

**EASTMAN**

**Eastman EastaPure™**  
electronic chemicals

PM acetate  
stabilized

# Eastman EastaPure™ electronic chemicals

## PM acetate stabilized

CAS: 108-65-6 (Propylene glycol monomethyl ether acetate)



### Chemicals for the electronics industry

EastaPure™ PM acetate stabilized solvent is being offered for photoresist formulations. Butylated hydroxy toluene (BHT) stabilizer is added to prevent formation of peroxides during storage, shipping, and processing. Solvent systems are necessary for spin-coating photosensitive (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<sup>a</sup> Upper limits for trace metals**

Component	Upper Limit (parts/billion)	Component	Upper Limit (parts/billion)
Aluminum (Al)	10	Lithium (Li)	10
Barium (Ba)	10	Magnesium (Mg)	10
Cadmium (Cd)	10	Manganese (Mn)	10
Calcium (Ca)	10	Nickel (Ni)	10
Chromium (Cr)	10	Potassium (K)	10
Cobalt (Co)	10	Silver (Ag)	10
Copper (Cu)	10	Sodium (Na)	10
Gallium (Ga)	10	Strontium (Sr)	10
Germanium (Ge)	10	Titanium (Ti)	10
Iron (Fe)	10	Zinc (Zn)	10
Lead (Pb)	10		

<sup>a</sup>Listed in the Sales Specification.

Eastman EastaPure™ PM acetate stabilized 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 stabilized solvent.

**Table 2: Typical properties<sup>a</sup>**

Molecular weight	132.2
Assay as PM acetate, min. <sup>b</sup>	99.5%
Color (Pt-Co scale), max. <sup>b</sup>	10
Specific gravity @ 20/20°C <sup>b</sup>	0.968–0.971
Water content, max. <sup>b</sup>	0.05%
Acidity, as acetic acid, max. <sup>b</sup>	0.02%
Alcohol content, max. <sup>b</sup>	0.1%
PM acetate, isomer, max. <sup>b</sup>	0.5%
BHT <sup>b</sup>	50–100 ppm
Neat viscosity, cP @ 25°C	1.07
Refractive index @ 25°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

<sup>a</sup>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.

<sup>b</sup>Listed in the Sales Specification.

# EASTMAN

## **Eastman Chemical Company Corporate Headquarters**

P.O. Box 431  
Kingsport, TN 37662-5280 U.S.A.

Telephone:  
U.S.A. and Canada, 800-EASTMAN  
(800-327-8626)  
Other Locations, (1) 423-229-2000  
Fax: (1) 423-229-1193

## **Eastman Chemical Latin America**

9155 South Dadeland Blvd.  
Suite 1116  
Miami, FL 33156 U.S.A.

Telephone: (1) 305-671-2800  
Fax: (1) 305-671-2805

## **Eastman Chemical B.V.**

Fascinatio Boulevard 602-614  
2909 VA Capelle aan den IJssel  
The Netherlands

Telephone: (31) 10 2402 111  
Fax: (31) 10 2402 100

## **Eastman (Shanghai) Chemical Commercial Company, Ltd. Jingan Branch**

1206, CITIC Square  
No. 1168 Nanjing Road (W)  
Shanghai 200041, P.R. China

Telephone: (86) 21 6120-8700  
Fax: (86) 21 5213-5255

## **Eastman Chemical Japan, Ltd.**

AIG Aoyama Building 5F  
2-11-16 Minami Aoyama  
Minato-ku, Tokyo 107-0062 Japan

Telephone: (81) 3-3475-9510  
Fax: (81) 3-3475-9515

## **Eastman Chemical Asia Pacific Pte. Ltd.**

#05-04 Winsland House  
3 Killiney Road  
Singapore 239519

Telephone: (65) 6831-3100  
Fax: (65) 6732-4930

[www.eastman.com](http://www.eastman.com)

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.

*Neither Eastman Chemical Company nor its marketing affiliates shall be responsible for the use of this information, or of any product, method or apparatus mentioned, and you must make your own determination of its suitability and completeness for your own use, for the protection of the environment and for the health and safety of your employees and purchasers of your products. NO WARRANTY IS MADE OF THE MERCHANTABILITY OR FITNESS OF ANY PRODUCT, AND NOTHING HEREIN WAIVES ANY OF THE SELLER'S CONDITIONS OF SALE.*

EastaPure and Eastman are trademarks of Eastman Chemical Company.

© Eastman Chemical Company, 2008.