



Philippine Prosperity Chemicals, Inc.

MATERIAL SAFETY DATA SHEET

Date Reviewed :
January 21, 2010

PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE
Product Code: PMA
Product Type Chemical Solvent
Company: Philippine Prosperity Chemicals, Inc.
Office Address: U1201 Picadilly Star Building
4th Ave. cor 27th St. Fort Bonifacio Global City, Taguig
Plant Address: PPCI In-land Bulk Terminal – Guiguinto, Bulacan
Contact Numbers: Tel: (632) 621-3104 to 09
Fax: (632) 659-6874
Emergency Numbers: Mobile: 0917.5845496 / 0917.5845509

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance Formal Name: 1-methoxypropan-2-yl acetate
Substance Chemical Formula: $\text{CH}_3\text{OCHCH}_3\text{CH-O-COCH}_3$
Common name: Propylene glycol monomethyl ether acetate
Synonyms: 1-methoxy-2-propyl acetate, 2-methoxy-1-methylethyl acetate, 1-Methoxy-2-acetoxypropane, methoxypropylacetate, 2-acetoxy-1-methoxypropane,
Chemical Abstract Service Registry Number (CAS RNs): 108-65-6

3. HAZARDS IDENTIFICATION

Emergency Overview: Combustible liquid and vapor! May form explosive peroxides. Irritating to eyes. Target organ(s): Liver. Kidneys.
Human Health Hazards:
Inhalation: Inhalation of high concentrations may cause characterized effects like coughing, nausea, headache, dizziness and sore throat.
Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea.
Skin Contact: Causes moderate skin irritation. Dryness of skin may also manifest.
Eye Contact: Causes eye irritation. May cause painful sensitization to light. Pain and redness could result



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Chronic Exposure: Prolonged or repeated eye contact may cause inflammation of the membrane lining the eyelids and covering the eyeball. Prolonged or repeated skin contact may cause drying, cracking, redness, itching, and/or swelling (dermatitis).

Aggravation of Pre-existing Conditions: Persons with pre-existing eye disorders or impaired respiratory function may be more susceptible to the effects of this material.

4. FIRST AID MEASURES

Inhalation: Move the person to fresh air, immediately perform artificial respiration if breathing has stopped. When breathing is difficult, administer oxygen. Keep the person warm and at rest. Obtain medical attention immediately.

Ingestion: Obtain medical attention immediately. Do not induce vomiting unless directed to do so by a medical personnel. Never give anything by mouth to an unconscious person.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If persistent irritation occurs, obtain medical attention. Wash clothing before reuse.

Eye Contact: Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. If persistent irritation occurs, obtain medical attention.

5. Fire Fighting Measure

Fire: Combustible liquid and vapor!
Flash point: 42 °C (107.6 °F)
Auto ignition temperature: 315 °C (599 °F)
Flammable limits in air based on pure PMA % by volume:
Lower Flammable Limit: 1.5; Upper Flammable Limit: 10.0

Explosion: Above flash point temperature, vapor-air mixtures are explosive within flammable limits noted above. Sealed containers may rupture when heated. Sensitive to static discharge.

Extinguishing media: Dry chemical, alcohol-resistant foam or carbon dioxide. Water spray may be used to keep fire exposed containers cool or protect personnel attempting to stop leak and disperse vapors.

Specific Hazards: Containers exposed to intense heat from fires should be cooled with large quantities of water. The vapor is heavier than air and spreads along the ground and distant ignition is possible.

Special Firefighting Procedure: Stay upwind. Use self-contained breathing apparatus and protective clothing. Vapor may explode if ignited in an enclosed area. Cool exposed containers with water.



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Special Information: All storage areas should be provided with adequate firefighting facilities and equipment. The liquid produces a vapor that forms explosive mixtures with air especially in conditions at above flash point temperatures. In the event of a fire, contact the nearest fire station. For the company's own firefighters, they should wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

6. ACCIDENTAL CONTROL MEASURES

Personal precautions: Avoid contact with skin, and eyes. Ventilate area of leak or spill thoroughly. Do not breathe vapor. Stay upwind and keep out of low areas. Remove all heat or ignition sources. Evacuate the area of all non-essential personnel. Shut off leaks, if possible without personal risk.

Personal protection: Wear appropriate personal protective equipment (PPE) as specified in Section 8.

Environmental precautions: Contain and recover liquid when possible with an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Use non-sparking tools and equipment. Prevent from spreading or entering into drains, ditches, rivers and other waterways by using sand, earth, or other appropriate barriers. Prevent contamination of soil and water.

Clean-up methods - small spillage: Remove all ignition sources and ventilate area. Evacuate all non-essential personnel. Stop leak if without risk. Dilute with water and mop up, or absorb with an inert dry material and place in a sealable container. Label and seal waste containers for product recovery or appropriate disposal (see Section 13).

Clean-up methods – large spillage: For large liquid spills (say more than a drum), remove all ignition sources. Evacuate all non-essential personnel. Stop leak if possible and without risk. Do not flush away residues with water. Blanket spill with alcohol resistant foam to limit evaporation or dike area to contain spill and absorb with earth, sand or other non-combustible material. Transfer to a labeled, sealable container for product recovery or proper disposal. Wear appropriate protective clothing to minimize contact with skin. Allow residues to evaporate or soak up with a suitable absorbent material and dispose safely and appropriately (see Section 13).

7. HANDLING AND STORAGE

Handling: Avoid inhaling vapor and/or mists. Avoid contact with skin, eyes, and clothing. Extinguish any naked flames or remove all ignition sources or sparks. Do not smoke. Electrostatic discharge may also cause fire. Ensure electrical continuity by bonding and grounding all equipment. Avoid splash



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Handling: filling. Do not use compressed air for filling, discharging, or handling operations.

Storage: Keep container in a cool, well-ventilated area, away from ignition and heat sources. Keep away from aerosols, oxidizing agents and corrosives. The vapor is heavier than air. Beware of accumulation in pits and confined spaces. Breathing losses during storage should be controlled by a suitable vapor treatment system. Store in a segregated and approved area. Keep container tightly closed and sealed until ready for use.

Product transfer: Electrostatic charges may be generated during pumping and these discharges may cause fire. Metal containers should be bonded and grounded for transfers to avoid static sparks. Keep containers closed when not in use. Do not use compressed air for filling, discharging or handling.

Recommended materials: For containers or container linings, use mild steel or stainless steel. For gasket and seals use compress asbestos, butyl rubber or Teflon.

Unsuitable materials: Do not store in certain plastic. May react with aluminum if temperature is more than 50 °C.

Other Information: PMA is available from PPCI in drums. Details are available upon request.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering Control Measure / Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

Occupational Exposure Limit and Standard: No value assigned for this specific material by American Conference of Governmental Industrial Hygienist (ACGIH). However, American Industrial Hygiene Association (AIHA) has below recommendations.

Value and Limit type: Time Weighted Average (TWA) – exposure limit over an eight-hour working day, for a five-day working week over an entire working life.

Time Weighted Average (TWA) 50 parts per million or 270 mg/m³

Respiratory protection: Where local exhaust ventilation is not practicable, wear a full face-piece or a double cartridge respirator with organic vapor canister NPF 400. It may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face-piece positive-pressure, air-supplied respirator.

WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.



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<i>Hand protection:</i>	PVC gloves, chemical resistant gloves or nitrile gloves.
<i>Eye protection:</i>	Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.
<i>Body Protection:</i>	Wear impervious protective clothing such as one-piece overall, including safety shoes or boots, gloves, laboratory coat, apron or any appropriate cotton-made clothing to prevent skin contact.
<i>Specific Hygiene Measures:</i>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

9. PHYSICAL AND CHEMICAL PROPERTIES

<i>Appearance:</i>	Clear colorless liquid
<i>Odor:</i>	Aromatic, Fruity, Ester-like characteristic
<i>Initial boiling point:</i>	146 °C (294.8 °F)
<i>Freezing point:</i>	-10 °C (14 °F)
<i>Vapor Pressure:</i>	0.50 kPa @ 20 °C
<i>Specific Gravity:</i>	0.968 @ 20 °C
<i>Solubility:</i>	Moderate miscibility in water (19.8 % wt.)
<i>Dynamic viscosity:</i>	0.80 centipoise (cP) @ 25 °C
<i>Vapor density (air=1):</i>	4.60
<i>Flash point:</i>	42 °C
<i>Auto-ignition temperature:</i>	315 °C
<i>Lower flammable limit in air:</i>	1.5 % (v/v)
<i>Upper flammable limit in air:</i>	10 % (v/v)
<i>Molecular weight</i>	132.16 g/mole
<i>Evaporation rate, (NBAC = 1):</i>	0.34

10. STABILITY AND REACTIVITY

<i>Stability:</i>	Stable under normal temperature and pressure for use and storage.
<i>Conditions to avoid:</i>	Heat, flames, ignition sources and confined spaces. Slowly decomposed by moisture. Avoid exposure to air.



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Materials to avoid:

Avoid acids, alkalis, oxidizing agents, reducing agents, or nitrates. Propylene glycol methyl ether acetate may form an explosive mixture with air.

Hazardous decomposition products:

Carbon dioxide and carbon monoxide may form when heated to decomposition. May form explosive peroxides.

11. TOXICOLOGICAL INFORMATIONS

Basis for assessment:

Information given is based on product data.

Oral rat, LD₅₀

8,532 mg/kg

Inhalation rat, LC₅₀

4,345 ppm / 10 Hour

Skin rabbit, LD₅₀

5,000 mg/kg

Eye irritation:

Slight irritant.

Skin irritation:

Slight irritant.

Human effects:

Prolonged or repeated eye contact may cause inflammation of the membrane lining the eyelids and covering the eyeball (conjunctivitis). Prolonged or repeated skin contact may cause drying, cracking, redness, itching, and/or swelling (dermatitis). Prolonged or repeated exposure may cause kidney and liver damage. Contains material which may cause kidney, liver and/or central nervous system damage.

12. ECOLOGICAL INFORMATION

Basis for assessment:

Information given is based on product data.

Environmental Fate:

PMA is readily biodegradable and has not been shown to interfere in any way with waste water treatment plants. Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise. The product itself and its products of degradation are not toxic.

Bioaccumulation:

This material has a low bioaccumulation potential and not expected to significantly bioaccumulate.

13. Disposal Considerations

Precautions:

Refer to Sections 7 before handling the product or containers.



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<i>Waste disposal:</i>	Whatever PMA cannot be saved for recovery or treating, it should be managed in an appropriate and approved waste disposal facility. Care should in any case be taken to ensure disposal is compliant with statutory and regulatory requirements or local environmental laws.
<i>Product disposal:</i>	This product is not suitable for disposal by either landfill or via local sewers, drains, natural streams or rivers. The following advice only applies to the product as supplied. Processing, use or contamination of this product may change the waste management options.
<i>Container disposal:</i>	Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard. Do not pressure cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. Send to drum handlers that clean, recondition or metal reclaimer. Disposal of container and unused contents must be in accordance to local regulatory requirements and environmental laws.

14. TRANSPORT INFORMATION

<i>UN Number:</i>	1993 (Flammable Liquid) or 3272 (Esters)
<i>Hazard Class:</i>	3 (Flammable Liquid)
<i>Packing Group:</i>	III (Flash Point = 42°C)
<i>Proper shipping name:</i>	PMA (Propylene Glycol Monomethyl Ether Acetate)

15. OTHER INFORMATION

Philippine Prosperity Chemicals, Inc. provides the information contained herein in good faith and was obtained from sources which we believe are reliable. However, the information is provided without any warranty. The condition or methods of handling, storage, use and disposal are beyond our control and may be beyond our knowledge. For this and any other reasons we don't assume responsibility and disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use and disposal of the product. This document is intended only as a guideline to the appropriate precautionary handling of the material by properly trained personnel using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.