EASTMAN

Technical Data Sheet

Eastman™ Ethylene Glycol, Polyester Grade

Applications

- Chemicals & petrochemicals

Key Attributes

- Good Solvent Characteristics
- High boiling point
- Hygroscopic
- Moderate Viscosity
- Noncorrosive

Product Description

Eastman™ Ethylene Glycol, Polyester Grade is a high purity grade of ethylene glycol with excellent appearance and clarity. Eastman™ Ethylene Glycol, Polyester Grade is used for manufacturing polyester fibers, polyethylene terephalate (PET) resins, and other materials. End products include water and drink bottles, textiles, and carpet fiber. Eastman™ Ethylene Glycol is a clear, odorless, moderately viscous, hygroscopic, and high boiling liquid. Its properties make it useful for various applications including heat transfer fluid, antifreeze, and conditioning agent.

Typical Properties

Property	Typical Value, Units
General	
Acidity	
as Acetic Acid	0.002 wt % max.
Assay	99.9 wt % min.
Autoignition Temperature	410 °C (770 °F)
Boiling Point	
@ 760 mm Hg	197 °C (387 °F)
Color	
Pt-Co	5 max.
Critical Pressure	8200 kPa
Critical Temperature	446 °C
Critical Volume	0.187 L/gmol
Empirical Formula	$C_2H_6O_2$
Evaporation Rate	
(n-butyl acetate = 1)	< 0.01
Expansion Coefficient, per °C	
@ 10-40°C	0.00070
Explosive Limits in Air	
Lower	3.10 Vol %
Upper	42.0 Vol %
Flash Point	
Closed Cup	111 °C (232 °F)
Freezing Point	-13 °C (9 °F)
Hansen Solubility Parameters	
Hydrogen Bonding	26.0 $MPa^{½}$
Nonpolar	17.0 $MPa^{½}$
Polar	11.0 $MPa^{½}$
Total	33 $MPa^{½}$
Heat of Combustion	-1053 kJ/g·mol
Heat of Vaporization	

at Boiling Point	53.1 kJ/g·mol
Liquid Heat Capacity	
@ 25°C	150 J/(mol K)
Liquid Viscosity	
@ 25°C	17 cP (mPa·s)
Molecular Weight	62.07
Refractive Index	
@ 25°C	1.4307
Specific Gravity	
@ 20°C/20°C	1.1157
Solubility	
in Water, @ 20°C	Complete
Water in, @ 20°C	Complete
Surface Tension	
@ 20°C	48 dynes/cm
Vapor Density	
(air = 1)	2.1
Vapor Pressure	
@ 20°C	0.06 mm Hg
@ 55°C	1 mm Hg
Wt/Vol	
@ 25°C	1.11 kg/L (9.26 lb/gal)

Compatibility and Solubility

Miscible with water, alcohols, aldehydes.

Handling Precautions

Slight irritant to skin and eyes. Irritating in case of inhalation. Hazardous in case of ingestion. Ethylene Glycol is not compatible with oxidizing agents, strong acids, strong bases, aliphatic amines, isocyanates, chlorosulfonic acid, and oleum. Ethylene Glycol should be kept away from sources of ignition, smoking, and open flames.

Packaging

Bulk

Storage

If trace iron or color contamination is of concern, a stainless steel, aluminum, or epoxy liner storage vessel is recommended. A nitrogen blanket with slight positive pressure is recommended to prevent trace water or the accumulation of trace impurities through oxidation. The freezing point of ethylene glycol is -13°C, and heating or insulation is recommended at cold temperatures. Contact with rubber, zinc, copper, and tin are not recommended.

Comments

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.