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Material Safety Data Sheet
Propylene Glycol Monomethyl Ether Propionate

Section 1 - Product Identification

Synonym	:	Methotate, PMP, 1-methoxy-2-propanol propionate
Chemical Formula	:	$C_7H_{14}O_3$
Company Identification	:	Tradeasia International Pte. Limited
Address	:	133 Cecil Street # 12-03 Keck Seng Tower, Singapore Tel: +65-6227 6365 Fax: +65-6225 6286 Email: contact@chemtradeasia.com

Section 2 – Hazards Identification

2.1. Classification
1. Flammable liquids, Category 3
2. Specific target organ toxicity - single exposure, Category 3
3. Serious eye damage/eye irritation, Category 2A

2.2. Label elements
Symbols/Pictograms
Flame, Exclamation mark
Signal Word
Warning
Hazard Statements
1. Flammable liquid and vapour.
2. May cause respiratory irritation.
3. May cause drowsiness or dizziness.
4. Causes serious eye irritation.

Precautionary Statements Storage
1. Avoid contact with skin.
2. Avoid contact with eyes.
3. If contacted with eyes, flush with plenty of water before seek for medical attention.
4. If swallowed, seek medical attention. (Show the label to medical personnel)

2.3. Other hazards
Not applicable

Section 3 – Composition/Information on Ingredients

3.1 Composition comments
Name of substance: Propylene Glycol Monomethyl Ether Propionate
CAS number: 148462-57-1
Molecular formula: $C_7H_{14}O_3$
Molar mass: 146.18 g/mol

Chemical Name	EC No/CAS No	Purity, %

Propylene Glycol Monomethyl Ether Propionate	148462-57-1	99.5

Section 4 – First-Aid Measures

4.1. Description of first aid measures

Inhalation

Ensure self safety based protection procedures before rescue. Remove contamination sources or move victims to fresh air. If breathing stops, have trained personnel administer artificial respiration. Get medical attention immediately.

Eyes

Immediately lift eyelids, flushing eyes with plenty of water for at least 20 minutes until removing contaminated materials. Avoid flushing to the unaffected eye. Wash repetitively if irritation persists. Get medical attention immediately.

Skin

Do not touch such a chemical material directly. Wear leak proof gloves if necessary. Remove contaminated clothing, shoes, and leather (such as watch straps and belts). Wash contaminated sites tenderly with warm water for at least 20 minutes. Get medical attention immediately if irritation persists. Clean contaminated clothing, shoes, and leather thoroughly before reuse.

Ingestion

Never give anything by mouth to victims will soon lose consciousness or lose consciousness already or with the convulsion. Have conscious victims gargle with water thoroughly. Don't induce vomiting. Have the victim drink 240-300 mL of water. If vomiting occurs, lean the victim forward to reduce the risk of ingesting vomits. Repeat administering water. Get medical attention immediately.

4.2. Most important symptoms and effects, both acute and delayed

1. Health effects: Moderate risk.
2. Environmental impacts: Please consult Section 12.
3. Physical and chemical hazards: No evidence of damage is shown.

4.3. Indication of any immediate medical attention and special treatment needed

N.A.

Section 5 – Fire Fighting Measures

5.1. Suitable Extinguishing media

Dry chemical, Carbon dioxide, Alcohol foam, Water mist

5.2. Unsuitable Extinguishing media

N.A.

5.3. Specific hazards arising from the chemical

N.A.

5.4. Special protective actions for fire-fighters

1. Don't enter the fire area without proper protection.
2. Evacuate and extinguish fire from safe distance or protected areas.
3. It will produce pressure to break storage tanks.
4. Flames will propagate and increase risks.

5. Cool down with water mist or spouts to avoid froth or vapor explosion.
6. The burning liquids float on water, so it is inappropriate to use dilute water to extinguish.
7. When the liquids flushing to sewers or public water systems, report to the authority.

5.5. Protective equipment for firefighters
1. Eyes: Wear goggles (shields).
2. Respiration: Wear protective masks on both head and face.
3. Gloves: Solvent proof gloves, boots.
4. Other: Emergent eyewash fountains and safety showers.

Section 6 – Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
Wear appropriate personal protective equipment.

6.2. Environmental precautions
Block large spills. Avoid flushing leaks to sewers or public water systems. Report to fire fighting or hygiene units.

6.3. Methods and material for containment and cleaning up
Remove all sources of ignition. Absorb small spills or cover with fine sand. After blocking large spills, recycle and handle absorbed pollutants.

Section 7 – Handling and Storage

7.1. Precautions for safe Handling
Keep away from sparks, naked fires and other ignition sources. Label no smoking in the workplace. Use a minimal amount in a well ventilated place. Avoid producing vapors or mist droplets. Use ventilation systems and electric equipment with no sparks and ground connection to avoid becoming an ignition source.

7.2. Conditions for safe storage, including any incompatibilities
Use approved containers to store flammable liquids in the workplace. Storage tanks have earth connection. Transformators should connect with the same electric potential. (Ground clamps must be in contact with naked metal). Prepare emergency apparatus of extinguishing fire and handling leaks at any time. Label and close containers tightly even if not in use. Empty containers may pose a risk. Store in a shady, cool, dry, and well ventilated place that sunshine cannot directly illuminate. Keep away from heat, ignition sources, and incompatible substances, such as oxides and alkalis. Store in labeled and appropriate containers and prevent damage. Non-used containers and empty barrels should be kept close. Use appropriate tanks, barrels, cabinets, rooms and buildings to store. Consider installing spill detection and alarm systems. Limit storage and restrain personnel from entering the area. Post warning marks in appropriate places. Separate storage areas from employee-centered workplace. Do a flow inspection of leaks and damages regularly. Prepare fire extinguishers and emergency apparatus in storage areas and nearby. Obey relevant regulations of storage and handling for flammables or combustibles.

Section 8 – Exposure Controls/Personal Protection

8.1. Appropriate engineering controls

N.A.

8.2. Individual protection measures, such as personal protective equipment (PPE)
Eye protection
Goggles.
Hand protection
Solvent proof gloves.
Body Protection
Coveralls.
Respiratory protection
Protective masks on both head and face.

8.3. Hygiene measures
1. Personal well-established hygiene practices.
2. Wash hands before eating, drinking, and smoking.
3. Use soap and water to wash after working, and remove dust off the clothing.

Section 9 – Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance: Transparent (colorless)
Odor: Sweet odor
pH: Acidity (wt %) max: 0.02
Flammability (solid, gas): Not available.
Flash Point: 56°C
Auto-ignition temp.: 351°C
Explosion limit: 0.6-20.0%
Vapor Pressure: 0.9 mmHg (20°C)
Vapor Density: 5.1
Density: Density: 0.95 (Water = 1)
Decomposition Temperature: Not available.
Boiling Point/Range: 161°C /157-167°C
Freezing/Melting Point:
Solubility: 5.2 (20°C)
Partition coefficient (n-octanol/water, log K_{ow}): Not available.
Evaporation Rate: Not available.
Volatility: Not available.

Section 10 – Stability and Reactivity

10.1. Chemical stability
Stable under normal temperatures and pressures.

10.2. Possibility of hazardous reactions
No evidence of hazardous response is shown.

10.3. Conditions to avoid:

Air, Oxygen, Heat, Spark, Flames, Ignition sources, and Oxidation.

10.4. Incompatible materials
Strong oxidants will increase risks of explosion.

10.5. Hazardous decomposition products
Carbon oxide, volatile materials, etc.

Section 11 – Toxicological Information

11.1 Health effects associated with ingredients
Exposure Rate: Skin, inhalation, ingestion, eye.
Symptoms: Not available.
Acute toxicity:
Inhalation: It may irritate the respiratory tract and mucous membrane.
Skin: No severe symptoms show health effects. It may cause skin irritation.
Eyes: It may cause moderate irritation, including burning, weeping, red and swollen eyes.
Ingestion: No adequate symptoms show harmful effects after ingesting.
LD_{50} (animal test, entry): >12,000 mg/kg (rat, oral, skin)
LC_{50} (animal test, entry): 6,072 ppm (rat)
Chronic / Long term toxicity: Repetitive or long exposure will cause nose irritation.

Section 12 – Ecological Information

12.1.Ecotoxicity
1. LC_{50} (fish): Not available.
2. EC_{50} (aquatic invertebrates invertebrates): Not available.
3. Bioconcentration factor (BCF): Not available.

12.2. Bioaccumulative potential
Not available.

12.3. Mobility in soil
Not available.

12.4. Persistence and Degradability
1. Biological Oxygen Demand (BOD): lb/lb in 5 days.
2. When released into the water, this material is expected to biodegrade.
3. When released into the air, this material is expected to react with free oxyhydrogen radicals and have a half-life of about [Not available.] day.
4. Moderately toxic to aquatic organisms.
Half-life (Air): Not available.
Half-life (Water surface): Not available.
Half-life (Groundwater): Not available.
Half-life (Soil): Not available.

12.4. Other adverse effects
Not available.

Section 13 – Disposal Considerations

13.1. Waste Disposal
1. Spilled liquid and vapor may ignite a fire.
2. Staff should wear appropriate personal protective equipment to enter spilled areas to remove all sources of ignition.
3. Block entrances to avoid leaks flushing to sewers or public water systems.
4. Report to fire fighting or hygiene units.
5. If walking paths are slippery, it is appropriate to cover or absorb with fine sand; or block large spills to handle and restore.
6. Use pure materials to absorb small spills.

Section 14 – Transport Information

UN number : 1993
UN proper shipping name : Flammable liquids, N.O.S.
Transport hazard class(es) : 3
Packing Group : III
Marine Pollutant : No
Specific Transport Measures and Precautionary Conditions: Handle carefully and keep away from children.

Section 15 – Regulatory Information

15.1. Safety, health and environmental regulations
Applicable Regulations:
1. Labor Safety and Health Law.
2. Dangerous Chemical Material Symbol Act.
3. Fire Services Act.

Section 16 : Additional Information

16.1. List of abbreviation and acronyms used in this MSDS
SDS : Safety Data Sheets
Index N° : atomic number of the element most characteristic of the properties of the substance
CAS No : Chemical Abstracts Service number
EC No : EINECS Number : European Inventory of Existing Commercial Substances
Repr. Cat. 2 : Substance presumed human reproductive toxicant
Acute Oral Cat. 5 : Substance which is of relatively low acute oral toxicity.
GHS : Globally Harmonised System of Classification and Labelling
LD_{50} : Median Lethal Dose
LC_{50} : Lethal Concentration, 50%
N.A. : Not Applicable
OSHA : Occupational Safety & Health Administration
Cal OSHA : The State of California Division of Occupational Safety and Health (DOSH)
PEL : Permissible Exposure Limits
ACGIH : American Conference of Governmental Industrial Hygienists
TLV : Threshold Limit Value
Japanese MITI : Japanese Ministry of International Trade and Industry
EC_{50} : Half maximal effective concentration

UN : United Nations
U.S. EPA TSCA Inventory: Inventory of the chemical substances manufactured or processed in the United States according to Toxic Substances Control Act compiled and published under the autority of the Environmental Protection Agency
Canadian DSL: Canadian Domestic Substances List

16.2. References
CHEMINFO database, CCINFO CD RAW, 98 2
HAZARDTEXT database, TOMES PLUS CD RAW, Vol.41, 1999
RT ECS database, TOMES PLUS CD RAW, Vol.41, 1999
HSDB database, TOMES PLUS CD RAW, Vol.41, 1999
Hazardous Substances Data Bank, EPA

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