



## Technical Data Sheet

## ICC-Ethoxylated Products

**Trade Name:** PEG400

**Chemical Name:** POLY ETHYLENE GLYCOL 400

**Grade:** Chemical

**CAS Name:** poly ethylene (oxyethylene) glycol

Poly ethylene glycols (PEGs) are family of water-soluble linear polymers formed by the additional reaction of ethylene oxide (EO) with mono ethylene glycol (MEG) or diethylene glycol (DEG).

The generalized formula for polyethylene glycol is:  $H(OCH_2CH_2)_nOH$ , n: Average number of repeating ethylene oxide groups.

### Application

PEG400 is used in the pharmaceutical industry (e.g. in ointment, liquids and tableting) and the cosmetic industry (e.g. creams, lotions, pastes, cosmetic sticks, and soaps) and also used in the textile industry (e.g. cleaning and dyeing aids), in the rubber industry (e.g. lubricants and mold parting agents), and in ceramics (e.g. bonding agents and plasticizers).

### Storage and Handling

PEG400 is dispatched in polyethylene or corrugated steel, galvanized or carbon steel drums. PEG400 is stable for 2 years when stored in the original sealed containers in a cool and dry place. It is essential to ensure storage in a dry place because liquid PEGs are hygroscopic. Each time the containers are opened, they should be resealed to make them airtight. Liquid PEG should not be stored in internally lacquered containers because normal coatings are dissolved.

TEST	STANDARD TEST METHOD	RESULT
Appearance at 20°C	—	Clear liquid
Color at 25°C, APHA	ASTM D-1209	Max. 10
Average molecular weight, g/mol	Calculated	380-420
pH (5% in water)	ASTM D-1172	4.5-7.5
Density at 25°C, g/ml	ASTM D-1298	1.125±0.02
Hydroxyl value, mg KOH/g	ASTM D-4252	264-300
Water, percent	ASTM E-203	Max. 2.0
Viscosity at 25°C, cP	ASTM D-445	89±10

### Safety

For many applications, particularly in pharmaceuticals, cosmetics and foodstuffs packaging, the physiological safety is important. PEG400 is non-toxic and physiologically safe so no special safety precautions need to be taken when handling them.

The vapor pressure of PEG400 is so low that inhalation of relevant amounts is impossible.

PEG400 has no toxic or irritant effect on the skin. Because of the low toxicity it was possible to establish an exact LD50 resulting from skin penetration.