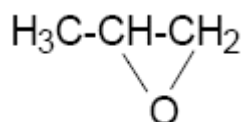


Technical Bulletin**Propylene Oxide – Handling and Storage Considerations**

Generic: oxirane, methyl; alkylene oxide

STRUCTURE**DESCRIPTION**

A colorless liquid with an ether-like odor.

APPLICATIONS

A chemical intermediate used in the production of polyether diols and triols for the polyurethane industries; mono, di, tri and polypropylene glycols; and surface-active agents.

ADDITIONAL INFORMATION

Regulatory Information	
DOT Classification	Propylene Oxide, Class 3, UN1280, PG I, RQ
Freight Classification	Propylene Oxide
OSHA Classification	Suspected Carcinogen
HMIS Code	3-4-2
WHMIS Classification	B2, D1B, D2A, D2B
CAS Number	75-56-9

Chemical Control Laws	
Australia, AICS	Listed
Canada, DSL	Listed
Europe, EINECS	Listed
Japan, METI	Listed
United States, TSCA	Listed

Physical Properties	
Chlorides (inorganic) as Cl, ppm	0.1
Distillation range, 760 mmHg, °C, IBP	33.0 min.
Distillation range, 760 mmHg, °C, DP	37.0 max.
Exposure limits in air, vol.%	2.1 – 38.5
Flash point, PMCC, °C (°F)	-37 (-35)
Freezing point, °C (°F)	-104 (-155)
Heat of vaporization, cal/g, 760 mmHg	89
Molecular weight	58
Refractive index, 20°C	1.3657
Residual odor	None
Specific gravity, 20/20°C	0.830
Specific heat, 20°C, cal/g/°C	0.51
Vapor pressure, mmHg, 20°C (68°F)	455
Viscosity, cP, 20°C (68°F)	0.33
Water solubility, %	> 10
Weight, lb/gal, 20°C	6.92

PRODUCT SAFETY POLICY

It is the product safety policy of Huntsman to provide our customers with information on the safe handling and use of our products. The Material Safety Data Sheet (MSDS) should always be read and understood thoroughly before handling the product and adequate safety procedures should be followed. Information on the toxicity, environmental and industrial hygiene aspects of our products may be found in the MSDS.

HANDLING PRECAUTIONS

Propylene oxide is a highly flammable material and certain precautions must be exercised in handling this product. It is recommended that all operating personnel be made cognizant of these precautions and that they be thoroughly instructed in the proper handling procedures for this material.

An inert gas atmosphere or “pad” is required over propylene oxide during transfer or storage to prevent air from entering the system and forming explosive mixtures. The more common inert gases, such as nitrogen and methane, are recommended for this purpose. The flash point of propylene oxide is <-35°F and the explosive limits are 2.1 to 38.5 vol. % in air.

It is recommended that all equipment used in propylene oxide service be electrically grounded and that all electrical equipment be explosion-proof.

Propylene oxide should be stored, handled, or used only in well ventilated areas. Prolonged exposure to vapor of even low concentrations can result in nausea and vomiting. High concentrations may produce irritation of the eyes, lungs, and mucous membranes. Proper training of employees in the use of protective equipment can help eliminate potential health problems. For additional information on the safe handling of propylene oxide, consult the Material Safety Data Sheet.

STORAGE PRECAUTIONS

Ordinary carbon steel storage tanks and piping are generally satisfactory for handling propylene oxide. No copper or other acetylide-forming metal should be in contact with propylene oxide.

Storage tanks should be insulated where practicable and a water spray system should be provided. Storage tanks should be designed for a working pressure of at least 50 psig and conform to ASME, API, and local codes and specifications.

Since there is a tendency for propylene oxide to polymerize on prolonged storage and at elevated temperatures, storage tanks should also be designed so that they can be easily cleaned. Propylene oxide storage facilities are readily cleaned by flushing the system with hot water (180°F) for several hours. A rusty or otherwise contaminated surface may accelerate polymerization of propylene oxide.

Welded construction is preferred; however, flanged joints may be gasketed with a graphite impregnated asbestos material. Either rotary or centrifugal pumps are suitable for propylene oxide transfer.

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For Your Protection**HEALTH AND SAFETY**

*The Safety and Health information in this data sheet does not contain sufficient detail for safe handling in all cases. For detailed safety and health information refer to the **Material Safety Data Sheet** for this product.*

EMERGENCY CALLS: Huntsman Emergency Response Center: 800-328-8501, 409-722-8381 / CHEMTREC - Spills, Leak, Fire 800-424-9300 (in USA and Canada)

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