*

**Germ Cell Mutagenicity**

*Not known to be a mutagen.*

**12. ECOLOGICAL INFORMATION**

<b>Bioaccumulation</b>	<i>rapidly eliminated from the body (biological ½-life ~8hrs); cannot bioaccumulate.</i>
<b>Persistence and Degradability</b>	<p><b>Biodegradation -</b> <i>biodegrades readily; 100% in 14days, 65% in 5days, &gt;50% in 1day, &gt;60% in 20days, 85% in 21days &amp; others</i></p> <p><b>Abiotic Degradation -</b> <i>reacts with atmospheric hydroxyl radicals; 5% gone in 12hr, estimated ½-life in air ~1 day (2 studies)</i></p>
<b>Mobility in soil, water</b>	<i>water soluble; moves readily in soil &amp; water.</i>

<b>Aquatic Toxicity</b>	
<b>LC50 (Fish, 96hr)</b>	9640, 10,400 & 11,130mg/litre ( <i>Pimephelas promelas</i> ), 4200mg/litre ( <i>Rasbora heteromorpha</i> ) 8970mg/litre ( <i>Leuciscus idus</i> – 48hr)
<b>EC50 (Crustacea, 48hr)</b>	>10,000mg/litre ( <i>Daphnia magna</i> ), >100mg/litre ( <i>Gammarus fasciatus</i> & <i>Helisoma trivolvis</i> , 96hr), >10,000mg/litre ( <i>Artemia salina</i> , 24hr), 19,530mg/litre ( <i>Ceriodaphnia dubia</i> )
<b>EC50 (Algae, 72hrs)</b>	>1000mg/litre ( <i>Scenedesmus subspicatus</i> )
<b>EC50 (Bacteria)</b>	>5000mg/litre (“aerobic microorganisms”), >10,000mg/litre (“other bacteria”)
<b>EC10 (Bacteria)</b>	1725mg/litre ( <i>Pseudomonas putida</i> )

### 13. DISPOSAL

#### Water Disposal

Do not flush to sewer, recycle solvent if possible, may be incinerated in approved facility

#### Containers

**Drums** should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use.


**Pails** must be vented and thoroughly dried prior to crushing and recycling.

**IBCs** (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5yrs).

**Steel containers** must be inspected, pressure tested & recertified every 5 years.

***Never cut, drill, weld or grind on or near this container, even if empty***

### 14. TRANSPORT CLASSIFICATION

<b>Canada TDG</b>	<b>PIN</b>	UN1171	
<b>AND</b>	<b>Shipping Name</b>	Ethylene Glycol Monoethyl Ether	
<b>U.S.A. 49 CFR</b>	<b>Class &amp; Packing Group</b>	3, PG III	
<b>Marine Pollutant</b>	Not a Marine Pollutant		
<b>ERAP Required</b>	NO		
<b>Reportable Quantity</b>	454kg (1000lbs)		
<b>E R G No.</b>	127		

***Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.***

### 15. REGULATIONS

<b>Canada DSL</b>	On Inventory
<b>U.S.A. TSCA</b>	On Inventory

THIS INFORMATION IS PRESENTED FOR YOUR CONSIDERATION IN THE BELIEF THAT IT IS ACCURATE AND RELIABLE: HOWEVER, NO WARRANTY EITHER EXPRESSED OR IMPLIED IS MADE AND NO FREEDOM FROM LIABILITY FROM PATENTS, TRADEMARKS, OR OTHER LIMITATIONS SHOULD BE INFERRED

## Canadian Regulations

### CEPA - National Pollutant Release Inventory (NPRI)

Part 1A.

## U.S.A. Regulations

**Threshold Limit Values:** 8 hr Time Weighted Avg (TWA): 5 ppm, skin. Excursion Limit Recommendation: Excursions in worker exposure levels may exceed 3 times the TLV-TWA for no more than a total of 30 minutes during a work day, and under no circumstances should they exceed 5 times the TLV-TWA, provided that the TLV-TWA is not exceeded. Biological Exposure Index (BEI): Determinant: 2-ethoxyacetic acid in urine; Sampling Time: end of shift at end of workweek; BEI: 100 mg/g creatinine.

**Atmospheric Standards:** This action promulgates standards of performance for equipment leaks of Volatile Organic Compounds (VOC) in the Synthetic Organic Chemical Manufacturing Industry (SOCMI). The intended effect of these standards is to require all newly constructed, modified, and reconstructed SOCMI process units to use the best demonstrated system of continuous emission reduction for equipment leaks of VOC, considering costs, non air quality health and environmental impact and energy requirements. Ethylene glycol monoethyl ether is produced, as an intermediate or a final product, by process units covered under this subpart.

**State Drinking Water Guidelines:** Florida 25,000 ug/L

**CERCLA Reportable Quantities:** Persons in charge of vessels or facilities are required to notify the National Response Center (NRC) immediately, when there is a release of this designated hazardous substance, in an amount equal to or greater than its reportable quantity of 1000 lb or 454 kg. The toll free number of the NRC is (800) 424-8802. The rule for determining when notification is required is stated in 40 CFR 302.4 (section IV. D.3.b).

**RCRA Requirements:** As stipulated in 40 CFR 261.33, when ethylene glycol monoethyl ether, as a commercial chemical product or manufacturing chemical intermediate or an off-specification commercial chemical product or a manufacturing chemical intermediate, becomes a waste, it must be managed according to Federal and/or State hazardous waste regulations. Also defined as a hazardous waste is any residue, contaminated soil, water, or other debris resulting from the cleanup of a spill, into water or on dry land, of this waste. Generators of small quantities of this waste may qualify for partial exclusion from hazardous waste regulations (40 CFR 261.5). When 2-ethoxyethanol is a spent non-halogenated solvent, it is classified as a hazardous waste from a nonspecific source, as stated in 40 CFR 261.31, and must be managed according to State and/or Federal hazardous waste regulations.

**FDA Requirements:** The following substance may be safely used as diluents in color additive mixtures for food use exempt from certification, subject to the condition that each straight color in the mixture has been exempted from certification or, if not so exempted, is from a batch that has previously been certified and has not changed in composition since certification. If a specification for a particular diluent is not set forth in this part 73, the material shall be of a purity consistent with its intended use. Ethylene glycol monoether ether is used as a diluent in color additive mixtures for marking food-(i) Inks for marking food supplements in tablet form, gum, and confectionery. Restriction: No residue. Ethylene glycol monoethyl ether is an indirect food additive for use only as a component of adhesives.

### Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312 -

Immediate (Acute) Health Hazard - No

Delayed (Chronic) Health Hazard - Yes

Fire Hazard - Yes

Reactive Hazard - No

Sudden Release of Pressure Hazard - No

### Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313



This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

<b>Component</b>	<b>CAS #</b>	<b>Amount</b>
Ethylene glycol monoethyl ether	110-80-5	>= 99.0 - <= 100.0 %

## US State Regulations

### Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

<b>Component</b>	<b>CAS #</b>	<b>Amount</b>
Ethylene glycol monoethyl ether	110-80-5	>= 99.0 - <= 100.0 %

### California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

**Warning:** This product contains a chemical(s) known to the State of California to cause cancer.

<b>Component</b>	<b>CAS #</b>	<b>Amount</b>
Ethanol	64-17-5	1.0 PPM

**Warning:** This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm.

<b>Component</b>	<b>CAS #</b>	<b>Amount</b>
Ethylene glycol monoethyl ether	110-80-5	>= 99.0 - <=100.0 %
Ethanol	64-17-5	1.0 PPM

## 16. OTHER INFORMATION

<b>NFPA RATING</b>	<b>Health 1</b>	<b>Flammability 2</b>	<b>Instability 0</b>
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Prepared for Megaloid Laboratories Limited by Richard Koscher  
 Preparation Date: December 2003  
 Revision Dates: Dec 2006, Nov 2009, Nov 2012, Oct 2015, Aug 2018, Feb 2019

<b>Key to Abbreviations</b>	ACGIH® = American Conference of Governmental Industrial Hygienists AIHA® = AIHA® Guideline Foundation HSDB® = Hazardous Substances Data Bank IARC = International Agency for Research on Cancer NFPA = National Fire Protection Association NIOSH = National Institute for Occupational Safety and Health NTP = National Toxicology Program OSHA = US Occupational Safety and Health Administration RTECS® = Registry of Toxic Effects of Chemical Substances
<b>References</b>	CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). HSDB® database. US National Library of Medicine. Available from Canadian Centre for Occupational Health and Safety (CCOHS). NIOSH Pocket Guide database. National Institute for Occupational Safety and Health. Available from Canadian Centre for Occupational Health and Safety (CCOHS). Registry of Toxic Effects of Chemical Substances (RTECS®) database. Dassault Systèmes/BIOVIA ("BIOVIA"). Available from Canadian Centre for Occupational Health and Safety (CCOHS).
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