Product Safety Assessment

Polyglycol PT Series Products/ FLUENT Brand Polyglycols/
Polyglycol CP 1000K


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**Names**
- CAS No. 25791-96-2
- FLUENT-LUB™ 302 Polyglycol
- FLUENT-MAT™ 602 Polyglycol
- Polyglycol PT Series Products
- Glycerol propylene oxide
- Poly(oxypropylene) glycerol triether
- Polyglycol CP 1000K
- Polyglycol PT-250
- Polyglycol PT-700
- Polyglycol PT-3000
- Polyglycol PT-4800

**Product Overview**
- Polyglycol PT Series products are clear or colorless liquid polyalkylene glycols with a sweet or ether odor.¹ For further information, see Product Description.
- Polyglycol PT Series products are used as intermediates in urethane and other reactions, as foam control agents and co-solvents.² For further information, see Product Uses.
- Polyglycol PT Series products are produced, distributed, and stored in closed systems. Personnel working with these products in manufacturing operations could be exposed during maintenance, sampling, testing, or other procedures. Consumers could be exposed to very low levels of these products in certain personal care products.¹ For further information, see Exposure Potential.
- Eye contact with this product may cause slight, temporary irritation. Slight, temporary corneal injury may occur for Polyglycol PT 4800. Skin contact is essentially non-irritating and even prolonged contact would not result in absorption of harmful amounts. At room temperature, inhalation exposure to vapor is minimal. This product has very low toxicity if swallowed.¹,³ For further information, see Health Information.
- The Polyglycol PT Series are non-volatile (do not evaporate) and vary in water solubility. These products are expected to slowly and completely biodegrade under environmental conditions, and to be efficiently removed during treatment biological wastewater-treatment facilities. They are not likely to accumulate in the food chain and are practically non-toxic to aquatic organisms on an acute basis.¹ For further information, see Environmental Information.

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• Polyglycol PT Series products are thermally stable at recommended storage and normal use conditions. Exposure to elevated temperature can cause these products to decompose, creating pressure build-up in closed systems. Avoid contact with oxidizing materials, strong acids, and strong bases. For further information, see Physical Hazard Information.

Manufacture of Product

• **Locations** – The Dow Chemical Company and its foreign affiliates manufacture Polyglycol PT Series products in facilities in Freeport, Texas, USA and in Europe.

• **Process** – The Polyglycol PT Series products are glycerine-initiated materials reacted with propylene oxide. Since glycerine (CAS No. 56-81-5) has three –OH groups, the copolymer can grow from any or all of the active sites. The reaction is shown below.

![Reaction Diagram]

Product Description

Polyglycol PT Series products are glycerine-initiated materials reacted with propylene oxide that are clear or colorless liquids with a sweet or ether odor. Product numbers correspond to the approximate average molecular weight of the polymer.

Polyglycol PT Series products vary in water solubility, with lowest molecular weight product being completely soluble in water and the highest molecular weight products being essentially insoluble in water. Polyglycol PT Series products are soluble in many organic solvents and remain functional over a wide pH range.

Product Uses

Polyglycol PT Series products are used as intermediates in urethane and other reactions, as foam control agents and co-solvents.

Exposure Potential

Polyglycol PT Series products are used in the production of industrial and consumer products. Based on the uses for this product, individuals could be exposed through:

• **Workplace exposure** – Exposure can occur either in facilities that manufacture Polyglycol PT Series products or in the various industrial or manufacturing facilities that use these products. These products are produced, distributed, stored, and consumed in closed systems. Those working with Polyglycol PT Series products in manufacturing operations could be exposed during maintenance, sampling, testing, or other procedures. Each manufacturing
facility should have a thorough training program for employees and appropriate work processes, ventilation, and safety equipment in place to limit exposure. See Health Information.

- **Consumer exposure to products containing Polyglycol PT Series Products** – Dow does not sell Polyglycol PT Series products for direct consumer use, but these products are used in several industrial/commercial processes. Always read and follow product label instructions before use. See Health Information.

- **Environmental releases** – In the event of a spill, the focus is on containing the spill to prevent contamination of soil, surface water, or groundwater. For small spills, Polyglycol PT Series products should be absorbed with materials such as sand or dirt. Polyglycol PT Series products are non-volatile and vary in water solubility. When introduced to water, Polyglycol PT Series polymers will tend to remain dissolved in, and transported with, the water to which they are emitted. These products will tend to adsorb to soil and sediment particles. These products will biodegrade under environmental conditions, with rate of degradation generally decreasing with increased molecular weight. These substances will be efficiently removed during treatment in biological wastewater-treatment facilities. See Environmental, Health, and Physical Hazard Information.

- **Large release** – Industrial spills or releases are infrequent and generally contained. If a large spill does occur, the product should be captured, collected, and reprocessed or disposed of according to applicable governmental requirements. Spilled material may cause a slipping hazard. See Environmental, Health, and Physical Hazard Information.

- **In case of fire** – Deny any unnecessary entry into the area and consider the use of unmanned hose holders. Use water spray or fog, carbon-dioxide or dry-chemical extinguishers, or foam to fight the fire. Firefighters should wear positive-pressure, self-contained breathing apparatus (SCBA) and protective firefighting clothing. Follow emergency procedures carefully. See Environmental, Health, and Physical Hazard Information.

For more information, request the Safety Data Sheet from the Dow Customer Information Group.

**Health Information**

Health information for Polyglycol PT Series products is summarized on the relevant Safety Data Sheets. It is important to note that health risks associated with individual products may vary based on their formulation or intended use. The Safety Data Sheet is the preferred source for specific health information. These products may also contain minor components or additives that have additional health risks. An overview of health information for these products appears below.

- **Eye contact** – Contact may cause slight, temporary eye irritation. Slight, temporary corneal injury may occur with Polyglycol PT 4800 only.

- **Skin contact** – Contact is essentially nonirritating to the skin. Contact with heated product may cause thermal burns. Prolonged contact is unlikely to result in absorption of harmful amounts.

- **Inhalation** – At room temperature, exposure to vapor is minimal due to low volatility; a single exposure is not likely to be hazardous. Vapor from heated product or mist may cause respiratory irritation.

- **Ingestion** – These products have low toxicity if swallowed. Harmful effects are not anticipated from swallowing small amounts.

For more information, request the Safety Data Sheet from the Dow Customer Information Group.
Environmental Information

Polyglycol PT Series products are non-volatile (do not evaporate) and vary from miscible to insoluble in water from the lowest to the highest molecular weight. If released into water, Polyglycol PT Series polymers will tend to remain dissolved in, and transported with, the surface or groundwater to which they are emitted. These products will tend to adsorb to soil or sediment particles, with increased degree of adsorption with increased molecular weight. Polyglycol PT Series products are unlikely to persist in the environment, as they are shown to be readily or inherently biodegradable according to Organisation for Economic and Co-operation and Development (OECD) test guidelines, and generally exhibit decreased rate of degradation with increased molecular weight. All of these products are expected to biodegrade under environmental conditions, and to be efficiently removed during treatment in biological wastewater-treatment facilities.

These products are not expected to accumulate in the food chain (low bioconcentration potential) and are practically non-toxic to aquatic organisms (LC₅₀/EC₅₀ >100 mg/L for the most sensitive species tested) on an acute basis. Thus, the Polyglycol PT Series products are not regarded as exhibiting persistent, bioaccumulative, and toxic (PBT) or very persistent and very bioaccumulative (vPvB) properties.

For more information, request the Safety Data Sheet from the Dow Customer Information Group.

Physical Hazard Information

Polyglycol PT Series products are thermally stable under recommended storage and normal use conditions, but can decompose at elevated temperatures. Generation of gas during decomposition can cause pressure build-up in closed systems. Decomposition products may include carbon dioxide, alcohols, ethers, hydrocarbons, ketones, and polymer fragments.

Avoid contact with oxidizing materials, strong acids, and strong bases. Avoid unintended contact with isocyanates.

Spilled material may cause a slipping hazard.

For more information, request the Safety Data Sheet from the Dow Customer Information Group.

Regulatory Information

Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of Polyglycol PT Series products. These regulations may vary by city, state, country, or geographic region. Information may be found by consulting the relevant Safety Data Sheet or Contact Us.

Additional Information

- Request the relevant Safety Data Sheet from the Dow Customer Information Group (www.dow.com/assistance/dowcig.htm)
- Contact Us (www.dow.com/ucon/contact/index.htm)
For more business information about Polyglycol PT Series products, visit the web site for Dow Polypropylene Glycols and Copolymers at www.dow.com/polyglycols/ppgc/.

References

1 Polyglycol PT 4800 Polymer Material Safety Data Sheet, The Dow Chemical Company
3 Polyglycol PT 250 Polymer Material Safety Data Sheet, The Dow Chemical Company
NOTICES:

As part of its 2015 Sustainability Goals, Dow has committed to make publicly available safety assessments for its products globally. This product safety assessment is intended to give general information about the chemical (or categories of chemicals) addressed. It is not intended to provide an in-depth discussion of health and safety information. Additional information is available through the relevant Safety Data Sheet, which should be consulted before use of the chemical. This product safety assessment does not replace required communication documents such as the Safety Data Sheet.

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