

Product Safety Assessment

DOWANOL™ DPnP Glycol Ether [Dipropylene Glycol n-Propyl Ether]

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Names

- CAS No. 29911-27-1
- EC No. 249-949-4
- Dipropylene glycol n-propyl ether
- DPnP
- 1-(1-Methyl-2-propoxyethoxy)-2-propanol
- Dipropylene glycol monopropyl ether
- DOWANOL™ DPnP Glycol Ether

Product Overview

- Dipropylene glycol n-propyl ether (DPnP) is a colorless liquid with an ether-like odor that evaporates slowly. The Dow Chemical Company markets DPnP under the trade name DOWANOL™ DPnP glycol ether.¹ For further details, see [Product Description](#).
- DPnP is mainly used as a solvent and coalescent for water-borne latex coatings and solvent-borne coating applications. It is also used in cleaning formulations and silk-screen inks.^{2,3} For further details, see [Product Uses](#).
- Because DPnP is formulated into household products, consumer contact is possible. Workplace exposure is also possible.¹ For further details, see [Exposure Potential](#).
- Eye contact with DPnP may cause moderate irritation with slight corneal injury. Brief skin contact may cause slight irritation with local redness. At room temperature, exposure to vapor is minimal due to low volatility.¹ For further details, see [Health Information](#).
- DPnP is readily biodegradable, unlikely to accumulate in the food chain, and is practically non-toxic to fish and aquatic organisms. For further details, see [Environmental Information](#).
- DPnP, both liquid and vapor, is combustible. It is stable under recommended storage conditions. DPnP is incompatible with strong acids, strong bases, and strong oxidizers and contact should be avoided.¹ For further details, see [Physical Hazard Information](#).

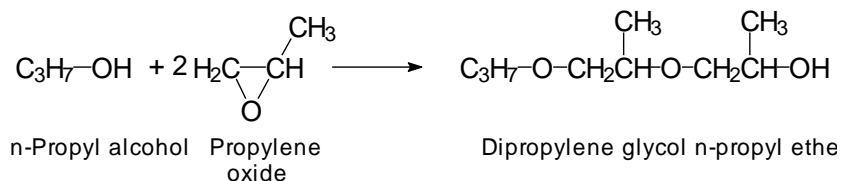
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Manufacture of Product⁴

- **Capacity** – Western Europe is the largest producer and consumer of propylene oxide-based glycol ethers. The Dow Chemical Company ("Dow") produces propylene oxide-based glycol ethers in the United States at facilities in Plaquemine, Louisiana and Seadrift, Texas in Europe in Stade, Germany, and in China at Zhangjiagang Ltd.

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- **Process** – DPnP is produced by reacting propylene oxide with n-propanol as shown below.



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Product Description^{1,5}

Dipropylene glycol n-propyl ether (DPnP) is a colorless liquid with an ether-like odor. It evaporates slowly. DPnP is a propylene oxide-based, or P-series, glycol ether. Dow markets DPnP and other P-series glycol ethers under the trade name DOWANOL™ Glycol Ethers.

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Product Uses^{2,3,4,6}

DPnP is used for industrial and residential applications including:

- As a solvent and coalescent for water-borne latex coatings and solvent-borne coating applications
- Cleaning formulations

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Exposure Potential

DPnP is used in the production of industrial and consumer products. Based on the uses for DPnP, the public could be exposed through:

- **Workplace exposure¹** – Exposure can occur either in a DPnP manufacturing facility or in the various industrial or manufacturing facilities that use DPnP. Those working with DPnP 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 and safety equipment in place to limit unnecessary exposure. See [Health Information](#).
- **Consumer exposure to products containing DPnP** – Dow does not sell DPnP for direct consumer use, but since it is used in household cleaning formulations, paints, and other products, consumers could come into contact with DPnP. See [Health Information](#).
- **Environmental releases¹** – DPnP may be released to air by evaporation from cleaners, coatings or other products that contain it. Once DPnP is introduced to water, the compound will tend to remain dissolved in water because it is highly soluble in water. DPnP is readily biodegradable, and the compound will be removed by sewage treatment plants.
- **Large release** – Industrial spills or releases are infrequent and generally contained. If a large spill does occur, isolate the area. Contain the spilled material if possible. Pump contained material into suitable and properly labeled containers. Use appropriate safety equipment.

- **In case of fire** – Keep people away and deny any unnecessary entry. Wear positive-pressure, self-contained breathing apparatus (SCBA) and protective fire-fighting clothing or fight the fire from a safe distance. Consider the use of unmanned hose holders or monitor nozzles. *Do not use* a direct water stream; it may spread the fire. Use water fog or fine spray, carbon-dioxide or dry-chemical extinguishers, or foam. Use water spray to cool containers exposed to the fire and the zone affected by the fire until the fire is out and danger of re-ignition is passed. Follow all emergency procedures carefully. See [Environmental](#), [Health](#), and [Physical Hazard Information](#).

For more information, review the relevant [Safety Data Sheet](#).

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Health Information¹

Eye contact with DPnP may cause moderate irritation with slight corneal injury. Brief skin contact may cause slight irritation with local redness. Prolonged skin contact is unlikely to result in absorption of harmful amounts.

At room temperature, exposure to DPnP vapor is minimal due to its low volatility. No adverse health effects are anticipated from a single inhalation of DPnP vapor. DPnP has low toxicity if swallowed. Swallowing small amounts of DPnP incidental to normal handling is not likely to cause injury. Swallowing larger amounts may cause injury.

Repeated exposure to DPnP is not anticipated to cause significant adverse effects. DPnP did not cause birth defects and did not interfere with reproduction in laboratory animals and was negative for genetic toxicity.

For more information, review the relevant [Safety Data Sheet](#).

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Environmental Information¹

DPnP has a low volatility, and may evaporate slowly from products that contain it. However, because it is highly soluble in water, once introduced, it has a tendency to remain in water. It has minimal tendency to bind to soil or sediment.

DPnP is unlikely to persist in the environment. DPnP is readily biodegradable, which suggests the chemical will be rapidly and completely removed from water and soil environments, including biological wastewater treatment plants.

DPnP is not likely to accumulate in the food chain (bioconcentration potential is low) and is practically nontoxic to fish and other aquatic organisms on an acute basis.

For more information, review the relevant [Safety Data Sheet](#).

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Physical Hazard Information¹

DPnP is stable under recommended storage conditions. Store in carbon steel, stainless steel, or phenolic-lined steel drums. Do not store in aluminum, copper, galvanized iron, or galvanized steel. DPnP can decompose at elevated temperatures, creating pressure build-up in closed systems. Decomposition products depend on temperature, air supply, and the presence of other materials, but may include aldehydes, ketones, organic acids, and other materials.

DPnP is incompatible with strong acids, strong bases, and strong oxidizers and contact should be avoided.

DPnP, both liquid and vapor, is combustible. During a fire, containers may rupture due to gas generation. Smoke may contain the original material in addition to unidentified toxic or irritating compounds, which may include and are not limited to carbon monoxide and carbon dioxide.

For more information, review the relevant [Safety Data Sheet](#).

Regulatory Information

Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of DPnP. These regulations may vary by city, state, country, or geographic region. Information may be found by consulting the relevant [Safety Data Sheet](#), [Technical Data Sheet](#), or [Contact Us](#).

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Additional Information

- Safety Data Sheet (<http://www.dow.com/webapps/msds/msdssearch.aspx>)
- Contact Us (<http://www.dow.com/oxysolvents/contact/index.htm>)
- DOWANOL™ DPnP Glycol Ether [Technical Data Sheet](#), The Dow Chemical Company
- “Propylene Glycol Ethers,” *SIDS Initial Assessment Report for 17 SIAM*, Organisation for Economic Co-operation and Development, Arona, Italy, November 11–14, 2003 (<http://www.inchem.org/documents/sids/sids/pges.pdf>)
- “Glycol Ethers,” *Marketing Research Report: Chemical Economics Handbook*, SRI Consulting, July 2004

For more business information about DPnP, visit Dow’s [Oxygenated Solvents](#) web site. (<http://www.dow.com/oxysolvents/index.htm>)

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References

- ¹ DOWANOL™ DPnP Glycol Ether Material Safety Data Sheet, The Dow Chemical Company.
- ² DOWANOL DPnP Glycol Ether Product Information, The Dow Chemical Company.
- ³ Dow Oxygenated Solvents website – Applications Center: (<http://www.dow.com/oxysolvents/app/index.htm>).
- ⁴ Chinn, Henry, “Glycol Ethers,” *Marketing Research Report: Chemical Economics Handbook*, SRI Consulting, July 2004, pages 5, 13, 15, 18, 27, and 29.
- ⁵ Dow Oxygenated Solvents website – P-Series Glycol Ethers: (<http://www.dow.com/oxysolvents/prod/pseries.htm>).
- ⁶ Estimates by The Dow Chemical Company.

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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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