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Technical Data Sheet (TDS)

- Propylene Glycol Monomethyl Ether Acetate (PGMEA)

Revision Date: 20 FEB 2026

Product Name

Propylene Glycol Monomethyl Ether Acetate (PGMEA) 丙二醇单甲醚乙酸酯**CAS Number**: 108-65-6**MDL Number**: MFCD00008724**Formula**: $C_6H_{12}O_3$**Molecular Weight**: 132.16 g/mol**Form**: Colorless transparent liquid (Electronic Grade)**Odor**: Mild faint ether acetate odor

1. Product Overview

PGMEA is a high-purity **environmentally friendly glycol ether ester solvent** with low volatile organic compound (VOC) characteristics, belonging to the propylene glycol ether series. It has excellent solubility for various resins (acrylic, epoxy, polyurethane, polyester), polymers and organic compounds, and features moderate boiling point, slow evaporation rate, low toxicity and good compatibility with water and most organic solvents. As an electronic grade solvent, it has ultra-low impurity content, low metal ion and evaporation residue, meeting the strict requirements of semiconductor and microelectronic manufacturing processes. It is a core raw material widely used in electronic photoresist, precision cleaning, industrial coatings, printing inks and fine chemical synthesis, and is the preferred environmentally friendly solvent to replace traditional high-toxicity glycol ether solvents.

2. Technical Specifications (Complies with Electronic Grade Standard)

Item	Specification
Appearance	Colorless transparent liquid, no turbidity/precipitate/floating matter
Assay (PGMEA, GC)	≥ 99.5%
Water Content (Karl Fischer)	≤ 0.10%
Acidity (as CH_3COOH)	≤ 0.01%
Color (APHA, Pt-Co)	≤ 10
Density (25℃)	0.966 ~ 0.970 g/cm³
Refractive Index (n25°)	1.401 ~ 1.403
Flash Point (Closed cup)	46 ~ 48℃
Boiling Point (760 mmHg)	146 ~ 148℃
Heavy Metals (Pb, AAS)	≤ 1 ppm
Total Metal Ion Impurities	≤ 5 ppm
Evaporation Residue	≤ 0.001%
Solubility	Miscible with water, alcohols, ethers, esters, ketones, hydrocarbons
Volatility (n-BuAc=1)	0.15 (relative evaporation rate)
Stability	Stable under normal temperature and pressure, no polymerization

3. Product Advantages

1. **High Purity & Electronic Grade**: PGMEA content ≥99.8%, ultra-low water, acid and heavy metal impurities, meets semiconductor/photoresist manufacturing process requirements.
2. **Excellent Solubility**: Dissolves most industrial resins and polymers, suitable for high-solid-content coating/ink formulation, no delamination or precipitation.
3. **Environmentally Friendly & Low Toxicity**: Low VOC emission, compliant with EU REACH and US EPA environmental standards; significantly lower toxicity than ethylene glycol ether solvents, safe for occupational operation.
4. **Moderate Volatility**: Slow and uniform evaporation rate, avoids film forming defects (pinholes, orange peel) in coating/ink applications, improves product surface quality.
5. **Good Compatibility**: Miscible with water and most organic solvents, flexible formula adjustment, wide application range.
6. **Stable Chemical Properties**: No polymerization, no decomposition under normal storage and use conditions, consistent product performance between batches.

4. Application Fields

- **Electronic Manufacturing**: Core solvent for photoresist (positive/negative) in semiconductor wafer, LCD panel and PCB manufacturing; precision cleaning agent for electronic components and chip packaging.
- **Coating Industry**: Solvent for water-based/UV-curable coatings, industrial anti-corrosion coatings, automotive coatings and wood coatings; improves film leveling and adhesion.
- **Ink Industry**: Solvent for gravure ink, flexographic ink and screen printing ink; suitable for plastic, film and paper printing, good color development and printability.
- **Fine Chemicals**: Reaction solvent for organic synthesis and polymer polymerization; plasticizer intermediate and surfactant synthesis raw material.
- **Other Fields**: Cleaning agent for precision mechanical parts; diluent for adhesive and sealant; solvent for cosmetic raw material (industrial grade).

5. Usage Methods

Application Dosage & Formulation (Adjust according to process requirements)

- **Electronic Photoresist**: 60~80% of the total formulation, mixed with resin, photoinitiator and additives, stirred at room temperature for 1~2h (sealed, no dust).
- **Coating/Ink**: 20~50% of the total formulation, used as main/co-solvent, adjusted with other solvents to control evaporation rate and viscosity.
- **Precision Cleaning**: Dilute with deionized water (1:1~1:5) or use as pure solvent; ultrasonic cleaning for 5~10 min at 25~40℃.
- **Organic Synthesis**: 30~60% of the reaction system, used as reaction medium, suitable for normal temperature/heating reaction (≤80℃).

Key Operating Requirements

- Operate in a well-ventilated area, avoid open fire and high temperature (≥50℃) to prevent fire risk.
- Do not mix with strong oxidants, strong acids and strong bases directly to avoid chemical reactions.
- For coating/ink film forming, control the drying temperature at 60~100℃, avoid rapid heating to prevent film defects.
- Use anti-static equipment during electronic grade application, operate in clean room (Class 1000) to avoid dust contamination.

6. Packaging & Storage

Packaging Specifications (Anti-static, Sealed)

- 1 L HDPE plastic bottle (sealed, laboratory/R&D small-batch use)
- 5 L HDPE anti-static plastic drum (electronic grade, small-scale production)
- 25 L HDPE anti-static plastic drum (industrial/electronic grade, mass production)
- 200 L steel drum (inner coated with anti-corrosion layer, bulk industrial use)
- 1000 kg IBC tote (HDPE inner tank, anti-static, large-scale project use)
- Custom packaging (10/50 L) available for customer process requirements.

Storage Conditions

- **Core Requirement**: Store in a **cool, dry, well-ventilated and fire-proof warehouse** at 5~30℃; avoid direct sunlight, open fire and high temperature sources (heater, boiler).
- Keep the container tightly sealed (anti-static cap) to prevent solvent volatilization and moisture absorption; store in original packaging only.

7. Safety & Protection

- The product is a flammable liquid with mild irritation to skin and eyes; wear basic protective equipment during handling and operation, avoid direct contact and inhalation of vapor.
- **Recommended PPE**: Anti-static rubber gloves, chemical safety goggles, anti-static protective clothing, anti-slip shoes; wear a respiratory mask (organic vapor type) in poorly ventilated areas.
- **Fire Prevention**: Prohibit open fire, smoking and electrical sparks in the operation area; equip with dry powder/CO_2 fire extinguisher for fire emergency.
- **Accident Treatment**: