

Number: 060

Section 1. Product and Company Identification

Product name: Tripropylene Glycol Monomethyl Ether (TPM)
Synonyms: -
Recommended use and Restrictions on use: -
Manufacturer, Importer, or Supplier: Shiny Chemical Industrial Co., Ltd. Address: No.5, Yeong Gong 1 st Rd, Yeong An Dist., Kaohsiung 82841, Taiwan, R.O.C. Telephone: +886-7-8619171 ext. 711~714
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Section 2. Hazards Identification

Classification: 1. Specific target organ toxicity following single exposure, Category 3
Label elements:  Hazard pictograms: Exclamation mark Signal word: Warning Hazard Statements: 1. May cause drowsiness or dizziness. Precautionary statements: 1. Avoid breathing dust/fume/gas/mist/vapors/spray. 2. Use only outdoors or in a well-ventilated area.
Other Hazards: -

Section 3. Composition/Information on Ingredients

Pure substance

Chemical Name: Tripropylene Glycol Monomethyl Ether
Synonyms: Tripropylene glycol methyl ether, 3-(3-(3-methoxy propoxy)propoxy)-propanol, Dowanol tpm
CAS NO. : 25498-49-1
Weight: 100%

Section 4. First Aid Procedures

Description of first aid measures:

- Inhalation:
 1. Allow the victim to rest in a well-ventilated area.
 2. Seek immediate medical attention.
- Skin contact:
 1. Gently and thoroughly wash the contaminated skin with warm running water for 15 minutes or until contaminant is removed.
 2. If irritation persists, continue washing.
 3. Seek immediate medical attention.
 4. Wash contaminated clothing, shoes, and leather accessories before reuse or disposal.
- Eye contact:
 1. Gently rinse with eyes open with warm water for 20 minutes or until contaminant is removed.
 2. If irritation persists, continue rinsing.
 3. Seek immediate medical attention.
- Ingestion:
 1. If the victim is about to lose or has lost consciousness or experiences spasm, do not feed any food via mouth.
 2. Do not induce vomiting. Feed the victim with 240 ~ 300cc of water.
 3. Put the victim's body forward to lower the risk of inhalation when the victim spontaneously vomits. Give the victim plenty of water to rinse the mouth.
 4. Seek immediate medical attention.

The most Important Symptoms and Hazardous Effects: Hazardous gases are produced when burned (carbon monoxide, toxic and inflammable gases).

Protection for emergency personnel: Equip firefighters with self-contained compressed air breathing apparatus and conduct first aid in a safe location.

Notes to Physicians: Consider stomach lavage in case of ingestion.

Section 5. Firefighting Measures

Suitable extinguishing media:

1. Dry chemical
2. Carbon dioxide
3. alcohol-resistant foam
4. No waterspout

Special hazards during firefighting: -

Firefighting procedures:

1. Firefighters should wear chemical protective clothing and self-contained breathing apparatus (SCBA).
2. Move containers away from fire if no immediate danger.

3. Use water to lower container temperature and dispel vapor. Avoid using water in containers.

Protective equipment for firefighters: SCBA or self-contained air breathing apparatus.

Section 6. Accidental Release Measures

Personal precautions:

1. Block off contaminated area before full cleanup.
2. Ensure cleanup is conducted by trained personnel.
3. Wear appropriate personal protection equipment.

Environmental precautions:

1. Ventilate area.
2. Extinguish or remove all fire sources.
3. Notify relevant safety, health, and environmental protection agencies.

Methods for cleaning up:

1. Do not touch spillage.
2. Prevent entry to sewers or airtight spaces.
3. Prevent or reduce spillage under safe circumstances.
4. Soak up spills with inert solids, sand, or inert absorbing agents.
5. Remove spill with vacuum equipment. Label and store it in an appropriate container with a lid.
6. In case of small spill, absorb with an inert material. Contaminated absorbent is as hazardous as spillage; label and store it in an appropriate container with a lid.
7. In case of large spill, contact supplier, firefighting and emergency units for assistance.

Section 7. Handling and Storage

Handling:

- Advice on safe handling:
1. Wear appropriate protective equipment during operation and maintain partial ventilation.
 2. Limit exposure to levels allowed by regulations.
 3. Avoid vaporization by sealing containers.
 4. Handle empty containers properly. Residues are flammable when in contact with sparks.
 5. No smoking, eating and drinking at work site.
 6. Ensure personal hygiene after handling product.
 7. Electrical grounding is required for all storage tanks and pipes.
 8. Avoid eye, hand, or physical contact during handling.

9. Empty containers should be cleaned thoroughly.
 10. Safety tools should be used.

Storage:

- Requirements for storage areas and containers:
 1. Store in well-ventilated locations away from fire or heat sources.
 2. Seal containers to avoid contamination and moist. Label warnings on the exterior of containers.

Section 8. Exposure controls

Engineering controls: Use local exhaust ventilation to keep airborne levels below recommended exposure limits.

Control parameters

TWA	STEL	CEILING	BEIs
-	-	-	-

Personal protective equipment:

- Respiratory protection:
 1. Use NIOSH/OSHA approved respiratory equipment.
 2. Use SCBA in emergency response and when concentration is unknown.
- Hand protection: Use chemical protective gloves made of rubber, synthetic rubber, or ethylene rubber.
- Eye protection: Use safety glasses and splash masks.
- Skin and physical protection: Depending on the conditions of use, protective gloves, apron, boots, head and face protection should be worn. Use PPE that is chemical resistant to the product and prevents skin contact.
- Other protection: Emergency shower and eyewash should be installed in work areas.

Hygiene measures:

1. Remove contaminated clothing after work, and clean it up before disposal. Inform laundry staff of material hazards.
2. No smoking and food in work areas.
3. Wash hands thoroughly after handling product.
4. Clean up work area.

Section 9. Physical and Chemical Properties

Appearance: clear, colorless liquid	Odor: characteristic
Odor threshold: -	Melting point: -79°C
pH: -	Boiling point/Boiling range: 234.5 °C
Flammability (solid, gas): -	Flash point: 110°C
Decomposition temperature: -	Test method: close cup

Auto-ignition temperature: -	Explosion limits: -
Vapor pressure: <0.1 mmHg (25 °C)	Vapor density: 7.1
Density: 0.968 (Water = 1)	Solubility: soluble in water
Partition coefficient (log K _{ow}): -	Volatility rate: <1

Section 10. Stability and Reactivity

Chemical stability: highly stable
Possibility of hazardous reactions: contact with strong oxidizer may cause fire or explosions.
Conditions to avoid: heat, flames and sparks.
Materials to avoid: strong oxidizing agents.
Hazardous decomposition products: <ul style="list-style-type: none"> Hazardous decomposition products formed under charring conditions: carbon monoxide, and other harmful gases.

Section 11. Toxicological Information

Exposure Route: skin, inhalation, ingestion, eyes
Symptoms: nose and throat irritation, headache, nausea, dizziness, comatose sleep, motor coordination disorder, possible unconsciousness.
Acute toxicity: <ul style="list-style-type: none"> Inhalation: <ol style="list-style-type: none"> High-density vapor and mist cause apparent nose and throat irritation. Typical effects include headache, nausea, dizziness, comatose sleep, motor coordination disorder, and possible unconsciousness. Skin: <ol style="list-style-type: none"> Long-term contact with undiluted solution does not cause irritation. Possible dermal absorption. Long-term or vast-area contacts may result in toxic levels and symptoms similar to those of inhalation. Eyes: High-density vapor and mist cause minor, temporary irritation. Ingestion: <ol style="list-style-type: none"> Unlikely to ingest toxic amounts under normal operation and use. A large dose may affect central nervous system and cause symptoms similar to those of inhalation. LD₅₀ (animal test, entry): 3,200 mg/kg (rat, oral) LC₅₀ (animal test, entry): -
Chronic / Long-term toxicity: -

Section 12. Ecological Information

Ecological toxicity: 1. LC ₅₀ (fish): 11,619 mg/L (Exposure time: 96 h) 2. EC ₅₀ (aquatic invertebrates): >10 mg/L (Exposure time: 48 h) 3. Bioconcentration factor (BCF): Biodegradable by aquatic creatures when diluted.
Persistence and degradability: • Half-life (Air): - • Half-life (Water surface): - • Half-life (Groundwater): - • Half-life (Soil): -
Bioaccumulative potential: Biodegradable by aquatic creatures when diluted.
Mobility in soil: -
Other adverse effects: -

Section 13. Disposal Considerations

Waste disposal: 1. Refer to relevant local regulations. 2. Store unprocessed waste according to storage conditions. 3. Use a special incinerator or dispose of in a sanitary landfill.

Section 14. Transport Information

United Nations Number (UN No.): Not regulated for transport
UN Proper Shipping Name: -
Transport Hazard classes: -
Packaging Group: -
Marine pollutant (Yes/No): -
Specific Transport Measures and Precautionary Conditions: -

Section 15. Regulatory Information

Applicable Regulations: 1. Occupational Safety and Health Act 2. Regulations for the Labeling and Hazard Communication of Hazardous Chemicals 3. Ordinance on Prevention of Organic Solvent Poisoning 4. Standards of Permissible Exposure Limits of Airborne Hazardous Substances in Workplace 5. Rules on Road Traffic Safety 6. Methods and Facilities Standards for the Storage, Clearance and Disposal of
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Industrial Waste
7. Public Hazardous Substances & Flammable Pressurized Gases Establishment Standards & Safety Control Regulations

Section 16. Other Information

References	<ol style="list-style-type: none">1. CHEMINFO database, CCINFO CD-Rom, 2005-3.2. RTECS database, TOMES PLUS CD-Rom, Vol.65, 2005.3. HSDB database, TOMES PLUS CD-Rom, Vol.65, 2005.4. ChemWatch database, 2005-1.5. Lyondell Chemical Company.
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Notes	The symbol " - " in this sheet indicates no available information; the symbol " / " indicates the information is not applicable to the substance.