



Safety Data Sheet

1. PRODUCT IDENTIFICATION

Name	Glycol Ether PM
Synonyms	1-methoxy-2-propanol; 1-methoxy-2-hydroxypropane, propylene glycol monomethyl ether, PM, PGME
CAS#	107-98-2
Europe EC#	203-539-1
Product Uses	solvent in coatings, cleaners, lubricants

2. HAZARDS

Quick Guide: flammable liquid, heavy vapour may travel, distant ignition and flashback are possible, may irritate eyes

Canada – WHMIS

Key:

B 2

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



B2 – Flammable Liquid

U.S.A. – HMIS

Key:

Health – 1, Fire – 2, Reactivity – 0

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

3. COMPOSITION

	%	TWAEV / TLV mg/m ³	LD ₅₀ (mg/kg) ORAL	LD ₅₀ (mg/kg) SKIN	LC ₅₀ ppm INHALATION
1-methoxy-2-propanol	100%	100 / 370	over 4010	over 11,000	10,000

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. CAUTION: Rescuer must not endanger himself! 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	32°C / 90°F (closed cup)
Autoignition Temperature	290°C / 554°F
Flammable Limits	1.6% – 13.8%
Combustion Products	carbon monoxide, nitrogen oxides, smoke, part oxidised hydrocarbon fragments
Firefighting Precautions	foam, dry chemical, CO ₂ , water fog or spray to cool; firefighters must wear SCBA
Static Charge Accumulation	not known – probably cannot accumulate a static charge on agitation or pumping; glycol ethers have sufficiently high electrical conductivity to prevent static accumulation

Please ensure that this MSDS is given to, and explained to people using this product.

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 & pick up using plastic or aluminium shovel, & store in closed containers for recycling or disposal

7. HANDLING & STORAGE

Store in a cool, dry environment, away from sources of ignition, heat and oxidising agents. Use non-sparking bronze or aluminium hand tools. All electrical and mechanical equipment (including lighting, switchgear and forklift trucks) used with or around this product must be explosion-proof.

Although this product probably cannot retain a static charge on agitation or transfer between containers, it is prudent to ground or electrically bond the source container, the receiving container, and transfer pump before transferring contents. Avoid splashing by ensuring that the product nozzle is below the surface in the receiving container.

This product may react with oxygen in the air to form explosive or flammable peroxides. Ensure that containers are full and tightly sealed. If prolonged storage of a part container is anticipated, flush headspace with dry nitrogen gas prior to sealing. 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. 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 prolonged contact with skin and wash work clothes frequently. An eye bath and safety shower should be available near the workplace.

8. EXPOSURE CONTROL & PERSONAL PROTECTION

Ontario TWAEV	100ppm / 365mg/m ³	Ontario STEV	150ppm / 550mg/m ³
ACGIH TLV	100ppm / 369mg/m ³		
OSHA PEL	100ppm / 360mg/m ³		
Ventilation	mechanical exhaust ventilation may be required to control airborne titre to regulated limits		
Hands	no special protective gloves required; butyl rubber gloves may be used – <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 ether odour
Odour Threshold	10ppm
Vapour Pressure	12.5mmHg / 1.67kPa (25°C / 77°F)
Evaporation Rate (<i>Butyl Acetate = 1</i>)	0.8
Vapour Density (air = 1)	3.1
Boiling Range	119°C / 246°F
Freezing Point	-142°C / -223°F
Specific Gravity	0.918 (20/20°C)
Water Solubility	complete
Also soluble in	most organic solvents
Viscosity	1.7centipoise (25°C / 77°F)
pH	none – (<i>does not liberate hydrogen ions when dissolved</i>)
Conversion Factor	1ppm = 3.68mg/m ³
Molecular Weight	90grams per mole

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10. REACTIVITY

Dangerously Reactive With metal	strong oxidising agents; strong acids; reacts with alkali metals, alkaline earth metals, & hydrides, to release hydrogen gas & alkali;
Also Reactive With Stability	halogens & halogenating agents; aldehydes; may corrode aluminum stable; will not polymerize
Decomposes in Presence of Decomposition Products	oxygen – <i>many Glycol Ethers form explosive peroxides on prolonged contact with air</i>
Sensitive to Mechanical Impact	explosive peroxides no

11. TOXICITY**Effects, Acute Exposure**

Skin Contact	little to no effect
Skin Absorption	yes; total body immersion apart, no toxic effects likely by this route
Eye Contact	vapour begins to irritate above 250ppm; severely irritating at 700ppm
Inhalation	objectionable above 50-75ppm; irritating above 250ppm; at 300-400ppm central nervous depression is seen – headache, dizziness, drowsiness, poor co-ordination
Ingestion	not known, central depression as for inhalation – not a route of industrial exposure

Effects, Chronic Exposure

General	prolonged exposure may cause dermatitis, although no cases have been reported
Sensitising	not a sensitiser in humans or animals
Carcinogen/Tumorigen	not considered a tumorigen or a carcinogen in humans or animals
Reproductive Effect	no known effect in humans; equivocal evidence of neurological abnormality in rodents at doses not causing maternal effects
Mutagen	no known effect on humans or animals
Synergistic With	not known
LD ₅₀ (oral)	4010-7510mg/kg (rat), 5000mg/kg (dog), 10,800 & 11,700mg/kg (mouse), 5300 & 5700mg/kg (rabbit), 9000mg/litre (dog)
LD ₅₀ (skin)	11,000-13,755 & 14,100mg/kg (rabbit) – <i>several studies</i>
LC ₅₀ (inhalation)	10,000ppm (rat), 15,000ppm (rabbit & guinea pig)

12. ECOLOGICAL INFORMATION

Bioaccumulation	rapidly eliminated from living organisms; not a bioaccumulator; biological ½-life is ~2.5 hours
Biodegradation	biodegrades readily & rapidly in the presence of oxygen; 58% in 20 days & ~90% in 29 days
Abiotic Degradation	reacts with atmospheric hydroxyl radicals; estimated ½-life in air is 3.1hr & 21hr
Mobility in soil, water	water soluble; moves readily in soil & water
Aquatic Toxicity	
LC ₅₀ (Fish, 96hr)	4600-10,000mg/litre (Leuciscus idus), 20,800mg/litre (Pimephales promelas)
EC ₅₀ (Crustacea, 48hr)	23,300mg/kg (Daphnia magna)
EC ₅₀ (Algae)	>1000mg/litre (Selenastrum capricornutum)
EC ₅₀ (Bacteria)	>5000 & >6500mg/litre (Salmonella typhimurium) – <i>no effect seen at these doses</i>

13. DISPOSAL

Waste 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. <i>Never cut, drill, weld or grind on or near this container, even if empty</i>

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14. TRANSPORT CLASSIFICATION

Canada TDG	PIN	UN-3092
AND	Shipping Name	1-methoxy-2-propanol
U.S.A. 49 CFR	Class	3
	Packing Group	III
Marine Pollutant		not a marine pollutant
ERAP Required		NO

EMERGENCY INFORMATION

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

15. REGULATIONS

Canada DSL	on inventory
U.S.A. TSCA	on inventory
Europe EINECS	on inventory

Europe Classification **Flammable**

Europe Risk Phrases **R: 10, 67 – Flammable. Vapours may cause dizziness & drowsiness.**
Europe Safety Phrases **none**

NIOSH Recommendations: Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 100 ppm (360 mg/cu m). Recommended Exposure Limit: 15 Min

Short-Term Exposure Limit: 150 ppm (540 mg/cu m).

Threshold Limit Values: 8 hr Time Weighted Avg (TWA): 100 ppm; 15 min Short Term Exposure Limit (STEL): 150 ppm.

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. 1-Methoxy-2-propanol is included on this list.

16. OTHER INFORMATION

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

Preparation Date: **December 2003** Revision Date: **December 2006, November 2009, November 2012**

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