Number: 010

Section 1. Product and Company Identification

Product name: Propylene glycol monomethyl ether acetate
Synonyms: C260 rinse
Recommended use and Restrictions on use: Paints, Ink Solvent, Detergent, Leather dyeing, Pesticides materials.
Manufacturer, Importer, or Supplier: Shiny Chemical Industrial Co., Ltd. Address: No.5, Yeong Gong 1stRd, Yeong An Dist., Kaohsiung 82841, Taiwan, R.O.C. Telephone: +886-7-8619171 ext. 711~716 Fax: +886-7-6222620
Emergency telephone number: +886-7-8619171 ext. 711~714 Fax: +886-7-6222620

Section 2. Hazards Identification

Classification:

1. Flammable liquid: Category NO.3
2. Specific target organ toxicity following single exposure: Category 3

Label elements:

Hazard pictograms: Flame, Exclamation mark

Signal word: Warning

Hazard Statements:

1. Flammable liquid and vapour.
2. May cause respiratory irritation.

Precautionary statements:

1. Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
2. Keep container tightly closed.
3. Ground/bond container and receiving equipment.
4. Use explosion-proof electrical/ventilating/lighting equipment.
5. Use only non-sparking tools.
6. Take precautionary measures against static discharge.
7. Wear protective gloves/protective clothing/eye protection/face protection.
8. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

9. In case of fire: Use alcohol resistant foam, Carbon dioxide for extinction.
10. Store in a well-ventilated place. Keep cool.
11. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation
12. Avoid breathing dust/fume/gas/mist/vapours/spray.
13. Use only outdoors or in a well-ventilated area.
14. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
15. Call a POISON CENTER or doctor/physician if you feel unwell.
16. Store in a well-ventilated place. Keep container tightly closed.
17. Store locked up.

Other Hazards: -

Section 3. Composition/Information on Ingredients

Pure substance

Chemical Name: Propylene glycol monomethyl ether acetate

Synonyms: 1-Methoxy-2-propanol acetate, Propylene glycol methyl ether acetate, Acetic acid, 2-methoxy-1-methylethyl ester, PGMEA, 2-Methoxy-1-methylethyl acetate, 1-Methoxy-2-acetoxypropane, 2-Acetoxy-1-methoxypropane, Propylene glycol 1-methyl ether, 2-acetate, PMA

CAS NO. : 108-65-6

Weight: 100%

Section 4. First Aid Procedures

Description of first aid measures:

• Inhalation:

1. In case of hazardous effect happened, remove affected person away from source of exposure and into fresh air.
2. If the patient stops breathing, give the patient artificial respiration.
3. Seek medical attention immediately.

• Skin contact:

1. Remove contaminated clothing and boots, washing affected area thoroughly with soap and water at least 15 minutes.
2. Seek medical attention immediately.
3. Clean and dry polluted clothing and boots before use again.

• Eye contact:

1. In case of direct contact, flush eyes with clean water at least 15 minutes.
2. Seek medical attention immediately.

• Ingestion: If appreciable quantities of this product are accidentally swallowed, seek

medical attention immediately.
Most important symptoms and effects, both acute and delayed: 1. May cause moderate irritation, including burning sensation, tearing, redness or swelling. 2. Prolonged overexposure to either vapor or mist may cause coughing, shortness of breath, dizziness and drunkenness. 3. Ingestion may cause gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy, or diarrhea. 4. Repeated or prolonged exposure may irritate the mucous membranes.
Protection for emergency personnel: Apply appropriate personal protective equipment such as class C clothing to conduct first aid in a safety area.
Notes to Physicians: -

Section 5. Firefighting Measures

Suitable extinguishing media: 1. Chemical arid powder, Carbon Dioxide, Mist, Alcohol resistant foam. 2. Putting out the burnout by using anti-alcohol foam or spraying the mist.
Unsuitable extinguishing media: Do not use solid water stream.
Special hazards during firefighting: 1. Moderate Fire Accident hazardous. 2. Vapor/Air mixture may explosive. 3. The vapor is heavier than air and may travel along the ground; distant ignition possible.
Firefighting procedures: 1. Move the container away from the firing place under the safety condition. 2. Cooling down the tanks or the containers which exposed to the fire with mist until the fire extinguished. 3. Staying away from the two sides of the tanks. 4. Suggestion of handling tanks and storage areas：Apply auto-Kist controlling frame or auto-spraying nozzle until the fire been put off. 5. In case of no applicable procedure could be executed, please evacuate the unrelated persons, isolate the disaster area and prohibit other persons from entering. 6. Let the fire burn out. 7. Immediately evacuate all people while the tank safety valve alarmed or color changed by firing. 8. The suggestion to the tank, train, or reservoirs wagon: Evacuation radius: 800 meters (half miles).
Protective equipment for firefighters: The firemen should wear the respirators,

protective gloves, fire clothing.

Section 6. Accidental Release Measures

Personal precautions:

1. Isolate the disaster area and prohibit other persons from entering.
2. Keep members stay at ventilate area of spill and away from low-lying lands.

Environmental precautions:

1. Keeping away from heat, flames, sparks and other sources of ignition.
2. Removing all sources of ignition.

Methods for cleaning up:

1. Using mist to reduce vapors.
2. Try to stop the leakage under the safety condition.
3. Small spill: Absorb with dry sands or other non-combustible materials and discard the absorbed substances into the container as a disposal.
4. Serious Leakage: Contain the leakage into a protecting embankment and dispose it.

Section 7. Handling and Storage

Precautions for safe handling

Advice on safe handling：

1. Avoid producing or inhaling the dusts.
2. Prevent human contact or inhalation.
3. Dressing the protective clothes while being at the excessive exposure risk.
4. Operate in the well-ventilated place.
5. Prevent the vapors accumulated at holes or drainage holes.
6. Before the air had been confirmed safely, do not enter into the airtight space.
7. Avoid smoking, naked-light and fire-lighter.
8. Avoid making static electricity.
9. All wires and apparatus must be ground connection.
10. Do not use plastic barrel.
11. While operating, use anti-spark tools.
12. Avoid touching incompatible substances.
13. While operating, prohibit smoking and dieting.
14. Make sure the container is well closed after finishing the task.
15. Avoid making the physics damage of the container.
16. Washing hands with water and soap after the manipulation.
17. The work clothes should be washed separately.
18. The air must be examined regularly to confirm which match the exposure standard, and to keep the safety working circumstance.

19. For industrial use only.
20. Keep container tightly closed when not in use.
21. The potential for peroxide formation is enhanced when this solvent is used in processes such as distillation.
22. Use only non-sparking tools.
23. Properly ground containers before beginning transfer.
24. When transferring propylene glycol ethers with flash points at or below 60 °C (140 °F) into fixed site vessels, the vessel should be purged and inerted prior to transfer.
25. Propylene glycol ethers may be transferred into air atmospheres if the temperature of the product and the ambient temperature within the shipping container are both at least 16.7 °C (30 °F) less than the product's flash point. After loading, nitrogen blanketing is required if the contents of the transportation container could exceed a temperature of 16.7 °C (30 °F) less than the product flash point during any subsequent transportation activities.
26. If the product flash point is less than 16.7 °C (30 °F) above either the ambient temperature of the transportation container or the storage temperature of the product, the container should be purged and inerted with nitrogen prior to loading and nitrogen blanketed after loading.
27. Handle empty containers with care.
28. Flammable/combustible residue remains after emptying.
29. The purging of all empty shipping containers, regardless of the flashpoint, is recommended when received with air atmospheres.
30. Isolate, vent, drain, wash and purge systems or equipment before maintenance or repair.
31. Use adequate personal protective equipment.
32. Observe precautions pertaining to confined space entry.

Fire-fighting class：OSHA/NFPA Class II combustible liquid.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers：

1. Manufactures provide the package.
2. The plastic container is only applicable to the flammable liquid.
3. Examine the vessel being labeled clearly and no leakage.
4. Avoid being stored with oxide chemical substances.
5. Avoid being stored with zinc or galvanized metals.
6. Stored in the original vessel and reserved at the combustible district.
7. Prohibit accumulating the vapors in the cellar, hollow and basement.
8. Avoid smoking, naked-light and fire-lighter.

9. Confirm the container is well closed.
10. Storages have to be away from incompatible materials, and stored at the cool, arid, and well ventilated place.
11. Avoid the physics damage of the container, and examine the leakage periodically.
12. Store only in tightly closed, properly vented containers away from heat, sparks, open flame and strong oxidizing agents.
13. Storage under nitrogen atmosphere is recommended to minimize possible formation of highly reactive peroxides.
14. Store in properly lined steel/stainless steel to avoid slight discoloration from mild steel/copper.
15. Aluminum (5000 series alloys - U.S. Aluminum Association Standard) showed no corrosion after 30 days contact with PM Acetate, DPM, TPM, PTB, or PM at 71°C (160°F).
16. Some plastics/rubbers are attacked by Glycol Ethers/Ether Esters.
17. This product will absorb water if exposed to air.

Specific end use(s)：See Section 1.

Section 8. Exposure controls

Engineering controls:

1. Provide the local exhaust ventilating system.
2. If the material exceeds the exposure lower limit, the ventilation facilities must be the explosion-proof type.
3. Make sure the apparatus qualified with the exposure limited values.

Control parameters			
TWA	STEL	CEILING	BEIs
-	-	-	-

Personal protective equipment:

• Respiratory protection:

1. Under the circumstance of using or exposing to the highly concentration, dressing the breathing protective device is necessary.
2. The standard of breathing protection is various with the exposure concentration from the minimum to maximum.
3. While operating, the warning notes must be confirmed first.
4. Positive pressure device or other types of positive pressure breathing protective devices.
5. Portable positive pressure breathing protective device or other types of positive pressure breathing protective devices.
6. Under the circumstance of unknown concentration or fatal concentration：

Positive pressure breathing protective portable device, life-saving positive pressure breathing protective portable device or the full-face mask portable positive pressure breathing protective portable device. • Hand protection: Chemical resistant gloves. • Eye protection: Wearing chemical protective spectacle. • Skin and physical protection: Wearing chemical resistant clothing if splash hazard exists.
Hygiene measures: 1. Take off the pollutant clothes quickly after the work, do not dress or abandon before cleaning, and the laundry must be informed the danger of the pollutants. 2. Forbid smoking or diet in the workplace. 3. After dealing with the material, washing hands thoroughly. 4. Keep the working place clean.

Section 9. Physical and Chemical Properties

Appearance: Colorless liquid	Odor: Sweet
Odor threshold: -	Melting point: -
pH: -	Boiling point/Boiling range: 146°C
Flammability (solid, gas): -	Flash point: 46°C Test method: close cup
Decomposition temperature: -	
Auto-ignition temperature: 354°C	Explosion limits: 1.5% ~ 7% (200°C)
Vapor pressure: 3.8 mmHg (25°C)	Vapor density: 4.6 (air=1)
Density: 0.966 (g/cm^3) (Water=1) (25°C)	Solubility: 1. Solubility with waterish 18.5% 2. Soluble with organic solvent
Partition coefficient (n-octanol/water, log K_{ow}): -	Volatility rate: 0.39 (Butyl acetate=1)
Viscosity, kinematic: 1.1 mm2/s at 25 °C	-

Section 10. Stability and Reactivity

Chemical stability: 1. May formed as the explosive peroxides. 2. Avoid being long term stored or contacted with the air, light. Do not use and store it if the temperature higher than room temperature.
Possibility of hazardous reactions: -
Conditions to avoid: 1. Heat Flame, Sparks or other ignition. 2. Heating the vessels may cause the explosion.
Materials to avoid: Oxidative materials.

Hazardous decomposition products: Carbon oxides.

Section 11. Toxicological Information

Exposure Route: Skin, inhalation, ingestion, eye.

Symptoms: Sore throat, cough, shortness of breath, difficulty breathing, the rickets, rapid breathing, skin and the eyes irritation, stomach ache, vomiting and kidney damage.

Acute toxicity:

• Inhalation:

1. Inhale the vapors may cause the uncomfortable feeling of the upper respiratory tract and lung.
2. High temperature increases the damage of inhalation.
3. The acute effect of inhaling high concentration: Irritation of chest and nose, accompanied with coughing, sneezing, headache and disgusting.
4. Exposed to the highly humidity environment may cause the coma, unconsciousness, shock, or lethal.
5. Central nervous system depression includes: common uncomfortable, dizzy, headache, and head faint vertigo, narcotic effect of the slow response, the meaning is not clear and thus lead to vague conscious.
6. Serious poisoning can lead to severe respiratory depression and death.

• Skin:

1. Long-term exposed to the liquid will make the skin moderate ill-fitting and dehydrated.
2. The material will make the original skin symptoms get worse rapidly.
3. To the commercial PGMEA, the rabbits exposed to the material repeatedly two weeks will induce the skin swelling and stripping down.

• Eyes:

1. The dusts and the eyes water vapor react as hydrochloric acid, which may stimulate and cause red eyes, pain, and blurred vision.
2. 50 μ g is enough to irritate rabbit's eyes seriously.
3. The material is highly ill-fitting to eyes, and will cause shed tears, pain and conjunctivitis.
4. If not handled immediately and properly, corneal damage may develop into a permanent visual damage.
5. This material may have a serious eye stimulate, cause obviously inflammation.

• Ingestion:

1. The liquid will make ill-fitting; swallowing is harmful.
2. Ingest the liquid will cause nausea, abdominal irritation, pain and vomiting.

• LD_{50} (animal test, entry): 8,532 mg/kg (rat, swallow)

• LC_{50} (animal test, entry): 4,345 ppm (rat, inhalation).
Chronic / Long-term toxicity: 1. Exposed excessively and repeatedly may cause upper respiratory tract irritation and the health effect of liver and kidney. 2. While expose the rats at the value of PGMEA 3,000 ppm, the symptoms may developed: temporarily mild movement disorder, sleeping, central nervous depression, low body temperature, liver weight increase in male, slight poisoning in fetus.
Carcinogenicity: No adverse effect observed. Not listed by IARC, NTP, OSHA or EPA.

Section 12. Ecological Information

Ecological toxicity: 1. LC_{50} (fish): - 2. EC_{50} (aquatic invertebrates): - 3. Bioconcentration factor (BCF): -
Persistence and degradability: • Half-life (Air): - • Half-life (Water surface): - • Half-life (Groundwater): - • Half-life (Soil): -
Bioaccumulative potential: -
Mobility in soil: -
Other adverse effects: -

Section 13. Disposal Considerations

Waste disposal: 1. Consult the relevant regulation to deal with. 2. Retrieve as much as possible or consult manufacturers. 3. Incinerate the leftovers in the qualified place. 4. Retrieve container if possible, or discard in the qualified field.

Section 14. Transport Information

United Nations Number (UN No.): 3272
UN Proper Shipping Name: Esters, N.O.S. (Propylene glycol monomethyl ether acetate)
Transport Hazard classes: 3
Packaging Group: III
Marine pollutant (Yes/No): 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. Methods and Facilities Standards for the Storage, Clearance and Disposal of Industrial Waste.
4. Public Hazardous Substances & Flammable Pressurized Gases Establishment Standards & Safety Control Regulations.
5. Regulations Governing Designating and Handling of Priority Management Chemicals.

1. TSCA 12b

No substances are subject to TSCA 12(b) export notification requirements.

2. Significant New Use Rules (SNUR)

No substances are subject to a Significant New Use Rule.

3. SARA 302/304

This product contains no known chemicals regulated under SARA 302/304.

4. SARA 311/312

Based upon available information, this material is classified as the following health and/or physical hazards according to Section 311 & 312：
Flammable (gases, aerosols, liquids, or solids)
Specific target organ toxicity (single or repeated exposure)

5. SARA 313

This product contains no known chemicals regulated under SARA 313.

6. State Reporting

This material does not contain listed substance(s) known to the State of California to cause cancer, birth defects, or other reproductive harm that would require warning under the California Proposition 65 State Drinking Water and Toxic Enforcement Act.
This product contains no known chemicals regulated by New Jersey's Worker and Community Right to Know Act.
No components are subject to the Massachusetts Right to Know Act.
This product contains no known chemicals regulated by Pennsylvania's Right to Know Act.

Other international regulations

Global Inventory Status
The ingredients of this product are compliant with the following chemical inventory requirements or exemptions.
*Additional Explanatory Status Statements follow the table, as necessary.

Country/Region	Inventory	Status Description
Australia	AICS	Compliant
Canada	DSL	Compliant
China	IECSC	Compliant
Europe	REACH	See REACH Compliance Statement
Japan	ENCS	Compliant
Korea	KECI	Compliant
New Zealand	NZIoC	Compliant
Philippines	PICCS	Compliant
United States of America	TSCA	Compliant
Taiwan	TCSCA	Compliant

Section 16. Other Information

References	1. ChemWatch Database, 2018. 2. OHS MSDS Database, 2018. 3. European Chemicals Agency (ECHA) 4. National Institute of Technology and Evaluation 5. Glycol Ether PM ACETATE SDS of Lyondellbasell Chemical Company
Created by	Shiny Chemical Industrial Co., Ltd.
	Address: No.5, Yeong Gong 1st Rd., Yeong An Dist., Kaohsiung City Telephone: +886-7-8619171 ext. 711~716
Revision Date	2022/10/14
Notes	The symbol " - " in this sheet indicates no available information; the symbol " / " indicates the information is not applicable to the substance.