

Global Product Strategy (GPS) Safety Summary

Triethylene Glycol

This GPS Safety Summary is a high-level summary intended to provide the general public with an overview of product safety information on this chemical substance. It is not intended to provide emergency response, medical or treatment information, nor to provide an overview of all safety and health information. This summary is not intended to replace the Safety Data Sheet. For detailed guidance on the use or regulatory status of this substance, please consult the Safety Data Sheet and the Product Stewardship Bulletin (PSB).

Chemical Identity

Name: Triethylene Glycol

Brand names: Triethylene Glycol

Chemical name (IUPAC): 2,2'-[1,2-ethanediylbis(oxy)]bis-ethanol

CAS number: 112-27-6

EC number: 203-953-2

Molecular formula: C₆H₁₄O₄

Uses and Applications

Triethylene glycol, commonly referred to as TEG, is similar in properties to diethylene glycol (DEG), but with a higher boiling point, viscosity and specific gravity. It is used where a high boiling point and low volatility are important.

The major use of TEG is in the drying of natural gas, due to its strong hygroscopic properties. TEG is also used as a chemical intermediate in the production of vinyl plasticizers, polyester resins, adhesives, and a variety of solvents and cleaners.

Physical / Chemical Properties

At ambient temperature triethylene glycol is a colorless liquid with little or no odor. The flash point for triethylene glycol is 157°C (315°F). The boiling and freezing points of triethylene glycol are 285°C (545°F) and -7 to -4°C (19 to 25°F) respectively.

Health Effects

Triethylene glycol has been classified as hazardous under GHS for single exposure respiratory irritation effects.

The table below gives an overview of the health effects assessment results for Triethylene glycol.

Effect Assessment	Result
Acute Toxicity Oral / inhalation / dermal	Low acute toxicity by the oral, inhalation and dermal routes of exposure. Ingestion of high doses may cause central nervous system effects (headache, dizziness, sleepiness, coma and death with severe over-exposure).
Irritation / corrosion Skin / eye/ respiratory tract	Saturated vapor/aerosols may cause eye, nasal and respiratory tract irritation.
Sensitization	Not a sensitizer.
Toxicity after repeated exposure Oral / inhalation / dermal	Low concern for repeated exposure systemic toxicity.
Genotoxicity / Mutagenicity	Low concern for genotoxicity/mutagenicity.
Carcinogenicity	Low concern for cancer.
Toxicity for reproduction	Not toxic to fertility. May be toxic to embryo/fetal development at high oral doses.

Environmental Effects

Triethylene glycol has low toxicity to aquatic life and has therefore not been classified under GHS as hazardous.

The table below gives an overview of the environmental assessment results for triethylene glycol.

Effect Assessment	Result
Aquatic Toxicity	Low toxicity to aquatic life

Fate and behaviour	Result
Biodegradation	Expected to be inherently biodegradable
Bioaccumulation potential	Not expected to bioaccumulate
PBT / vPvB conclusion	Not considered to be either PBT nor vPvB.

PBT = Persistent, Bio-accumulative and Toxic in the environment.

vPvB = very Persistent and very Bio-accumulative in the environment.

Exposure

Human health

Triethylene glycol may be present in solvents and cleaners and is also frequently used as a chemical intermediate in the production of vinyl plasticizers, polyester resins, adhesives.

Consumers should follow all product label instructions.

Personnel exposure to triethylene glycol in manufacturing facilities is considered very low because the process, storage and handling operations are enclosed. However, worker exposure can potentially occur during operations such as product transfer, product sampling, or maintenance / repair activities on product-containing systems. The risk of accidental exposure should be controlled by selecting and applying the appropriate Risk Management Measures.

Environment

Triethylene glycol is manufactured in a closed and automated process. Also, transfer (loading and transport) of the product is conducted in closed containers to prevent release from the system. Due to its use as a solvent in formulations such as cleaners, triethylene glycol has indoor and outdoor environmental release possibilities.

Risk Management Measures

For detailed guidance on the use of Triethylene glycol, the Safety Data Sheet and the Product Safety Bulletin should be consulted.

Triethylene glycol should be handled only by knowledgeable and trained personnel.

Human health

When using chemicals make sure that there is adequate ventilation. Always use appropriate chemical-resistant gloves to protect your hands and skin, always wear eye protection such as chemical goggles and always wear flame-retardant clothing. Do not eat, drink, or smoke where chemicals are handled, processed, or stored. Wash hands and skin following contact. If the substance gets into your eyes, rinse eyes thoroughly for at least 15 minutes with tap water and seek medical attention.

In the case of transfer or maintenance operations, always clear transfer lines prior to decoupling, and flush/drain to a closed system for recycle prior to opening equipment.

In cases where engineering controls cannot maintain airborne substance concentrations below exposure limits, or in cases with a risk of accidental exposure, additional risk management measures may be necessary for safe use, such as the use of a complete suit protecting against chemicals and supplied air, a self-contained breathing apparatus or respirator.

Environmental

In case of accidental release or spill, do not allow the product to enter sewers, surface or ground water.

Regulatory Information / Classification and Labeling

For a detailed overview of the regulatory status of this substance, please refer to the Product Stewardship Bulletin which is available from the LyondellBasell corporate website.

Under GHS (Globally Harmonized System on Classification and Labeling) substances are classified according to their physical, health and environmental hazards. The hazards are communicated via specific labels on the product packaging and the Safety Data Sheet.

GHS attempts to standardize hazard communication so that the intended audience (workers, consumers, transport workers, and emergency responders) can better understand the hazards of the chemicals in use.

For a detailed overview of the classification and labeling of this substance, please refer to the regional Safety Data Sheet, which can be found on the LyondellBasell corporate website.

Conclusion Statements

- Triethylene glycol is used as a chemical intermediate in the production of vinyl plasticizers, polyester resins, adhesives, and in a variety of solvents and cleaners
- Triethylene glycol may cause respiratory irritation and has therefore been classified as hazardous.
- Exposure to human health and environment is considered very low as the triethylene glycol manufacturing process, storage and handling operations are enclosed.

Contact Information within Company

For further information on this product in general, please consult the LyondellBasell corporate website (www.lyb.com).

Date of issue

Date of issue: 10 July 2015.

Disclaimer

Before using a product sold by a company of the LyondellBasell family of companies, users should make their own independent determination that the product is suitable for the intended use and can be used safely and legally. SELLER MAKES NO WARRANTY; EXPRESS OR IMPLIED (INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY WARRANTY) OTHER THAN AS SEPARATELY AGREED TO BY THE PARTIES IN A CONTRACT.

LyondellBasell prohibits or restricts the use of its products in certain applications. For further information on restrictions or prohibitions of use, please contact a LyondellBasell representative.

Users should review the applicable Safety Data Sheet before handling the product.

Triethylene glycol is a product of Equistar Chemicals, LP.