1. Identification

Product identifier: PGMEA - PM Acetate
Other means of identification:
- Product code:
- Synonyms:
  Propylene Glycol Monomethyl Ether Acetate
Recommended use: Industrial use.
Recommended restrictions: None known.

Manufacturer / Importer / Supplier / Distributor information

Supplier/Manufacturer: KMG Electronic Chemicals, Inc.
Address:
9555 W. Sam Houston Parkway South
Suite 600
Houston, Texas 77099
Telephone: 713-600-3800
Emergency telephone: 760-476-3960

2. Hazard(s) identification

Physical hazards:
- Category 3: Flammable liquids
Health hazards:
- Not classified.
OSHA defined hazards:
- Category 2A: Serious eye damage/eye irritation

Label elements

Signal word: Warning
Hazard statement:
Flammable liquid and vapor. Causes serious eye irritation.
Precautionary statement:
Prevention:
Response:
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Storage:
Keep cool. Store in a well-ventilated place.
Disposal:
Dispose of contents/container in accordance with local/regional/national/international regulations.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methoxy-1-methylethyl acetate</td>
<td></td>
<td>108-65-6</td>
<td>99.5</td>
</tr>
</tbody>
</table>

Composition comments:
All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation:
Move into fresh air and keep at rest. If breathing stops, provide artificial respiration. Get medical attention if any discomfort continues.

Skin contact:
Wash skin with soap and water. Get medical attention if irritation develops and persists.
Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation persists after washing.

Ingestion
Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn’t enter the lungs. Get medical attention.

Most important symptoms/effects, acute and delayed
May cause respiratory tract irritation. May cause drowsiness or dizziness. Defats the skin.

Indication of immediate medical attention and special treatment needed
In case of shortness of breath, give oxygen. Keep victim warm.

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

5. Fire-fighting measures

Suitable extinguishing media
Alcohol resistant foam. Carbon dioxide (CO2). Dry chemical. Water spray.

Unsuitable extinguishing media
Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical
The product is flammable, and heating may generate vapors which may form explosive vapor/air mixtures. By heating and fire, irritating vapors/gases may be formed.

Special protective equipment and precautions for firefighters
Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire-fighting equipment/instructions
In case of fire and/or explosion do not breathe fumes. Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions. ALWAYS stay away from tanks engulfed in flame. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Avoid inhalation of vapors/spray and contact with skin and eyes. Keep unnecessary personnel away. Local authorities should be advised if significant spills cannot be contained. Stay upwind. Keep people away from and upwind of spill/leak. Ventilate closed spaces before entering. Use personal protection recommended in Section 8 of the SDS.

Methods and materials for containment and cleaning up
Large Spills: Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb spillage with non-combustible, absorbent material.

Small Spills: Absorb in vermiculite, dry sand or earth and place into containers. Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not contaminate water.

7. Handling and storage

Precautions for safe handling
Avoid inhalation of vapors and contact with skin and eyes. The product is flammable, and heating may generate vapors which may form explosive vapor/air mixtures. Do not handle or store near an open flame, heat or other sources of ignition. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment.

Conditions for safe storage, including any incompatibilities
8. Exposure controls/personal protection

Occupational exposure limits

US. Workplace Environmental Exposure Level (WEEL) Guides

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methoxy-1-methylethyl acetate (CAS 108-65-6)</td>
<td>TWA</td>
<td>50 ppm</td>
</tr>
</tbody>
</table>

Biological limit values
No biological exposure limits noted for the ingredient(s).

Exposure guidelines
No exposure limits noted for ingredient(s).

US - California OELs: Skin designation
2-Methoxy-1-methylethyl acetate (CAS 108-65-6) Can be absorbed through the skin.

Appropriate engineering controls
Explosion proof exhaust ventilation should be used. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment. Provide easy access to water supply or an emergency shower.

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear chemical goggles.

Skin protection

Hand protection
Wear protective gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

Other
Wear appropriate chemical resistant gloves. Wear appropriate chemical resistant clothing. Protective shoes or boots. Structural firefighters protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations. Wear chemical protective equipment that is specifically recommended by the Personal Protective Equipment manufacturer.

Respiratory protection
If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use a NIOSH/MSHA approved air purifying respirator as needed to control exposure. Consult with respirator manufacturer to determine respirator selection, use, and limitations. Use positive pressure, air-supplied respirator for uncontrolled releases or when air purifying respirator limitations may be exceeded. Follow respirator protection program requirements (OSHA 1910.134 and ANSI Z88.2) for all respirator use.

Thermal hazards
Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke. Launder contaminated clothing before reuse. Remove and isolate contaminated clothing and shoes.

9. Physical and chemical properties

Appearance
Colorless liquid.

Physical state
Liquid.

Form
Liquid.

Color
Colorless.

Odor
Ether-like.

Odor threshold
Not available.

pH
Not available.

Melting point/freezing point
Not available.

Initial boiling point and boiling range
284 - 302 °F (140 - 150 °C)

Flash point
113.9 °F (45.5 °C)

Evaporation rate
Not available.

Flammability (solid, gas)
Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)
> 1.3

Flammability limit - upper (%)
< 7

Explosive limit - lower (%)
Not available.

Explosive limit - upper (%)
Not available.

Vapor pressure
3.71 mmHg, 154 °F (68 °C)
10. Stability and reactivity

Reactivity
The product is non-reactive under normal conditions of use, storage and transport.

Chemical stability
Stable under normal temperature conditions.

Possibility of hazardous reactions
Hazardous polymerization does not occur.

Conditions to avoid
Heat, flames and sparks. Electrostatic discharge. Contact with incompatible materials.

Incompatible materials
Strong oxidizing agents.

Hazardous decomposition products
Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion
May cause discomfort if swallowed.

Inhalation
Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

Skin contact
May cause skin irritation.

Eye contact
Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics
Symptoms can include irritation, redness, scratching of the cornea, and tearing.

Information on toxicological effects

Acute toxicity
May cause discomfort if swallowed.

Skin corrosion/irritation
May cause skin irritation.

Serious eye damage/eye irritation
Causes serious eye irritation.

Respiratory sensitization
Not classified.

Skin sensitization
Not a skin sensitizer.

Germ cell mutagenicity
No data available.

Carcinogenicity
None known.

Reproductive toxicity
Not classified.

Specific target organ toxicity - single exposure
Not classified.

Specific target organ toxicity - repeated exposure
Not classified.

Aspiration hazard
Not classified.

Chronic effects
None known.

12. Ecological information

Ecotoxicity
The product components are 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.

Persistence and degradability
No data available.

Bioaccumulative potential
No data available.
13. Disposal considerations

Disposal instructions
Dispose of this material and its container at hazardous or special waste collection point. Do not incinerate sealed containers. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.

Hazardous waste code
D001: Waste Flammable material with a flash point < 140 °F

Waste from residues / unused products
Dispose of in accordance with local regulations.

Contaminated packaging
Dispose of in accordance with local regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT
- UN number: UN1993
- UN proper shipping name: Flammable liquid, n.o.s. (2-Methoxy-1-methylethyl acetate)
- Transport hazard class(es): 3
- Subsidiary class(es): -
- Packing group: III
- Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.
- Special provisions: B1, B52, IB3, T4, TP1, TP29
- Packaging exceptions: 150
- Packaging non bulk: 203
- Packaging bulk: 242
- ERG number: 128

IATA
- UN number: UN1993
- UN proper shipping name: Flammable liquid, n.o.s. (2-Methoxy-1-methylethyl acetate)
- Transport hazard class(es): 3
- Subsidiary class(es): -
- Packaging group: III
- Environmental hazards: No
- Labels required: 3
- ERG Code: 3L
- Special precautions for user: Read safety instructions, MSDS and emergency procedures before handling.

IMDG
- UN number: UN1993
- UN proper shipping name: Flammable liquid, n.o.s., (2-Methoxy-1-methylethyl acetate)
- Transport hazard class(es): 3
- Subsidiary class(es): -
- Packaging group: III
- Environmental hazards: No
- Marine pollutant: No
- Labels required: 3
- EmS: F-E, S-E*
- Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.
- Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable.
- General information: Read safety instructions, MSDS and emergency procedures before handling.

15. Regulatory information

US federal regulations
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.
CERCLA/SARA Hazardous Substances - Not applicable.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.
CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.
Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
- Immediate Hazard: Yes
- Delayed Hazard: No
- Fire Hazard: Yes
- Pressure Hazard: No
- Reactivity Hazard: No

SARA 302 Extremely hazardous substance: No
SARA 311/312 Hazardous chemical: Yes
SARA 313 (TRI reporting): Not regulated.

Other federal regulations
- Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List: Not regulated.
- Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130): Not regulated.
- Food and Drug Administration (FDA): Not regulated.

US state regulations
- This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.
  - US. Massachusetts RTK - Substance List: Not regulated.
  - US. New Jersey Worker and Community Right-to-Know Act: Not regulated.
  - US. Rhode Island RTK: Not regulated.

US. California Proposition 65

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date: 21-September-2013
Revision date: -
Version #: 01
NFPA Ratings

Disclaimer
This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.