EASTMAN

Eastman EastaPure™
electronic chemicals

PM acetate

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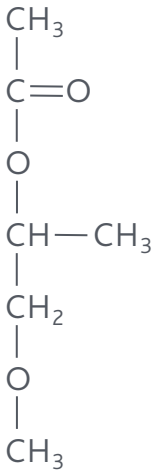
CAS: 108-65-6 (Propylene Glycol Monomethyl Ether Acetate)



Chemicals for the electronics industry

EastaPure™ PM acetate solvent is being offered for photoresist formulations. Solvent systems are necessary for spin coating photo-sensitive (photoresist) materials evenly onto a silicon wafer. This coating process is followed by drying and pattern development by lithographic processes. The multilayered patterns form integrated circuits on the semiconductor chips. High-purity (low-trace metals) specifications are required for the solvents to make acceptable semiconductor chips, and special handling and storage procedures are used to maintain these high-purity specifications. Also, special analytical tests are used to measure selected critical trace metals in parts-per-billion levels (see Table 1).

Table 1: Special properties[a] Upper limits for trace metals

Component	Upper Limit (parts/billion)
Aluminum (Al)	10
Barium (Ba)	10
Cadmium (Cd)	10
Calcium (Ca)	10
Chromium (Cr)	10
Cobalt (Co)	10
Copper (Cu)	10
Gallium (Ga)	10
Germanium (Ge)	10
Iron (Fe)	10
Lead (Pb)	10

Component	Upper Limit (parts/billion)
Lithium (Li)	10
Magnesium (Mg)	10
Manganese (Mn)	10
Nickel (Ni)	10
Potassium (K)	10
Silver (Ag)	10
Sodium (Na)	10
Strontium (Sr)	10
Titanium (Ti)	10
Zinc (Zn)	10

[a]*Listed in the* Sales Specification.

Eastman EastaPure™ PM acetate solvent can also be used in the edge-bead removal processes after spin coating. In addition to the special analytical results on some critical trace metals, Table 2 lists some typical properties and regulatory classifications for EastaPure™ PM acetate solvent.

Table 2: Typical properties[a]

Molecular weight	132.2
Assay as PM acetate, min.[b]	99.5%
Color (Pt-Co scale), max.[b]	10
Specific gravity @ 20/20°C[b]	0.968-0.971
Water content, max.[b]	0.05%
Acidity, as acetic acid	0.02%
Alcohol content, max.[b]	0.1%
Neat viscosity, cP @ 25°C	1.07
Refractive index @ 20°C	1.40
Hansen solubility parameters	
Nonpolar	7.6
Polar	2.7
Hydrogen bonding	4.8
Total	9.4
Boiling range @ 760 torr, °C	
Initial	140
Dry point	150
Freezing point, °C	−67
Flash point	
Setaflash (closed cup), °C	46
Autoignition temperature, °C	354
Evaporation rate	
Compared to n-Butyl acetate @ 1.0	0.40
Vapor pressure @ 20°C, mm Hg	3.70
Flammable limits in air, % by volume	
Lower @ 78°C	1.30
Upper @ 139°C	13.1

[a]*Properties reported here are typical of average lots. Eastman makes no representation that the material in any particular shipment will conform exactly to the values given.*
[b]*Listed in the* Sales Specification.

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Material Safety Data Sheets providing safety precautions, that should be observed when handling and storing Eastman products, are available online or by request. You should obtain and review the available material safety information before handling any of these products. If any materials mentioned are not Eastman products, appropriate industrial hygiene and other safety precautions recommended by their manufacturers should be observed.

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