



## Ethylene Glycol Fluids, Industrial Grades

**Starfire Ethylene Glycol Fluids** are essentially colorless, odor free stable liquids completely miscible in water and many organic solvents with low viscosities and high boiling points. The difference in their application is dependant mainly to variations in physical properties. These properties include viscosity, hygroscopicity and boiling point. Ethylene Glycol (EG) is produced by hydration of ethylene oxide. As a result, minor amounts of Diethylene Glycol (DEG) and Triethylene Glycol (TEG) is produced as a byproduct. Additional amounts of DEG, TEG and Tetraethylene Glycol (TTEG) can be produced by reacting EG with additional ethylene oxide.

**Ethylene Glycol Fluids** are widely used in industry because of their, high boiling point, non-corrosiveness, freeze point depression, lubricating, hygroscopicity, solvent properties, and plasticizing. Their ease of reaction due to their alcohol groups makes them popular chemical intermediates in the formation of many products.

**Ethylene Glycol (EG)** is by far the largest volume glycol product. It is used in a variety of products such as, polyester fibers, plastics, coolants and antifreezes, and resins. EG has excellent humectant (hygroscopicity) making it well suited for treating paper, adhesives, printing inks, tobacco, textile fibers, paper, leather and cellophane.

**Diethylene Glycol (DEG)** is an important chemical intermediate in the manufacturing of resins, polyurethane, and plasticizers. It is also used as a humectant and is used in the same fields as EG. It serves as a natural gas dehydration agent.

**Triethylene Glycol (TEG)** is mainly used for its hygroscopic properties. TEG is commonly used as a liquid desiccant for the dehydration of natural gas, air conditioner dehumidifiers, and for the tobacco industry. TEG also finds uses in vinyl plasticizers, as an intermediate in the manufacturing of polyester resins and polyols, and as a solvent in many miscellaneous applications.

**Tetraethylene Glycol (TTEG)** has similar properties to the lower ethylene glycols, but has a higher boiling point and lower volatility. It is principally used, as the main solvent constituent is aromatic solvent extraction.

Typical Properties:	EG	DEG	TEG	TTEG
Color, ALPHA, max	10	15	25	100
Specific Gravity @20°C	1.1154	1.118	1.122	1.125
Purity, min, %	99.0	99.0	99.0	98.0
Other Glycol, max, %	1.0	1.0	1.0	2.0
Acidity, %wt max. (as acetic acid)	0.005	0.005	0.005	0.006
Water, % wt, max.	0.2	0.2	0.1	0.2
Ashes, %wt., max.	0.005	0.005	0.005	0.005
Boiling Point @ 760mm Hg, °C	197.6	245	287.4	314
Freezing Point, °C	-13	-8	-7.2	-5.6
Flash Point, °C	118	138	171	204