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Our commitment to sustainability.



**Responsible Distribution Canada**  
Leaders in Chemicals and Ingredients

## 1. PRODUCT IDENTIFICATION

**Name:** *Glycol Ether DE*

**Synonyms:** *2-(2-ethoxyethoxy) ethanol; diethylene glycol monoethyl ether, DE, Dowanol DE, Ethyl Carbitol, etc*

**CAS#** 111-90-0

**Product Uses:** *solvent in coatings, brake fluids, baking enamels, etc*

**Supplier** *Megaloid Laboratories Limited*  
**Identifier:** *5515 North Service Road, Suite 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>(4)</i>	<b>Eye irritant</b> <i>(2B)</i>	<b>NOTE:</b> <i>This (low) level of hazard warrants no Pictograms under WHMIS 2015 &amp; OSHA HazCom2012.</i>
<b>Signal Word</b>	<b>WARNING</b>		
<b>Hazard Statements</b>	<i>Combustible liquid (H227)</i>	<i>Causes eye irritation (H320)</i>	
			<b>Label Pictograms</b>

### GHS Precautionary Statements for Labelling

<b>Prevention</b>	
<b>P210</b>	Keep away from heat, sparks, open flames and hot surfaces. No smoking.
<b>P264</b>	Wash hands thoroughly after handling.
<b>P280</b>	Wear eye protection, protective gloves and clothing of butyl rubber
<b>Response</b>	
<b>P370, P378</b>	IN CASE OF FIRE: use alcohol-resistant foam to extinguish.
<b>P305, P351, P338</b>	IF IN EYES: rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
<b>Storage</b>	
<b>P403 + P233</b>	Store in a well-ventilated place. Keep container tightly closed.
<b>Disposal</b>	

**P501** Dispose of contents and container in accordance with local, regional, national and international regulations.

### 3. COMPOSITION

Chemical Name:	CAS No.	%	Other Identifiers
<i>Diethylene glycol monoethyl ether</i>	111-90-0	100	EC # 203-919-7

### 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*

#### 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.*

#### Further information

*Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments.*

### 6. ACCIDENTAL RELEASE MEASURES

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

Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment. Ensure adequate ventilation. Eliminate all sources of ignition.

### Environmental Precautions

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

Empty containers may contain a flammable / explosive vapour. Always ensure that containers, whether empty or full, or part full, are tightly sealed unless in use.

If product is heated during handling or processing, or if a mist is created, install ventilation adequate to completely clear the workplace air, and avoid breathing product vapour. Never cut, drill, weld or grind on or near this container. Avoid prolonged contact with skin and wash work clothes frequently. An eye bath and safety shower should be available near the workplace.

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

### Conditions for Safe Storage

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

## 8. EXPOSURE CONTROL & PERSONAL PROTECTION

**Ontario TWAEV** 30ppm / 165mg/m<sup>3</sup>  
**ACGIH TLV** not listed  
**OSHA PEL** not listed<sup>3</sup>

**Ontario STEV** not listed  
**ACGIH STEL** 25ppm / 137mg/m<sup>3</sup>  
**OSHA STEL** not listed

<b>Ventilation</b>	<i>mechanical ventilation is probably not required unless high temperature processing is involved</i>
<b>Hands</b>	<i>no special protective gloves required; "Tychem SL" gloves offer 8-hour resistance No special protective clothing required.</i>
<b>Eyes</b>	<i>Safety glasses with side shields – always protect the eyes</i>
<b>Clothing</b>	<i>No special protective clothing required</i>

### Appropriate Engineering Controls

Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

## 9. PHYSICAL PROPERTIES

<b>Appearance</b>	<i>Clear, colourless, hygroscopic liquid.</i>
<b>Odour</b>	<i>slight, pleasant fruity ether odour</i>
<b>Odour threshold</b>	<i>0.2ppm</i>
<b>pH</b>	<i>none – (does not liberate hydrogen ions when dissolved)</i>
<b>Melting Point/Freezing Point</b>	<i>-76°C / -105°F</i>
<b>Initial Boiling Point/Range</b>	<i>202°C / 296°F</i>
<b>Flash Point</b>	<i>91°C / 196°F (closed cup); 96°C / 205°F (open cup) – <b>borderline for “combustible”</b></i>
<b>Evaporation Rate</b>	<i>0.013 – very slow (Butyl Acetate =1)</i>
<b>Flammability ( Solid, Gas)</b>	<i>Not Available</i>
<b>Upper/Lower Flammability or Explosive Limit</b>	<i>1.2% – 24% – the flammable range is unusually broad</i>
<b>Vapour Pressure</b>	<i>0.14mmHg / 0.019kPa (25°C / 77°F)</i>
<b>Vapour Density (air = 1)</b>	<i>4.6</i>
<b>Specific Gravity</b>	<i>0.990 (20/20°C)</i>
<b>Water Solubility</b>	<i>Complete. Also soluble in most organic solvents</i>
<b>Partition Coefficient, n-Octanol/Water (Log Kow)</b>	<i>-0.54; -0.93; -1.14 – three values given</i>
<b>Auto-ignition Temperature</b>	<i>204°C / 400°F</i>
<b>Conversion Factor</b>	<i>1 ppm = 5.48 mg/m<sup>3</sup></i>
<b>Viscosity</b>	<i>0.39centipoise (25°C / 77°F)</i>
<b>Physical State</b>	<i>Liquid</i>
<b>Molecular Weight</b>	<i>134 grams per mole</i>
<b>Molecular Formula</b>	<i>C6-H14-O3</i>

## 10. REACTIVITY

**Dangerously Reactive** *with strong oxidising agents.*  
**Also Reactive** *with strong mineral acids*

### **Chemical Stability**

*Stable; will not polymerize*

### **Possibility of Hazardous Reactions**

None known.

### Conditions to Avoid

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

### Hazardous decomposition products:

Decomposition products can include and are not limited to: Aldehydes. Ketones. Organic acids.

### Mechanical Impact

Not sensitive

## 11. TOXICITY

Acute Toxicity	
<b>LD<sub>50</sub> (oral)</b>	1920, 3950-9740mg/kg (rat), 6030, 6530, 7860 & 12,400mg/kg (mouse), 3000-4970mg/kg (guinea pig), 3620 & 4450mg/kg (rabbit)
<b>LD<sub>50</sub> (skin)</b>	4160, 8500, 9140 & 10,300mg/kg (rabbit), 31,700mg/kg (guinea pig), 5940mg/kg (mouse & rat)
<b>LC<sub>50</sub> (inhalation)</b>	956ppm (rat – two studies using “saturated” vapour) – no mortality

### Skin Corrosion/Irritation

Little to no effect – not irritating or slightly irritating in 7 of 7 reports

### Serious Eye Damage/Irritation

May irritate – of 14 reports, 12 state mild to no irritancy, 2 reports state moderately irritating

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

#### Inhalation

Low vapour pressure – vapour from heated liquid or mist may irritate, and could also cause the nervous system effects described below for ingestion

#### Skin Absorption

Yes; no toxic effects likely by this route – toxic effects require extensive & prolonged exposure

#### Ingestion

Ingestion of over 100ml may cause headache, dizziness, drowsiness, respiratory depression, and metabolic acidosis – not a route of industrial exposure

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

No chronic effect reported or expected

#### Respiratory and/or Skin Sensitization

Not known to be a respiratory sensitizer.

#### Carcinogenicity

Not considered a tumorigen or a carcinogen in humans or animals. IARC: Not specifically listed. ACGIH®: Not specifically designated. NTP: Not specifically listed. OSHA: Not specifically listed.

### Reproductive Toxicity

#### Sexual Function and Fertility

No known effect in humans or animals

#### Germ Cell Mutagenicity

Not known to be a mutagen.

## 12. ECOLOGICAL INFORMATION

<b>Bioaccumulation Persistence and Degradability</b>	<i>high water solubility – not a bioaccumulator</i> <b>Biodegradation -</b> <i>biodegrades rapidly in the presence of oxygen; 11% &amp; 34% in 5 days; 79% in 12 days, 87% in 20 days, 90% in 28 days</i>  <b>Abiotic Degradation -</b> <i>reacts with atmospheric hydroxyl radicals; estimated ½-life in air is 7 hours</i>
<b>Mobility in soil, water</b>	<i>water soluble; moves readily &amp; rapidly in soil and water</i>
<b>Aquatic Toxicity</b>	
<b>LC50 (Fish, 96hr)</b>	<i>13,400mg/litre (Oncorhynchus mykiss) 1 2140mg/litre (Lepomis macrochirus), 20,800mg/litre (Carassius auratus), 12,900-15,200mg/litre (Gambusia affinis), 6010mg/litre (Ictalurus punctatus), &gt;10,000mg/litre (Pimephales promelas)</i>
<b>EC50 (Crustacea, 48hr)</b>	<i>1980mg/litre (Daphnia magna), 3940-4620mg/litre (Daphnia magna), 18,800mg/litre (Tanytarsus dissimilis)</i>
<b>EC50 (Algae)</b>	<i>no data</i>
<b>EC50 (Bacteria, 16hr)</b>	<i>&gt;5000mg/litre (sewage sludge)</i>
<b>EC10 (Bacteria, 16hr)</b>	<i>4000mg/litre (Pseudomonas putida) – note this is an EC10, not an EC50 – very slight toxic effect</i>

### 13. DISPOSAL

#### Water Disposal

**Do not flush to sewer**, recycle if possible; biodegradation, after dilution, in a suitable treatment facility is the preferred option; 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>	Not regulated for transport	<b>U.S. only</b>
<b>U.S.A. 49 CFR</b>	<b>PIN</b>	NA1993	
	<b>Shipping Name</b>	Combustible Liquid, n.o.s. (diethylene glycol monoethyl ether)	
	<b>Class &amp; Packing Group</b>	Combustible, PG III	
<b>Marine Pollutant ERAP Required</b>	Not a Marine Pollutant NO		

<b>Reportable Quantity</b> <b>E R G No.</b>	NO 128	
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**NOTE: The Flash Point of Glycol Ether DE is close to the 93°C cut-off for Class 3 Combustible (Part 5). Sometimes shipped not regulated in USA.**

## 15. REGULATIONS

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

### Canadian Regulations

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

Not specifically listed.

### U.S.A. Regulations

**Allowable Tolerances:** Residues of the following chemical substances are exempted from the requirement of a tolerance when used in accordance with good manufacturing practice as ingredients in an antimicrobial pesticide formulation, provided that the substance is applied on a semi-permanent or permanent food-contact surface (other than being applied on food packaging) with adequate draining before contact with food. ... (c) The following chemical substances when used as ingredients in an antimicrobial pesticide formulation may be applied to: Food-processing equipment and utensils. Ethanol, 2-(2-ethoxyethoxy)- is included on this list. Residues of diethylene glycol monoethyl ether are exempted from the requirement of a tolerance when used as a deactivator for formulations used before crop emerges from soil, stabilizer in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops only.

**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. Diethylene glycol monoethyl ether is produced, as an intermediate or final product, by process units covered under this subpart.

**TSCA Requirements:** Pursuant to section 8(d) of TSCA, EPA promulgated a model Health and Safety Data Reporting Rule. The section 8(d) model rule requires manufacturers, importers, and processors of listed chemical substances and mixtures to submit to EPA copies and lists of unpublished health and safety studies. Diethylene glycol monoethyl ether is included on this list.

**FIFRA Requirements:** Residues of the following chemical substances are exempted from the requirement of a tolerance when used in accordance with good manufacturing practice as ingredients in an antimicrobial pesticide formulation, provided that the substance is applied on a semi-permanent or permanent food-contact surface (other than being applied on food packaging) with adequate draining before contact with food. ... (c) The following chemical substances when used as ingredients in an antimicrobial pesticide formulation may be applied to: Food-processing equipment and utensils. Ethanol, 2-(2-ethoxyethoxy)- is included on this list. Residues of diethylene glycol monoethyl ether are exempted from the requirement of a tolerance when used as a deactivator for formulations used before crop emerges from soil, stabilizer in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops only.

**FDA Requirements:** Diethylene glycol monoethyl ether is an indirect food additive for use only as a component of adhesives.

<b>SARA 302/304:</b>	<b>Component</b>	<b>RQ</b>
	2-Ethoxyethanol	1000 lbs
	Ethylene glycol	5000 lbs

**SARA 311/312:** Physical Hazards, Flammable liquids, Health Hazards, Specific target organ systemic toxicity - single exposure

**SARA 313:** This product contains the following chemicals subject to the reporting requirements of SARA Title III, Section 313 and 40 CFR 372:

Component	Reporting Threshold
2-Ethoxyethanol	1.0%
Ethylene glycol	1.0%

## U.S. State Regulations

**Pennsylvania Worker and Community Right-To-Know Act:** To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

**California Prop. 65:** WARNING: This product can expose you to chemicals including Ethylene glycol, Ethylene glycol monoethyl ether, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Global Inventory Status

Country/Region	Inventory	Status Description
Australia	AICS	Compliant
China	IECSC	Compliant
Japan	ENCS	Compliant
Korea	KECI	Compliant
New Zealand	NZIoC	Compliant
Philippines	PICCS	Compliant
Taiwan	TCSCA	Compliant

## 16. OTHER INFORMATION

<b>NFPA RATING</b>	<b>Health 2</b>	<b>Flammability 2</b>	<b>Instability 0</b>
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Prepared for Megaloid Laboratories Limited by Richard Koscher  
 Preparation Date: December 2006  
 Revision Dates: November 2009, Nov 2012, May 2015, March 2018, Jan 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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