

# Technical Bulletin

## Pluriol® E 400 LS Polyethylene Glycol



Pluriol® E 400 is a polyethylene glycol that is 100% active. It is a clear, odorless, almost colorless, viscous liquid. Pluriol® E 400 is heat stable and hygroscopic, and has a low vapor pressure. It is soluble in water, acetone, ethanol, ethyl acetate and toluene.

### Applications:

**Chemical Intermediates:** The two primary hydroxyl groups of the polyethylene glycols may undergo typical alcohol reactions to form monoesters, diesters, ethers, acetals and amines.

**Resins:** In the production of alkyd resins, the substitution of polyethylene glycol for some of the glycerine produces resins of greater flexibility. Polyethylene glycol fatty esters are useful plasticizers for vinyl resins and other materials.

**Rubber:** Polyethylene glycols are used as lubricants for the air bags in pneumatic tires. Use to date has indicated no adverse effect on rubber.

**Pharmaceuticals:** Polyethylene glycols are particularly suitable for use in ointments. The following properties are desirable in this application: washability, low index of irritation, effective release of therapeutic agents, compatibility with medications and resistance to hydrolysis, rancidity and mold growth. Formulas incorporating polyethylene glycols are shown in the U.S. Pharmacopoeia.

**Cellulosic Materials:** The polyethylene glycols are suitable as paper softeners because of their humectant properties and low vapor pressure. They are also used as plasticizers in the manufacture of uncoated cellophane and cellulose sponges.

**Textiles and Leather:** Polyethylene glycols and their fatty acid derivatives are used for such varied purposes as emulsification, washing, lubrication, static prevention, pigment dispersion and softening.

**Printing:** Polyethylene glycols are used in the production of steam set printing inks. When used in combination with ethylene and diethylene glycols, they control the amount of moisture pickup in the setting of inks.

Specifications	
Color, APHA.	25 max.
Water, weight %	0.2 max.
pH (5% aqueous solution)	5.5 – 7.5
Solubility, (25% solution)	Clear

Typical physical properties	
Form	Liquid
Average molecular weight.	400
Specific gravity, 25°/25°C	1.124
Viscosity, CS at 99°C.	7.4
Pour point.	5°C
Cloud point, 1% aqueous.	>100°C
Foam height (Ross Miles, 0.1% aqueous at 50°C)	0 mm
Surface tension (0.1% aqueous)	67 dynes/cm at 25°C
Flash point (C.O.C).	238°C
Solubility in water	>10%

**Storage and Handling:**

Storage in mild steel is not recommended. Objectionable iron pickup with resultant discoloration develops, particularly after long storage periods. Discoloration can be avoided by storage in resin-lined steel, stainless steel, aluminum or glass containers. The melting or freezing range is 4 to 8°C and tanks may need to be equipped with heating coils to maintain these products in a fluid state. Storage temperatures should not exceed 49°C (120°F). Multiple cycles of heating the product to a fluid state in packages, such as drums or totes, opening the container causing it to be subjected to air, and then cooling the product, may cause the product and package to degrade.

**Shelf Life:**

BASF will endorse the results on the certificate of analysis for a period of up to two years from the date of manufacture for material in original, unopened, properly stored containers. Beyond two years, we recommend the quality of the material be confirmed prior to use, by retesting the certificate of analysis parameters.

Please refer to the Material Safety Data Sheet (MSDS) for this product for instructions on safe and proper handling and disposal.

Plurion® is a registered trademark for BASF in many countries.

**For More Information:***Order Placement*

To place orders for delivery in the United States or Canada, please call our toll free number (800) 443-6460.

**For Other Information**

Including product literature and Material Safety Data Sheets please call (734) 324-6101.

**Or Visit Our Website At:**

[www.performance.basf-corp.com](http://www.performance.basf-corp.com)

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