



Technical Datasheet

Diethylene Glycol (DEG)

Description

Diethylene glycol (DEG) with chemical formula of $(\text{CH}_2\text{CH}_2\text{OH})_2\text{O}$, is one of the most well-known organic solvents in the industry. DEG is soluble in water, alcohol, ether, acetone and ethylene glycol. Furthermore, DEG is miscible with water and organic solvents; In other words, it can be dissolved in them at any concentration. DEG is combustible and toxic. It can react with sulfuric acid, nitric acid, oxygen, hydrogen peroxide, perchloric acid and other strong acids. Having high absorption capability, DEG plays an important and vital role in moisture-sensitive products.

Application

Diethylene glycol (DEG) is widely used in various industries for different applications such as production of polyester resins, polyunsaturated and unsaturated plasticizers and polyurethane foam as an intermediate. DEG is also used for dehydration of natural and synthetic gases. DEG is widely used to remove impurities from gases. It has magnificent properties as a solvent; therefore, it is used in cases such as separation of aromatics and paraffinic hydrocarbons.

Other major applications of DEG are in producing of dyes, lubricants, cooking oils, hydraulic brake fluids, stamp inks, ballpoint pens and other organic compounds. In addition, DEG is used in personal care products such as skin creams, lotions, cosmetics and deodorants.

Advantages

- DEG is produced in much larger volumes than propylene and other glycols; therefore, its production cost is usually lower.
- DEG has the best heat transfer rate of all glycols. Compared to propylene glycol, a lower percentage of ethylene glycol is required when mixed with water to achieve the same protection at the freezing point.
- DEG has a significantly lower viscosity than propylene glycol, especially at sub-zero temperatures. It means
- DEG with lower viscosity require less pumping energy and also less cost to operate.

Typical Properties

Characteristic	Test Method	Unit	Value
PURITY	ASTM E - 202	WT.%	99.8 MIN
MONOETHYLENE GLYCOL	ASTM E - 202	WT.%	0.05 MAX.
TRIETHYLENE GLYCOL	ASTM E - 202	WT.%	0.05 MAX.
WATER CONTENT	ASTM E - 202	WT.%	0.05 MAX.
ACIDITY AS ACETIC ACID	ASTM D - 1613	PPM	50 MAX
ASH CONTENT	ASTM D - 254/A	PPM	50 MAX
Density S.G. (20/20 °C)	ASTM D - 891	-	1.1175-1.1195
COLOR	ASTM D - 1209	Pt - Co	10 MAX
DISTILLATION @ 760 MM-Hg			
IBP	ASTM D - 1078	°C	242 MIN
DP	ASTM D - 1078	°C	250 MAX

Packaging

Diethylene Glycol (DEG) is available in in 220 kg (220 Liter) Drums.