



## Safety Data Sheet

### 1. PRODUCT IDENTIFICATION

Name	<b>Glycol Ether DM</b>
Synonyms	2-(2-methoxyethoxy)ethanol; diethylene glycol (mono)methyl ether, diglycol (mono)methyl ether, & others
CAS#	111-77-3
Europe EC#	203-906-6
Product Uses	solvent in coatings; jet fuel additive, coupling agent for organic/aqueous solutions, fragrances, inks, coalescing agent in paints, etc

### 2. HAZARDS

**Quick Guide:** combustible liquid; absorbed via skin, suspect fetal toxin

#### Canada – WHMIS

Key:

#### B 3, D 2A

**B 2** – Flash Point <38°C, **B 3** – Flash Point >38°C & <93°C

**D 1** – Immediately Toxic, **D 2** – Chronic Toxicity

**C** – Oxidising Substance, **E** – Corrosive, **F** – Reactive Substance

#### U.S.A. – HMIS

Key:

#### Health – 3, Fire – 1, Reactivity – 0

0=minimal, 1=slight, 2=moderate, 3=serious, 4=severe

### 3. COMPOSITION

	%	TWAEV / TLV mg/m <sup>3</sup>	LD <sub>50</sub> (mg/kg) ORAL	LD <sub>50</sub> (mg/kg) SKIN	LC <sub>50</sub> ppm INHALATION
Diethylene Glycol Monomethyl Ether	100%	not listed	4140	2590	>50,000

### 4. FIRST AID

SKIN:	Wash with plenty of water. Remove contaminated clothing and do not reuse until thoroughly laundered.
EYES:	Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if there is irritation.
INHALATION:	Remove from contaminated area promptly. <b>CAUTION: Rescuer must not endanger himself!</b> If breathing stops, administer artificial respiration and seek medical aid promptly.
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.

*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

Flash Point	83-90°C / 181-194°F (closed cup) – various test results available
Autoignition Temperature	215-240°C / 419-465°F
Flammable Limits	1.4% – 10% – various flammable limits are listed
Combustion Products	carbon monoxide, nitrogen oxides, smoke, part oxidised hydrocarbon fragments
Fire Fighting Precautions	foam, dry chemical, water fog or spray; firefighters must wear SCBA
Static Charge Accumulation	cannot accumulate a static charge on agitation or pumping

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**6. ACCIDENTAL RELEASE MEASURES**

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,  
                                  shovel & store in closed containers for recycling or disposal

**7. HANDLING & STORAGE**

Store in a dry environment, away from sources of ignition, heat, oxidising agents, and other named (Part 10) substances. If prolonged storage of a part container is anticipated, flushing headspace with dry nitrogen gas prior to sealing is recommended. 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.

Avoid breathing product vapour or mist. Use with adequate ventilation. If dealing with a spill, and ventilation is impossible or impractical, wear a respirator with an 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.

**8. EXPOSURE CONTROL & PERSONAL PROTECTION**

Ontario TWAEV	not listed
ACGIH TLV	not listed
OSHA PEL	not listed
Ventilation	no special mechanical ventilation required
Hands	butyl or "Viton" gloves are resistant – <i>other types may also protect; consult supplier to confirm suitability</i>
Eyes	safety glasses with side shields – <i>always protect the eyes</i>
Clothing	no special protective clothing required

**9. PHYSICAL PROPERTIES**

Odour & Appearance	clear, colourless, hygroscopic liquid with mild, pleasant odour
Odour Threshold	not known
Vapour Pressure	0.18mmHg / 0.024kPa (20°C / 68°F)
Evaporation Rate ( <i>Butyl Acetate = 1</i> )	0.02 – <i>not considered volatile</i>
Vapour Density (air = 1)	4.1
Boiling Point	194°C / 381°F
Freezing Point	below -70°C / -94°F
Specific Gravity	1.035 (20/20°C)
Water Solubility	complete
Also soluble in	most organic solvents
Viscosity	3.5centipoise (25°C / 77°F)
pH	none – ( <i>does not liberate hydrogen ions when dissolved</i> )
Conversion Factor	1ppm = 4.9g/m <sup>3</sup>
Molecular Weight	120grams per mole

**10. REACTIVITY**

Dangerously Reactive With	strong oxidising agents; contact with calcium hypochlorite may cause ignition
Also Reactive With	oleum or chlorosulphonic acid; corrosive to aluminium, zinc and galvanised metals
Stability	stable; will not polymerize
Decomposes in Presence of	not known
Decomposition Products	none apart from Hazardous Combustion Products
Sensitive to Mechanical Impact	no

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## 11. TOXICITY

### Effects, Acute Exposure

Skin Contact	little to no effect
Skin Absorption	probably, but no acute toxic effects likely by this route
Eye Contact	may be slightly irritating
Inhalation mists	vapour saturated air had virtually no effect on experimental animals; high concentration may cause intoxication, nausea, and central nervous depression
Ingestion	little effect at 2000mg/kg (oral); above this level symptoms similar to inhalation

### Effects, Chronic Exposure

General	no known effect
Sensitising	not a sensitiser in humans or animals
Carcinogen/Tumorigen	not considered a tumorigen or a carcinogen in humans or animals
Reproductive Effect	rodent teratogen and fetotoxin at 250mg/kg/day with no evidence of maternal symptoms; testicular atrophy seen in male rats on oral or dermal absorption; no known effect in humans
Mutagen	no known effect on humans or animals
Synergistic With	not known
LD <sub>50</sub> (oral)	4140mg/kg (rat & guinea pig), 7190mg/kg (rabbit), 8220mg/kg (mouse)
LD <sub>50</sub> (skin)	2590mg/kg (rabbit)
LC <sub>50</sub> (inhalation)	above 50,000ppm (rat)

## 12. ECOLOGICAL INFORMATION

Bioaccumulation	eliminated and metabolised readily; cannot bioaccumulate
Biodegradation	biodegrades readily & rapidly in the presence of oxygen; 96% in 6d & 97% in 14d ( <i>industrial sludge</i> )
Abiotic Degradation	reacts with atmospheric hydroxyl radicals; estimated ½-life in air is 5.3hrs & 16hrs
Mobility in soil, water	water soluble; moves rapidly in soil and water
<b>Aquatic Toxicity</b>	
LC <sub>50</sub> (Fish, 96hr)	7500mg/litre (Lepomis macrochirus), 1000mg/litre (Salmo gairdneri), 5740mg/litre (Pimephales promelas)
EC <sub>50</sub> (Crustacea, 48hr)	1192mg/litre (Daphnia magna)
EC <sub>50</sub> (Algae, 72hr)	>500mg/litre (Scenedesmus subspicatus)
EC <sub>50</sub> (Bacteria, 17hr)	>10,000mg/litre (Pseudomonas putida),

## 13. DISPOSAL

Waste Disposal	<b>do not flush to sewer</b> , recycle solvent if possible, may be incinerated in approved facility with flue gas monitoring and scrubbing
Containers	<b>Drums</b> should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use. <b>Pails</b> must be vented and thoroughly dried prior to crushing and recycling. <b>IBCs</b> (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. <i>Never cut, drill, weld or grind on or near this container, even if empty</i>

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## **14. TRANSPORT CLASSIFICATION**

<b>Canada TDG</b>	<b>PIN</b>	<b>UN - not regulated for transport</b>
<b>AND</b>	<b>Shipping Name</b>	<b>not regulated for transport</b>
<b>U.S.A. 49 CFR</b>	<b>Class &amp; Packing Group</b>	<b>not regulated for transport</b>
<b>Marine Pollutant</b>		<b>not a marine pollutant</b>
<b>ERAP Required</b>		<b>NO</b>

### ***EMERGENCY INFORMATION***

<b>Canada</b>	<b>Call CANUTEC (collect)</b>	<b>(613) 996-6666</b>
<b>U.S.A.</b>	<b>Call CHEMTREC</b>	<b>(800) 424-9300</b>

## **15. REGULATIONS**

<b>Canada DSL</b>	<b>on inventory</b>
<b>U.S.A. TSCA</b>	<b>on inventory</b>
<b>Europe EINECS</b>	<b>on inventory</b>

**Allowable Tolerances:** Diethylene glycol monomethyl ether is 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.

**NIOSH Recommendations:** NIOSH recommends reducing exposure to lowest feasible concn & preventing contact with the skin. /Glycol ethers/

**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 monomethyl 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 monomethyl ether is included on this list.

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

## **16. OTHER INFORMATION**

*Prepared for Megaloid Laboratories by Peter Bursztyn, (705) 734-1577*

*Data from RTECS, HSDB (Haz. Substance Data Base), Cheminfo (CCOHS), IUCLID Datasheets (ESIS – European Chem. Substance Info. System), & others.*

*Preparation Date: June 2003      Revision Date: June 2006, June 2009, June 2012*

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