Product Safety Assessment

Polyglycol P Series Polymers / FLUENT Brand Polyglycols

Product Safety Assessment documents are available at www.dow.com/productsafety/finder/.

Select a Topic:
- Names
- Product Overview
- Manufacture of Product
- Product Description
- Product Uses
- Exposure Potential
- Health Information
- Environmental Information
- Physical Hazard Information
- Regulatory Information
- Additional Information
- References

Names
- Antifoam Agent D47
- CAS No. 25322-69-4
- FLUENT-BRAKE™ 100 Polyglycol
- FLUENT-BRAKE 400 Polyglycol
- FLUENT-CANE™ 114 Polyglycol
- FLUENT-CANE 171 Polyglycol
- FLUENT-FAX™ 214 Polyglycol
- FLUENT-LUB™ 309 Polyglycol
- FLUENT-LUB 312 Polyglycol
- FLUENT-LUB 314 Polyglycol
- FLUENT-MAT™ 600 Polyglycol
- FLUENT-MAT 609 Polyglycol
- FLUENT-MAT 612 Polyglycol
- FLUENT-MAT 614 Polyglycol
- Polyglycol P Series Polymers
- Polypropylene glycol
- Poly(oxypropylene)
- Polyglycol P-390
- Polyglycol P-400E
- Polyglycol P 400LPH
- Polyglycol P-425
- Polyglycol P-500
- Polyglycol P-600
- Polyglycol P-600E
- Polyglycol P 750E
- Polyglycol P-1000
- Polyglycol P-1000E
- Polyglycol P-1000TB
- Polyglycol P-1200
- Polyglycol P-1200E
- Polyglycol P-2000
- Polyglycol P-2000C
- Polyglycol P-2000E
- Polyglycol P-3000E
- Polyglycol P-3000TB
- Polyglycol P-4000
- Polyglycol P-4000E

Product Overview
- Polyglycol P Series Polymers are liquid polyalkylene glycols that are colorless in appearance with a mild, sweet odor. For further information, see Product Description.
- Polyglycol P Series Polymers are used as antifoam agents in a wide variety of industries, including latex formulations, paper and pulp processing, emulsion paints, and food production. They may also be used as mold-release agents, and intermediates for resins, plasticizers, and lubricant bases. For further information, see Product Uses.
- Polyglycol P Series Polymers 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 foods and personal-care products. For further information, see Exposure Potential.

® Trademark of The Dow Chemical Company (“Dow”) or an affiliated company of Dow
Eye contact may cause slight temporary irritation. Skin contact is essentially nonirritating and even prolonged contact would not result in absorption of harmful amounts. At room temperature, inhalation exposure to vapor is minimal. This product has low toxicity if swallowed. For further information, see Health Information.

Polyglycol P Series Polymers are non-volatile (do not evaporate) and vary from miscible to insoluble in water from the lowest to the highest molecular weight products. These products will biodegrade under environmental conditions, and will be efficiently removed during treatment in 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. For further information, see Environmental Information.

Polyglycol P Series Polymers are thermally stable at recommended storage and normal use conditions. Exposure to elevated temperature can cause this product to decompose, creating pressure build-up in closed systems. Avoid contact with strong acids, strong bases, and strong oxidizers. For further information, see Physical Hazard Information.

Manufacture of Product

Locations – The Dow Chemical Company and its foreign affiliates manufacture Polyglycol P Series Polymers in facilities in the USA and in Europe.

Process – The polypropylene glycols that comprise the Polyglycol P Series Polymers are homopolymers of propylene oxide. The reaction is shown below.

Product Description

Polyglycol P Series Polymers are polypropylene glycols that are colorless in appearance with a mild, sweet odor. Product numbers correspond to the approximate average molecular weight of the polymer.

Polyglycol P Series Polymers vary in water solubility, with lower molecular weight products being completely soluble in water and higher molecular weight products being partly to insoluble in water. All Polyglycol P Series Polymers are soluble in all proportions with most organic liquids.

Product Uses

Lower molecular weight Polyglycol P Series Polymers are used as dust adhesive fluids, solvent/couplers for inks and pesticide formulations, resins, fatty acid esters, lubricants, metalworking fluids, and plasticizers.

Higher molecular weight products are used as antifoam agents in latex formulations, paper and pulp processing, emulsion paints, sugar-beet processing, and fermentation vats in the manufacture of various products. They may also be used as mold-release agents, and intermediates for resins, plasticizers, and lubricant bases.
Exposure Potential

Polyglycol P Series Polymers 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 P Series Polymers or in the various industrial or manufacturing facilities that use these products. They are produced, distributed, stored, and consumed in closed systems. Those working with Polyglycol P Series Polymers 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 P Series Polymers** – Dow does not sell Polyglycol P Series Polymers for direct consumer use, but these products are used in several industrial/commercial processes. Polyglycol P Series Polymers used for food contact comply with applicable standards set by the U.S. Food and Drug Administration (FDA) and European Union (EU) Directives concerning food contact. 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 spread of contamination to soil, surface water, or groundwater. For small spills, Polyglycol P Series Polymers should be absorbed with materials such as sand or dirt. These products have low volatility and vary in water solubility. When introduced to water, Polyglycol P Series Polymers will tend to remain dissolved in, and transported with, the water to which they are emitted. 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 P Series Polymers 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 materials 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 irritation. Corneal injury is unlikely. Vapor or mist may cause eye irritation.

- **Skin contact** – Contact is essentially nonirritating to 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 P Series Polymers 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 P Series Polymers will tend to remain dissolved in, and transported with, the water to which they are emitted. These polypropylene glycol substances will tend to adsorb to soil or sediment particles, with increased degree of adsorption with increased molecular weight. Polyglycol P Series Polymers are unlikely to persist in the environment. Based on stringent Organisation for Economic and Co-operation and Development (OECD) test guidelines, those products having molecular weight up to approximately 2,000 g/mole are considered readily biodegradable (>65% biodegraded in 28 days per OECD 301F test), while higher molecular weight products are considered as inherently biodegradable. All polypropylene glycol 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 (LC$_{50}$/EC$_{50}$ >100 mg/L for the most sensitive species tested) on an acute basis. Thus, the polypropylene glycol 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 P Series Polymers 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 aldehydes, alcohols, ethers, hydrocarbons, ketones, organic acids, 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 P Series Polymers. 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](http://www.dow.com/assistance/dowcig.htm))
- Contact Us ([www.dow.com/ucon/contact/index.htm](http://www.dow.com/ucon/contact/index.htm))

For more business information about Polyglycol P Series Polymers, visit the web site for Dow Polypropylene Glycols and Copolymers at [www.dow.com/polyglycols/ppgc/](http://www.dow.com/polyglycols/ppgc/).

References

1. Polyglycol P-600E Propylene Glycol, Product Information, The Dow Chemical Company, Form No. 118-01454-0703
2. Polyglycol P-3000E Propylene Glycol, Product Information, The Dow Chemical Company, Form No. 118-01495-0703
3. Polyglycol P-400E Polymer Safety Data Sheet, The Dow Chemical Company
4. Polyglycol P-4000E Polymer 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.

The information herein is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Dow be responsible for damages of any nature whatsoever resulting from the use of or reliance upon the information herein or the product to which that information refers.

Nothing contained herein is to be construed as a recommendation to use any product, process, equipment or formulation in conflict with any patent, and Dow makes no representation or warranty, express or implied, that the use thereof will not infringe any patent.

NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREBUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.

Dow makes no commitment to update or correct any information that appears on the Internet or on its World-Wide Web server. The information contained in this document is supplemental to the Internet Disclaimer, http://www.dow.com/homepage/term.asp.

Back to top

Form No. 233-01007-MM-0614X