

Propylene glycol ethyl ether (PGEE) [Ethyl PROXITOL] Product Stewardship Summary

CAS number: 1569-02-4

Chemical formula: C₅H₁₂O₂

What is PGEE?

PGEE is a glycol ether based on Propylene oxide. It is a speciality solvent having a bi-functional nature (ether-alcohol). It is a clear liquid with a sweetish odour.

The Shell Chemicals range of Propylene oxide-based glycol ethers are sold under the trade name PROXITOL.

How is PGEE used?

It is used as an intermediate and in formulations in industrial, professional or consumer applications, mainly in surface coatings and printing inks and paints, cleaners, agrochemical or de-icing/anti-icing formulations.

Health, Safety and Environmental considerations

PGEE is a flammable liquid with a flashpoint of 40 °C. PGEE is an isomer mix, of which the main component is 1-Ethoxypropanol-2 (typically 98 % or more).

If large quantities are ingested or high vapour concentrations inhaled, PGEE may cause central nervous system depression including headaches, nausea, dizziness, drowsiness, and coma. To a certain extent, PGEE can cause slight irritation of the skin and respiratory tract, but these effects do not trigger classification according to GHS criteria. However, PGEE has been shown to cause serious eye irritation. Shell PROXITOLs are not classified as carcinogens or mutagens, are not expected to cause cancer in humans, nor do they impair fertility or damage the developing foetus.

No occupational exposure limits exist for PGEE. The calculated no effect levels for acute exposure are 317 mg/m³ for workers who are expected to be protected by adequate personal protection equipment and 190 mg/m³ for consumers.

PGEE is of low toxicity towards aquatic organisms. It is completely miscible with water, biodegradable and not expected to bio-accumulate.

Storing and transporting PGEE

PGEE is transported by marine, road and rail, primarily in bulk quantities, but also as packed product. Due to its flammability, it is classified as hazardous for transport under transport regulations.

Glycol ethers should be stored at ambient temperatures away from sources of ignition and substances with oxidising or corrosive properties. PROXITOLs are stabilised with a certain amount of inhibitor to prevent the formation of peroxides.

Risk Characterization Summary

Risks associated with exposure to these products have been evaluated for the following "chain-of-commerce" activities: manufacture, storage, product transfer, transportation, and customers/markets. They are manufactured, stored and transported to customers in closed systems. Depending on the customer, end uses may vary from use as an intermediate for the manufacture of other chemicals, commercial products, or certain formulated consumer products. Proper equipment design and handling procedures maintain low risk from exposure to these products where the product is used as a chemical intermediate. Exposures may be higher in commercial and consumer applications. To minimise risk, additional controls, such as special handling procedures and protective packaging, are implemented.

This product stewardship summary 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 chemical's applicable [Material Safety Data Sheet](#), which should be consulted before use of the chemical. This product stewardship summary does not supplant or replace required regulatory and/or legal communication documents.



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