

Safety Data Sheet



SECTION 1: Identification of the substance/mixture and the company/undertaking

1.1 Production identifiers

Product name : GLYCOL ETHER PM
Brand : CJ Chemicals LLC
CAS-No. : 107-98-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : CJ Chemicals LLC
3469 E Grand River Rd #112
Howell, MI 48843
United States

Telephone : +1 (888) 274-1044

1.4 Emergency Telephone

Emergency Phone # : 1-800-424-9300 CHEMTREC (USA)
1-703-527-3887 CHEMTREC (international) 24 hours/day; 7 days/week

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Clear colourless liquid. Ether like odour.

Most important hazards: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification :

Flammable Liquid - Category 3
Specific Target Organ Toxicity, Single Exposure -Category 3 (respiratory)
Specific Target Organ Toxicity, Single Exposure - Category 3 narcotic effects

Label elements

Hazard pictogram(s)



Signal Word

WARNING!

Hazard statement(s)

Flammable liquid and vapor.
May cause respiratory irritation.
May cause drowsiness or dizziness.

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Precautionary statement(s)

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 Keep container tightly closed.
 Ground/Bond container and receiving equipment.
 Use explosion-proof electrical and ventilating equipment.
 Use only non-sparking tools.
 Take precautionary measures against static discharge.
 Avoid breathing mist or vapours.
 Use only outdoors or in a well-ventilated area.
 Wear protective gloves and eye/face protection.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 If inhaled: Remove person to fresh air and keep comfortable for breathing.
 Call a POISON CENTER or doctor/physician if you feel unwell.
 In case of fire: Use water fog, dry chemical, CO2 or 'alcohol' foam to extinguish.

Store locked up.
 Store in a well-ventilated place. Keep cool.
 Keep container tightly closed.

Dispose of contents/container in accordance with local regulation.

Other hazards

Other hazards which do not result in classification: :

Burning produces obnoxious and toxic fumes. May be sensitive to static discharge. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause mild skin and eye irritation.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Propylene glycol methyl ether	1-Methoxy-2-Propanol alpha-PGME	107-98-2	100.00

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration.
- Inhalation* : IF INHALED: Remove person to fresh air and keep comfortable for breathing. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Call a POISON CENTRE or doctor/physician if you feel unwell.
- Skin contact* : Immediately flush with plenty of water, while removing contaminated clothing. Immediately call a POISON CENTER or doctor/physician. Wash contaminated clothing before reuse.
- Eye contact* : For eye contact, flush with running water for at least 15 minutes. If eye irritation persists: get medical advice/attention.

Most important symptoms and effects, both acute and delayed

- : May cause respiratory irritation. Symptoms may include sore throat, running nose and shortness of breath. May cause central nervous system effects. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Contact with eyes or skin may cause mild irritation.

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Indication of any immediate medical attention and special treatment needed

: Treat symptomatically. This product is a CNS depressant.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

: Carbon dioxide (CO₂); Dry chemical; Alcohol resistant foam; Water fog.

Unsuitable extinguishing media

: Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

: Highly flammable liquid and vapor. Vapours may ignite explosively. Vapours are heavier than air and may spread along floors. May form explosive peroxides.

Flammability classification (OSHA 29 CFR 1910.106)

: Flammable Liquids - Category 3

Hazardous combustion products

: Carbon dioxide and carbon monoxide.; Aldehydes

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

Special fire-fighting procedures

: Do not breathe fumes or vapours. Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: All persons dealing with the clean-up should wear the appropriate chemically protective equipment. Keep people away from and upwind of spill/leak. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not allow material to contaminate ground water system. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.

Methods and material for containment and cleaning up

: Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Use only non-sparking tools and equipment in the clean-up process. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Contact the proper local authorities.

Special spill response procedures

: In case of transportation accident, contact TERRAPURE ENVIRONMENTAL at 1-800-567-7455.
EPA/CERCLA Reportable quantity (RQ): None.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

: Wear protective gloves/clothing and eye/face protection. Use only in well-ventilated areas. Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Keep container tightly closed. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Keep away from flames and hot surfaces. - No smoking. Use only non-sparking tools. Take precautionary measures against static discharges. Ground all equipment during handling. Use explosion-proof electrical and ventilating equipment.

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- Conditions for safe storage** : Keep container tightly closed. Store in cool/well-ventilated place. Store locked up. Keep cool. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks.No smoking. Empty containers may contain hazardous residues.
- Incompatible materials** : Strong oxidizers (e.g. Chlorine, Peroxides, etc.); Strong acids ;Strong bases

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Exposure Limits:</u>				
<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Propylene glycol methyl ether	50 ppm	100 ppm	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

- : Use only in well-ventilated areas. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. Use explosion-proof electrical and ventilating equipment. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection

- : If airbourne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Advice should be sought from respiratory protection specialists.

Skin protection

- : Wear protective gloves. Where extensive exposure to product is possible, use resistant coveralls, apron and boots to prevent contact. Advice should be sought from glove suppliers.

Eye / face protection

- : Wear eye/face protection. Wear as appropriate: Tightly fitting safety goggles

Other protective equipment

- : Ensure that eyewash stations and safety showers are close to the workstation location. Other equipment may be required depending on workplace standards.

General hygiene considerations

- : Do not breathe mist or vapors. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Do not take contaminated clothing home. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : Clear colourless liquid.
- Odour** : Ether like odour.
- Odour threshold** : 10 ppm
- pH** : Not applicable.
- Melting/Freezing point** : -96°C (-140.8°F)
- Initial boiling point and boiling range** : 120°C (248°F)
- Flash point** : 32-36°C (89.6-96.8 °F)
- Flashpoint (Method)** : Seta closed cup
- Evaporation rate (BuAe = 1)** : No data available.
- Flammability (solid, gas)** : Not applicable.
- Lower flammable limit (% by vol.)** : 1.6%

SAFETY DATA SHEET**Upper flammable limit (% by vol.)**

: 13.8%

Oxidizing properties

: None known.

Explosive properties

: May form explosive peroxides.

Vapour pressure

: 11.8 mm Hg

Vapour density

: 3.1

Relative density / Specific gravity

: 0.92

Solubility in water

: Soluble

Other solubility(ies)

: Soluble in most organic solvents.

Partition coefficient: n-octanol/water or Coefficient of water/oil distribution

: 0.37

Auto-ignition temperature

: 287°C (548.6°F)

Decomposition temperature

: No information available.

Viscosity

: 1.81 mPa.s

Volatiles (% by weight)

: No information available.

Volatile organic Compounds (VOC's)

: No information available.

Absolute pressure of container

: Not applicable.

Flame projection length

: Not applicable.

Other physical/chemical comments

: Molecular Weight: 91.1 g/mol

SECTION 10. STABILITY AND REACTIVITY**Reactivity**

: Not normally reactive.

Hygroscopic: Absorb moisture from the air. May form explosive mixtures in air.

Chemical stability

: Stable under normal conditions.

Possibility of hazardous reactions

: May form explosive peroxides upon standing or upon exposure to air or direct sunlight.

Conditions to avoid

: Open flames, sparks, high heat, direct sunlight, and close proximity to incompatible substances. Do not use in areas without adequate ventilation. Avoid contact with live or static electrical sources. Avoid moisture.

Incompatible materials

: Strong oxidizers (e.g. Chlorine, Peroxides, etc.); Strong acids ;Strong bases

Hazardous decomposition products

: None known, refer to hazardous combustion products in Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure:****Routes of entry inhalation** : YES**Routes of entry skin & eye** : YES**Routes of entry Ingestion** : YES**Routes of exposure skin absorption**

: NO

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Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

- : May cause respiratory irritation. Symptoms may include sore throat, running nose and shortness of breath. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Sign and symptoms ingestion

- : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin

- : Direct skin contact may cause slight or mild, transient irritation.

Sign and symptoms eyes

- : Direct eye contact may cause slight or mild, transient irritation.

Potential Chronic Health Effects

- : Frequent or prolonged contact may dry the skin, leading to discomfort and dermatitis.

Mutagenicity

- : Not expected to be mutagenic in humans.

Carcinogenicity

- : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

- : Not expected to cause reproductive effects.

Sensitization to material

- : Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

- : This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Classification:

Specific Target Organ Toxicity, Single Exposure - Category 3 narcotic effects
 Specific Target Organ Toxicity, Single Exposure -Category 3 (respiratory)
 May cause respiratory irritation.
 May cause drowsiness or dizziness.

Not classified as specific target organ toxicity-repeated exposure.

Medical conditions aggravated by overexposure

- : Pre-existing skin, eye and respiratory disorders.

Synergistic materials

- : No information available.

Toxicological data

- : See below for toxicological data on the substance.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Propylene glycol methyl ether	15 000 ppm (55.3 mg/L) (vapour)	4016 mg/kg	> 2000 mg/kg (No mortality)

Other important toxicological hazards

- : None reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

- : The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Do not allow material to contaminate ground water system.

See data for individual ingredient ecotoxicity data.

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Ecotoxicity data:

<u>Ingredients</u>	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Propylene glycol methyl ether	107-98-2	20 800 mg/L (Fathead minnow)	> 1000 mg/L (estimated)	None.

<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Propylene glycol methyl ether	107-98-2	23 300 mg/L (Daphnia magna)	210 mg/L (estimated)	None.

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Propylene glycol methyl ether	107-98-2	> 1000 mg/L/96hr (Green algae)	160 mg/L/96hr (estimated)	None.

Persistence and degradability

: Readily biodegradable

Bioaccumulation potential

: See the following data for ingredient information.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Propylene glycol methyl ether (CAS 107-98-2)	0.37	3.2

Mobility in soil

: Potential for mobility in soil is high.

Other Adverse Environmental effects

: None known.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

: Handle in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in sections 7 and 8.

Methods of Disposal





: Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA

: If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

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SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	UN3092	1-METHOXY-2-PROPANOL	3	III	
49CFR/DOT Additional information	See 49 CFR section 173.150 for exemptions.				
TDG	UN3092	1-METHOXY-2-PROPANOL	3	III	
TDG Additional information	Refer to the TDG regulations under section 1.17 for exemptions.				
IMDG	UN3092	1-METHOXY-2-PROPANOL	3	III	
IMDG Additional information	Refer to the IMDG instructions.				
ICAO/IATA	UN3092	1-Methoxy-2-propanol	3	III	
ICAO/IATA Additional information	Refer to ICAO/IATA Packing Instruction				

Special precautions for user : Appropriate advice on safety must accompany the package.
Keep away from heat, sparks and open flame. - No smoking.

Environmental hazards : This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
: This information is not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Propylene glycol methyl ether	107-98-2	Yes	None.	None.	No	No

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Fire Hazard; Immediate (Acute) health hazard Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

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US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Propylene glycol methyl ether	107-98-2	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes

Canadian Information:

Canadian Environmental Protection Act (CEPA): All ingredients are present on the DSL.

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECS	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Propylene glycol methyl ether	107-98-2	203-539-1	Present	Present	(7)-97; (2)-404	KE-23379	Present	HSR001187

SECTION 16. OTHER INFORMATION

Legend

- : ACGIH: American Conference of Governmental Industrial Hygienists
- AICS: Australian Inventory of Chemical Substances
- ATE: Acute Toxicity Estimate
- CA: California
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CFR: Code of Federal Regulations
- CSA: Canadian Standards Association
- DOT: Department of Transportation
- ECHA: European Chemicals Agency
- ECOTOX: U.S. EPA Ecotoxicology Database
- EINECS: European Inventory of Existing Commercial chemical Substances
- ENCS: Existing and New Chemical Substances
- EPA: Environmental Protection Agency
- HSDB: Hazardous Substances Data Bank
- IARC: International Agency for Research on Cancer
- IBC: Intermediate Bulk Container
- IECSC: Inventory of Existing Chemical Substances
- IMDG: International Maritime Dangerous Goods
- IOC: Inventory of Chemicals
- IUCLID: International Uniform Chemical Information Database
- KECI: Korean Existing Chemicals Inventory
- KECL: Korean Existing Chemicals List
- LC: Lethal Concentration
- LD: Lethal Dose
- MA: Massachusetts
- MN: Minnesota

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N/Ap: Not Applicable
 N/Av: Not Available
 NIOSH: National Institute of Occupational Safety and Health
 NJ: New Jersey
 NOEC: No observable effect concentration
 NTP: National Toxicology Program
 OECD: Organisation for Economic Co-operation and Development
 OSHA: Occupational Safety and Health Administration
 PA: Pennsylvania
 PEL: Permissible exposure limit
 PICCS: Philippine Inventory of Chemicals and Chemical Substances
 RCRA: Resource Conservation and Recovery Act
 RI: Rhode Island
 RTECS: Registry of Toxic Effects of Chemical Substances
 SARA: Superfund Amendments and Reauthorization Act
 SDS: Safety Data Sheet / Material Safety Data Sheet
 STEL: Short Term Exposure Limit
 TDG: Canadian Transportation of Dangerous Goods Act & Regulations
 TLV: Threshold Limit Values
 TSCA: Toxic Substance Control Act
 TWA: Time Weighted Average
 WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2015.
- 2. International Agency for Research on Cancer Monographs, searched 2015.
- 3. Canadian Centre for Occupational Health and Safety, CInfoWeb databases, 2015 (Chempendium, HSDB and RTECs).
- 4. Material Safety Data Sheets from manufacturer.
- 5. US EPA Title III List of Lists, 2015 version
- 6. California Proposition 65 List June 2015

Preparation Date (mm/dd/yyyy)

: 02/01/2016

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

<p><u>Prepared for:</u> Comet Chemical Company Ltd. 3463 Thomas Street Innisfill, ON L9S 3W4 Information (M-F 8:00-5:00): 705-436-5580 www.cometchemical.com</p>	
<p><u>Prepared by:</u> ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.): (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	

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Comsol PM (Glycol Ether PM)

SDS Preparation Date (mm/dd/yyyy): 02/01/2016

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