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1. PRODUCT IDENTIFICATION

Name: *Glycol Ether DPM*

Synonyms: *dipropylene glycol (mono)methyl ether; 1-(2-methoxy-1-methylethoxy)-2-propanol; 1-(2-methoxyisopropoxy)-2-propanol; glycol ether DPM; DPGME*

CAS# 34590-94-8

Product Uses: *solvent in coatings & cleaners; heat transfer fluid, low toxicity substitute for glycol ether DM*

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

GHS Class (category)	Flammable (4)	No Pictogram required at this level of hazard.
Signal Word	WARNING	
Hazard Statements	<i>Combustible liquid (H227)</i>	
		Label Pictograms

GHS Precautionary Statements for Labelling	
Prevention	
P210	Keep away from heat, sparks, open flames and hot surfaces. No smoking.
P280	Wear eye protection, protective gloves and clothing of butyl rubber
Response	
P370, P378	IN CASE OF FIRE: use alcohol-resistant foam to extinguish.
Storage	
P403 P235	Store in a well-ventilated place. Keep coll
Disposal	
P501	Dispose of contents and container in accordance with local, regional, national and international regulations.

3. COMPOSITION

Chemical Name:	CAS No.	%	Other Identifiers
<i>Dipropylene Glycol Monomethyl Ether</i>	34590-94-8	100	EC # 252-104-2

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

During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

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

Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Eliminate all ignition sources. Use grounded, explosion-proof equipment. Increase ventilation to area or move leaking container to a well-ventilated and secure area.

Environmental Precautions

Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination.

Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment.
Ventilate contaminated area thoroughly. Monitor area with combustible gas indicator.

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

Keep non-involved personnel away from the area of spillage.

7. HANDLING & STORAGE

Precautions for Safe Handling

Glycol Ether DPM may react with oxygen in the air to form explosive or flammable peroxides. The rate of this reaction is slow & unlikely to cause problems in normal use. However distillation will concentrate any peroxides which may have formed. Never distil to dryness; this may cause an explosion. If prolonged storage is anticipated, ensure that containers are full & tightly sealed. Avoid generating or breathing product vapour. If vapour forms in use, install adequate ventilation. Never cut, drill, weld or grind on or near this container. Avoid prolonged 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 & oxidising agents.

8. EXPOSURE CONTROL & PERSONAL PROTECTION

Ontario TWAEV 100ppm / 605mg/m³ (skin)
AGGIH TLV 100ppm / 605mg/m³ (skin)
OSHA PEL 100ppm / 605mg/m³ (skin)

Ontario STEV 150ppm / 908mg/m³
ACGIH STEL 150ppm / 908mg/m³
OSHA STEL 150ppm / 908mg/m³

Ventilation	no special ventilation required
Hands	no special protective gloves required – butyl gloves are likely to be resistant
Eyes	Safety glasses with side shields – always protect the eyes
Clothing	No special protective clothing required

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

Appearance	Clear colourless liquid.
Odour	mild ether odour & a bitter taste

Odour threshold	35ppm
pH	none – (does not liberate hydrogen ions when dissolved)
Melting Point/Freezing Point	-83°C / -117°F
Initial Boiling Point/Range	190°C / 374°F
Flash Point	75°C / 167°F (Setaflash, closed cup), also 85°C / 185°F (closed cup)
Evaporation Rate	0.02 (Butyl Acetate =1)
Flammability (Solid, Gas)	Not Available
Upper/Lower Flammability or Explosive Limit	1.1% – 14%
Vapour Pressure	0.38mmHg / 0.05kPa (25°C / 77°F), also 0.25mmHg / 0.03kPa (20°C / 68°F)
Vapour Density (air = 1)	5.1
Specific Gravity	0.95 (20/20°C)
Water Solubility	Complete. Also soluble in most organic solvents
Partition Coefficient, n-Octanol/Water (Log Kow)	0.05
Auto-ignition Temperature	207°C / 405°F ¹ , also 270°C / 518°F
Conversion Factor	1ppm = 6.05mg/m ³
Viscosity	3.5centipoise (25°C / 77°F), also 3.8 centipoise (25°C / 77°F)
Physical State	Liquid
Molecular Weight	148 grams per mole
Molecular Formula	C7H16O3

10. REACTIVITY

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

Chemical Stability

stable; will not polymerize

Possibility of Hazardous Reactions

Polymerization will not occur.

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	
LD₅₀ (oral)	5130 & 5225mg/kg (rat), 7130mg/kg (dog)
LD₅₀ (skin)	13,000-14,000 & >19,080mg/kg (rabbit)
LC₅₀ (inhalation)	above 500ppm (no mortality)

Skin Corrosion/Irritation

little or no effect; not irritating – 4 of 4 reports

Serious Eye Damage/Irritation

slight & temporary irritation; not irritating – 4 of 4 reports

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

irritating above 75ppm (low vapour pressure makes this unlikely); 1000ppm (mist) causes headache, dizziness, intoxication, drowsiness, but >100ppm “would not be tolerated willingly”

Skin Absorption

yes; no toxic effects likely by this route

Ingestion

not known, low toxicity – not a route of industrial exposure

STOT (Specific Target Organ Toxicity) - Repeated Exposure

Respiratory and/or Skin Sensitization

Not known to be a respiratory sensitizer.

Carcinogenicity

not known to be a tumorigen or a carcinogen in humans or animals

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

Bioaccumulation	<i>Not a bioaccumulator, due to high water solubility & rapid rate of elimination/metabolism</i>
Persistence and Degradability	<p>Biodegradation - <i>biodegrades readily in the presence of oxygen; 93% in 13 days, 34% in 28 days (in sewage sludge)</i></p> <p>Abiotic Degradation - <i>direct photolysis is reported to cause destruction with a ½-life of 3-4 hours</i></p>
Mobility in soil, water	<i>water soluble; moves readily in soil and water</i>
Aquatic Toxicity	
LC₅₀ (Fish, 96hr)	<i>10,000mg/litre (Pimephales promelas), >1000mg/litre (Poecilia reticulata) – no mortality</i>

NOEC (Fish, 96hr)	1930mg/litre (<i>Cyprinodon variegatus</i>)
EC50 (Crustacea, 48hr)	above 1000mg/litre (<i>Crangon crangon</i> , 96hr), 1920mg/litre (<i>Daphnia magna</i>), 1930mg/litre (<i>Acartia tonsa</i>)
EC50 (Algae)	>969mg/litre (<i>Pseudokirchnerella subcapitata</i>), 7000mg/litre (<i>Skeletonema grethae</i>)
EC10 (Bacteria)	4168mg/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

Canada TDG	PIN	Not regulated for transport	 U.S only
U.S.A. 49 CFR	PIN	NA1993	
	Shipping Name	Combustible Liquid, n.o.s. (dipropylene glycol methyl ether)	
	Class & Packing Group	Combustible, PG III	

Marine Pollutant	Not a Marine Pollutant
ERAP Required	NO
Reportable Quantity	NO
E R G No.	127

15. REGULATIONS

Canada DSL	On Inventory
U.S.A. TSCA	On Inventory
Europe EINECS	On Inventory

U.S.A. Regulations

Immediately Dangerous to Life or Health: 600 ppm

Allowable Tolerances: Dipropylene glycol monomethyl ether is exempted from the requirement of a tolerance when used as a stabilizer in accordance with good agricultural practice as inert (or

occasionally active) ingredients in pesticide formulations applied to growing crops only. Dipropylene glycol monomethyl ether is exempted from the requirement of a tolerance when used as a surfactant or a related adjuvant of a surfactant in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to animals.

OSHA Standards: Permissible Exposure Limit: Table Z-1 8-hr Time-Weighted Avg: 100 ppm (600 mg/cu m). Skin Designation. Vacated 1989 OSHA PEL TWA 100 ppm (600 mg/cu m); STEL 150 ppm (900 mg/cu m), skin designation, is still enforced in some states.

NIOSH Recommendations: Recommended Exposure Limit: 10 Hr Time-Weighted avg: 100 ppm (600 mg/cu m); skin. Recommended Exposure Limit: 15 Min Short-Term Exposure Limit: 150 ppm (900 mg/cu m); skin.

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

FIFRA Requirements: Dipropylene glycol monomethyl ether is exempted from the requirement of a tolerance when used as a stabilizer in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops only. Dipropylene glycol monomethyl ether is exempted from the requirement of a tolerance when used as a surfactant or a related adjuvant of a surfactant in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to animals.

FDA Requirements: Dipropylene glycol monomethyl ether is an indirect food additive for use only as a component of adhesives.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards: Fire Hazard

SARA 302: No chemicals in this material are subject to the reporting re-quirements of SARA Title III, Section 302.

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Water Act

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

Pennsylvania Right To Know: Dipropylene glycol methyl ether (34590-94-8)

New Jersey Right To Know: Dipropylene glycol methyl ether (34590-94-8)

California Prop 65: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other re-productive harm.

Global Inventory Status:

<u>Country/Region</u>	<u>Inventory</u>	<u>Status Description</u>
Australia	AICS	Compliant
Chinal	ECSC	Compliant
Japan	ENCS	Compliant
Korea	KECI	Compliant
New Zealand	NZIoC	Compliant
Philippines	PICCS	Compliant
Taiwan		

16. OTHER INFORMATION

NFPA RATING	Health 1	Flammability 2	Instability 0
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Prepared for Megaloid Laboratories Limited by Richard Koscher
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Key to Abbreviations	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 NIOSH = National Institutr for Occupational Safety and Health NTP = National Toxicology Program OSHA = US Occupational Safety and Health Administration RTECS® = Registry of Toxic Effects of Chemical Substances
References	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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