HUNTSMAN

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Technical Bulletin

ETHYLENE GLYCOL – ANTIFREEZE GRADE

1,2-ethanediol; Ethylene glycol; Monoethylene glycol (MEG)

ETHYLENE GLYCOL is a straight-chain aliphatic compound terminated on both ends by a hydroxyl group. It is a clear, moderately viscous, hygroscopic liquid at room temperature.

$$HOCH_2CH_2OH$$

APPLICATIONS

- heat transfer agent
- deicing fluid
- freezing point depressant
- boiling point depressant

Ethylene glycol - antifreeze grade is designed to be used as the base for antifreeze formulations compounded to meet the requirements of the North American market.

SALES SPECIFICATIONS

Property	Specifications	Test Method*
Appearance	Clear and substantially free of suspended matter	ST-30.1
Acidity (as acetic), wt%	0.01 max.	ST-31.46, A
Ash, wt%	0.01 max.	ST-31.12
Chlorides, ppm	3 max.	ST-4.7
Color, Pt-Co	20 max.	ST-30.12
Ethylene glycol, wt%	95.0 min.	ST-45.1 (by difference) or ST-35.14
Water, wt%	0.5 max.	ST-31.53, 5

*Non-proprietary Methods of Test are available from Huntsman Corporation upon request.

ADDITIONAL INFORMATION

Regulatory Information

CAS Number	107-21-1; 111-46-6

See SDS for all regulatory information.

Typical Properties

Boiling point, mm Hg, °C (°F)	198 (388)
Flash point, PMCC, °C (°F)	118 (244)
Freezing point, °C (°F)	-13 (8)
Molecular weight	62
pH	6.5
Specific gravity, 20/20°C	1.12
Vapor pressure, mm Hg, 20°C (68°F)	0.1
Viscosity, cSt, 20°C (68°F)	19
VOC Content by ASTM D2369, %	<1
Water solubility	Complete

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PRODUCT SAFETY POLICY

It is the product safety policy of Huntsman Corporation to provide our customers with information on the safe handling and use of our products. The Safety Data Sheet (SDS) should always be read and understood thoroughly before handling the product and adequate safety procedures should be followed. Information on the toxicity, environmental and industrial hygiene aspects of our products may be found in the SDS. Precautionary measures include: use only with adequate ventilation; avoid breathing vapor, mist or gas; avoid contact with eyes, skin and clothing; keep container closed; wash thoroughly after handling.

HANDLING AND STORAGE

Ethylene glycol is a stable, non-corrosive chemical with high flash point. Since it is hygroscopic, storage vessels must be designed to minimize moisture pickup. Other possible contaminants are iron and oxygen. For longer term storage, or where iron contamination and color are objectionable, resin linings or stainless steel and aluminum vessels are recommended. Linings based on phenolic and epoxy resins are satisfactory. Zinc or zinc alloys should not be used in glycol service. For longer term color stability, it is recommended that the product be stored under an inert atmosphere.

Cast-iron or centrifugal pumps with stainless shafts and impellers are satisfactory. Rubber-lined or rubber-bound gaskets should be avoided. Flexible graphite filled or stainless steel double jacketed gaskets are usually effective larger gaskets. Stainless steel winding with flexible graphite filler piping gaskets performs well. Pipe thread lubricants based on corrosion inhibiting zinc compounds or a graphite based lubricant with aluminum are generally satisfactory; however, glycols are excellent penetrants and leaks may be present where hydrostatic testing has indicated a tight system. Therefore, the system should be rechecked after the glycol has been added.

Low pressure stainless steel steam coils in storage tanks and steam tracing of transfer lines may need to be provided in cases where low environmental temperatures may make pumping of the product difficult. Transfer or storage tanks can be readily cleaned by flushing with water and steam.

AVAILABILITY

Product is available in barges, tank cars and tank trucks. Certain government regulations may apply at the time of shipment. Samples are available by contacting our sample department at 1-800-662-0924.

Huntsman Corporation
Business Offices
10003 Woodloch Forest Dr.
The Woodlands, TX 77380
(281) 719-6000

Huntsman Advanced Technology Center
Technical Service
8600 Gosling Rd.
The Woodlands, TX 77381
(281) 719-7780

Samples 1-800-662-0924

www.huntsman.com

5032-0316