

Eastman EastaPure™
electronic chemicals

EB solvent

Eastman EastaPure EB Solvent (ethylene glycol monobutyl ether) is a high boiling, slow evaporating, and water miscible solvent providing low trace metals content for sensitive electronic applications. High-purity specifications (low trace metals) are required for solvents in semiconductor chip manufacturing, and special handling and storage procedures are used to maintain the high-purity specifications. EastaPure EB Solvent is designed for photoresist applications/formulations, specifically for photoresist removers/strippers.

Special analytical tests are used to measure critical trace metals in parts-per-billion levels (Table 1). Listed in Table 2 are some typical properties and regulatory classifications for EastaPure EB solvent.

Table 1: Special properties,^a upper limits for trace metals

Component	Upper limit (parts/billion)
Aluminum (Al), ppb	
Barium (Ba), ppb	
Cadmium (Cd), ppb	
Calcium (Ca), ppb	
Chromium (Cr), ppb	
Cobalt (Co), ppb	
Copper (Cu), ppb	
Gallium (Ga), ppb	
Germanium (Ge), ppb	
Iron (Fe), ppb	
Lead (Pb), ppb	100 MAX
Lithium (Li), ppb	
Magnesium (Mg), ppb	
Manganese (Mn), ppb	
Nickel (Ni), ppb	
Potassium (K), ppb	
Silver (Ag), ppb	
Sodium (Na), ppb	
Strontium (Sr), ppb	
Titanium (Ti), ppb	
Tin (Sn), ppb	
Zinc (Zn), ppb	

^aListed in the Sales Specification

Table 2: Typical properties^a

Property	Typical value, units
Acidity as acetic acid	0.01 wt% max.
Assay	99.0 wt% min.
Autoignition temperature	238°C (460°F)
Azeotropes	
BP	98.8°C (209.8°F)
Wt% water	79.2 wt%
Blush resistance @ 80°F (26.7°C)	96% RH
Boiling point @ 760 mm Hg	
Initial	169°C (336°F)
Dry point	172.5°C (343°F)
Color Pt-Co	10 max.
Critical pressure	32 ATM
Critical temperature	326.8°C
Critical volume	400 mL/g.mol
Dilution ratio	
Toluene	3.4
VM&P Naphtha	2.1
Electrical resistance	<0.2 Megohms
Empirical formula	C ₆ H ₁₄ O ₂
Evaporation rate	
(<i>n</i> -butyl acetate = 1)	0.09
(ethyl ether = 1)	136
Expansion coefficient, per °C @ 20°C	0.00092
Explosive limits in air	
Lower @ 93°C	1.1 Vol%
Upper @ 135°C	12.7 Vol%
Fire point	70°C (158°F)
Flash point	
Tag closed cup	62°C (143°F)
Tag open cup	70°C (158°F)
Freezing point	-75°C (-103°F)
Hansen solubility parameters, [cal/cm ³] ^{1/2}	
Nonpolar	7.8
Polar	2.5
Hydrogen bonding	6.0
Total	10.2
Heat of combustion	-848.5 kcal/g.mol
Heat of vaporization	11060 cal/g.mol
Liquid heat capacity @ 25°C	65.49 cal/(g.mol)(°C)
Liquid viscosity @ 20°C	3.3 cP (mPa-s)
Max. incremental reactivity (MIR), g O ₃ /g VOC	2.9
Molecular weight	118.17
NFPA Classification 30	IIIA
Nitrocellulose solubility	Active
Refractive index @ 20°C	1.4193
Solubility	
in water, @ 20°C	Complete
Water in, @ 20°C	Complete
Specific gravity @ 20°C/20°C	0.902
Surface tension @ 20°C	26.6 dynes/cm
TLV PPM 2015	20
Vapor density (air = 1)	4.1
Vapor pressure	
@ 20°C	0.6 mm Hg
@ 55°C	0.97 KPa
Wt/Vol @ 20°C	0.9 kg/L (7.51 lb/gal)

^aPhysical properties are typical of average lots. Eastman makes no representation that the material in any particular shipment will conform exactly to the values given.



**Eastman Chemical Company
Corporate Headquarters**

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

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

www.eastman.com/locations

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