Technical Data Sheet

Polyglycol P-2000E

Polypropylene Glycol

General Information

The Dow Chemical Company is a science and technology-based company and one of the world's largest producers of polyalkylene glycols. Our worldwide research, manufacturing, and distribution includes facilities in Europe, North America, Latin America, and Asia-Pacific. With over 30 years experience in polyglycol manufacturing, the industry's broadest product line, and a leadership position in new product development, Dow is uniquely positioned to meet the needs of a diverse global marketplace. This success results from expanding our customers' markets through combined customer formulation knowledge and Dow alkoxylation expertise in joint development applications. Together we focus these resources to help ensure success for our customers and their products.

Sustainability Attribute:

Returna™
Advancing biodegradability with Dow

Polypropylene Glycols

- CAS # 025322-69-4
- INCI/CTFA nomenclature PPG-26

Polyglycol P-2000E is a linear polymer produced by controlled, catalyzed reaction between propylene oxide and water. The letter P and the number 2000 indicate that the polymer is propylene oxide based and that the approximate average molecular weight is 2000.

PPG P-2000E, as this product is also known, is a clear, viscous liquid at room temperature. It has a higher pour point and, unlike the lower molecular weight PPGs, is partially soluble in water at 25°C. It loses its water solubility at higher temperatures.

Like all polypropylene glycols, Polyglycol P-2000E is soluble in all proportions with any organic solids and liquids, the main exception being long chain aliphatic hydrocarbons. Polyglycol P-2000E possesses excellent lubricity and has a low vapour pressure. Under extreme heating conditions it does not form coke nor does it form a varnish. Decomposition products are low boiling products that are either lost as volatiles or soluble in the polypropylene glycol.

Applications

Polyglycol P-2000E is suitable as an antifoam agent in latex formulations, paper and pulp processing, emulsion paints, sugar beet processing, fermentation vats in the manufacture of various products. Other applications include its use as a cosmetic ingredient, a mould release agent, an intermediate for e.g. resin and as plasticizer. Polyglycol P-2000E can also be used as lubricant base, its intrinsic lubricity may be further enhanced by the use of additives.

Typical Physical Properties

Property	Unit	Typical Value	Test Method[1]
Flash point	°C	> 150	ASTM D 92 (COC)
Viscosity @ 25°C	cSt	320	ASTM D 445/D 446
@ 100°C	cSt	24	
Specific gravity @ 25°C/25°C	g/cm^3	1.002	ASTM D 892
Pour point	°C	-31	ASTM D 97

1. ASTM: American Society for Testing and Materials

Notice: The information and data contained herein do not constitute sales specifications. No liability, warranty or guarantee of final product performance is created by this document.

Safe Use and Handling

Dow polypropylene glycols are relatively easy to store and handle. They can be stored in bulk in steel tanks, which should be padded with nitrogen or any other inert gas to prevent air from entering the tank. If slight iron pickup and color changes cannot be tolerated then the storage tanks should be constructed from stainless steel.

To ease the handling of polypropylene glycols somewhat, higher storage temperatures should be considered to keep the viscosity of the polyglycols within limits suitable for the pumping equipment available. The maximum storage temperature should not exceed 40°C to avoid the risk of product degradation. Pipelines may also require insulation and/or tracing to maintain suitable product temperatures.

Although PPGs have very low pour points, especially Polyglycols P-2000E and P-4000 become very viscous at low temperatures. Consequently it is recommended that they be stored in tanks which are well insulated and heated. Externally located heating devices are preferable to internally sited ones. With external heating the risk of accelerating product deterioration is greatly reduced.

Similarly drums should be stored under cover, or preferably inside a warehouse, to maintain the temperature of the polyglycol at a level which allows for easy discharge.

The shelf life of properly stored bulk and unopened drums is, at least, 24 months.

Toxicological Information

Polyglycols P-2000E and P-4000E are considered to be low in acute oral toxicity, whereas Polyglycols P-400E, P-600E, P-1000E and P-1200E are considered to be low to moderate in acute oral toxicity.

They cause no significant skin irritation or sensitization and are not reportedly absorbed in any appreciable amount. Direct contact with the eyes may cause slight temporary irritation, similar in character to that caused by mild soap. Consequently it is recommended that eye protection should be employed and viewed as the minimum level of safety equipment required when working with polypropylene glycols.

Product Stewardship

Dow encourages its customers and potential users of polypropylene glycols to review their applications from the standpoint of human health and environmental aspects. To ensure polypropylene glycols are not used in ways for which it is not intended or tested, Dow literature, including Material Safety Data Sheets, should be consulted prior to the use. To obtain a polypropylene glycol Safety Data Sheet, contact your local Dow representative or please visit us at www.dow.com.

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