Product Safety Assessment

Ethylene Glycol Monopropyl Ether

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Names

- CAS No. 2807-30-9
- Ethylene glycol monopropyl ether
- Ethylene glycol propyl ether
- Ethylene glycol n-propyl ether
- Propyl glycol
- EGPE
- Ethanol, 2-(propoxy)-
- 2-Propoxyethanol
- 2-(Propoxy)ethanol
- Propyl CELLOSOLVE™ Solvent

Product Overview

- Ethylene glycol monopropyl ether is a colorless liquid with a mild, sweet odor. Its unique properties include fast evaporation, high water solubility, and active solvency. It is an ethylene-series (or E-series) glycol ether that is used in printing, specialized coatings, and cleaning applications. It is sold by Dow under the trade name Propyl CELLOSOLVE™ Solvent.2 See Product Uses.
- Eye contact may cause severe eye irritation and moderate corneal injury. Prolonged or widespread skin contact may result in irritation or absorption of harmful amounts.3 See Product Description and Health Information.
- Consumer exposure to ethylene glycol monopropyl ether may occur through the use of water-based surface coatings and printing and cleaning products. Check the product label for ventilation requirements—avoid breathing vapor. Wear protective clothing, chemical goggles and gloves chemically resistant to this material when prolonged or frequently repeated contact could occur.4 Ethylene glycol monopropyl ether has a high boiling point and a fast evaporation rate, so exposure to vapors is unlikely at room temperature.5 See Exposure Potential.
- Ethylene glycol monopropyl ether is thermally stable at typical storage and use temperatures. It can oxidize at elevated temperatures. Gas generation during decomposition can cause pressure build-up in closed systems. See Physical Hazard Information.
- Biodegradation of ethylene glycol monopropyl ether is high under laboratory conditions. It is considered readily biodegradable and practically nontoxic to aquatic organisms.6 See Environmental Information.

Manufacture of Product

- Capacity7 – In 2004, global industry capacity for E-series glycol ethers, including ethylene glycol monopropyl ether, was 952,000 metric tons (2,098 million pounds). U.S. consumption

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Product Description

Ethylene glycol monopropyl ether is a clear liquid with a mild, sweet odor. Its unique features include its ability to coalesce, high solvency power, fast evaporation, and low viscosity. Ethylene glycol monopropyl ether is an ethylene-series (or E-series) glycol ether and is sold by Dow under the trade name Propyl CELLOSOLVE™ Solvent.

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Uses for
Propyl CELLOSOLVE™ Solvent

Ethylene glycol monopropyl ether is used in the production of industrial and consumer products. Based on these uses, the public could be exposed through:

• **Workplace exposure** – Exposure can occur either in a glycol ether manufacturing facility or in the various industrial or manufacturing facilities that use glycol ethers in production. Those working with glycol ethers in manufacturing operations could be exposed during maintenance, sampling, testing, or other procedures. Adequate ventilation should be used to maintain vapor levels below recommended guidelines. 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 glycol ethers** – Ethylene glycol monopropyl ether may be found in various water-based coatings, printing inks, and cleaning products used by consumers. Avoid breathing vapor. Use chemical goggles to protect eyes. Use chemically resistant gloves when prolonged or frequently repeated contact could occur. Consider the use of protective clothing chemically resistant to this material. Follow product instructions carefully to minimize the risk of exposure. See **Health Information**.

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• **Environmental releases** – In the event of a spill, eliminate all sources of ignition in the vicinity of the spill or released vapor to avoid fire or explosion. Isolate area and keep unnecessary and unprotected personnel from entering the area. Do not smoke. Absorb the material with noncombustible material, clay, or Zorb-all. Wash the spill site with large quantities of water. Keep upwind of spill and ventilate area of leak or spill. Use appropriate safety equipment. Prevent the material from entering soil, ditches, sewers, waterways, and/or groundwater. See Environmental, Health and Physical Hazard Information.

• **Large release** – Industrial spills or releases are infrequent and are generally contained. If a large spill does occur, the material should be captured, collected, and reprocessed or disposed of according to applicable governmental requirements. If ethylene glycol monopropyl ether is present in a fire situation, it can produce carbon monoxide (highly toxic) and carbon dioxide (an asphyxiant at sufficient concentrations). Stay upwind and keep out of low areas where gases can accumulate. Eliminate ignition sources. Use water spray to cool fire-exposed containers and fire-affected zones until fire is out and danger of reignition has passed. Fire-fighting personnel can also use dry-chemical or carbon-dioxide fire extinguishers or foam. Alcohol-resistant foams are preferred. General-purpose synthetic foams or protein foams may function, but will be less effective. Containers may rupture from gas generation in a fire situation. Keep people away. Isolate fire and deny unnecessary entry. Fight fire from a protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream, as it may spread fire. Move containers from fire area if this is possible without hazard. Burning liquids may be extinguished or moved by gentle flushing with water. Emergency personnel should wear proper protective equipment, including self-contained breathing apparatus (SCBA), and follow emergency procedures carefully. Avoid contact with this material during fire-fighting operations. If contact is likely, wear full chemical-resistant fire-fighting clothing with self-contained breathing apparatus. When relevant in scale or risk, the community should be notified of the hazards associated with the specific release event. See Environmental, Health and Physical Hazard Information.

For more information, see the relevant Safety Data Sheet (SDS).

**Health Information**\(^{16,17}\)

Eye contact with ethylene glycol monopropyl ether may cause severe eye irritation and moderate corneal injury. Effects include pain, marked redness, and swelling.

Prolonged skin contact with ethylene glycol monopropyl ether may cause skin irritation with local redness. Prolonged or widespread skin contact may result in absorption of harmful amounts.

Prolonged or excessive exposure to vapor may cause irritation to the upper respiratory tract (nose and throat). Observations in animals include red-colored urine.

Ethylene glycol monopropyl ether has a low toxicity if swallowed. Small amounts swallowed incidental to normal handling operations are not likely to cause injury. However, swallowing larger amounts may cause injury.

In animal studies, excessive exposure caused hemolysis (breakage of red blood cells) and secondary effects to the kidneys and liver. Hemolysis impairs the blood's ability to transport oxygen and excessive exposure to ethylene glycol monopropyl ether can aggravate preexisting diseases of the kidneys, liver or blood (like anemia). However, human red blood cells have been shown to be significantly less susceptible to hemolysis than those of the test animals.
This material has been toxic to the fetus in lab animals at doses toxic to the mother. It did not cause birth defects in laboratory animals.

For more information, see the relevant Safety Data Sheet (SDS).

Environmental Information

Biodegradation of ethylene glycol monopropyl ether under aerobic static laboratory conditions is high, and its bioconcentration potential is low. The potential for mobility in soil is very high. Ethylene glycol monopropyl ether is practically nontoxic to aquatic organisms.

Additional environmental information for EGPE is available in the Ecological and Toxicological Data of DOW Glycol Ethers brochure.

Physical Hazard Information

Ethylene glycol monopropyl ether is a combustible liquid and vapor. It is thermally stable at typical storage and use temperatures. Ethylene glycol monopropyl ether should not be stored in aluminum, copper, galvanized-iron, or galvanized-steel containers. Minimize sources of ignition—such as static build-up, heat, spark, or flame—in storage and use areas. Avoid contact with strong acids, strong bases, and strong oxidizers.

Ethylene glycol monopropyl ether can oxidize at elevated temperatures. Gas generation during decomposition can cause pressure build-up in closed systems. Decomposition products can include aldehydes, ketones, and organic acids.

Vapors are heavier than air and may travel a long distance and accumulate in low-lying areas. Ignition and/or flash back may occur. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Spills of these organic materials on hot fibrous insulation may reduce the autoignition temperature, increasing the potential for spontaneous combustion.

For more information, see the relevant SDS.

Regulatory Information

Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of this material. These regulations may vary by city, state, country, or geographic region. Information may be found by consulting the relevant SDS or Contact Us.

Additional Information

- Safety Data Sheet (http://www.dow.com/webapps/msds/msdssearch.asp)


For more business information about this product, visit Dow's [Oxigenated Solvents](http://www.dow.com/oxysolvents/) web site.

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**References**

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12. Estimates by The Dow Chemical Company.


NOTICES:

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