

PROPYLENE OXIDE

TECHNICAL GRADE

Last revision 2008

Chemical Name: Molecular formula: C₃H₆O
 CAS No.: 75-56-9
 Abbreviation: PO

General Description:

Propylene oxide is a chemical intermediate used to produce a wide range of commercial and industrial products including polyether polyols, propylene glycols and propylene glycol ethers.

Polyether polyols consume the largest share of propylene oxide using between 60–70% of the total global volume. Propylene glycols consume another 20% of the total, and propylene glycol ethers consume about another 5%. The remaining share is employed by other propoxylated or specialty organic compounds.

Propylene oxide is obtained through propylene hydro chlorination. It is soluble in water and miscible with acetone, benzene, carbon tetrachloride, diethyl ether, and ethanol. Propylene oxide is a volatile, clear, colorless, extremely flammable liquid with an ether-like odor.

Technical Quality Conditions:

Characteristics	MU	Values	Test methods
Propylene oxide, min.	%	99.9	ILL-033/3-01-20
Aldehydes and ketones(propioaldehyde), max.	%	0.01	STAS 11600
Water (Karl-Fischer), max.	%	0.01	ASTM E 203
Acidity (CH ₃ COOH), max.	%	0.005	ASTM D 1613
Hazen color, max.	Hazen units	10	SR ISO 2211

Specific Properties:

Density at 20°C, g/cm ³	0.828
Boiling point at 760 mmHg	34°C
Ignition temperature	-37 °C
Flammability	Extremely flammable

The specific properties present approximate values and contain general information, without being part of the technical quality conditions.

Main Applications:

- polyethers polyols;
- propylene glycol;
- glycol ethers;
- specialty chemicals;
- brake fluid;
- fire fighting agents;
- synthetic lubricants;
- oil field drilling chemicals, etc.



Shipping Information:

- carbon steel tank cars, railroad tanks or tank trucks, protected against corrosion.

Storage:

The product should be stored in tightly closed steel containers (under nitrogen blanket), provided with grounding (to avoid generation of electrostatic discharges), in cool areas, well vented, at temperature not higher than 20°C, far from heat sources and from inconsistent materials. Should be preferred the storage in open air during a period of no longer than three months, without affecting the product quality. If required, it can be used protected containers. The storage tanks should be provided with safety valves with automatic closing, vacuum gauges and flame trap.

Safety Considerations:

Please refer to the product Material Safety Data Sheet (MSDS) offering customers help to better satisfy their particular handling, safety and disposal needs and those that may be required by locally applicable health and safety regulations.

Warning:

The product is moderately toxic (maximum permissible concentration 100 mg/m³ air), flammable and explosive (self – ignition temperature 465°C, explosion limits 2.8-36.8% vol. in air).

Attention:

Information contained in this document is provided to the best of our knowledge and experience.

Please contact OLTCHIM to see if the document has been revised.

Important:

For a better suitability of the product for your particular purpose, tests are recommended prior product use. You are advised to make your own determination as to safety, appropriate manner of handling, storage, use and disposal. All the information contained in this product technical sheet is offered for your consideration, investigation and verification. The data is presented in good faith and is believed to be reliable. You should not consider the descriptions, information, data or design as a part of our terms and conditions of sale. We expressly disclaim responsibility or liability for any loss, damage or expense arising out of non-compliance with the information provided herein.