

Global Product Strategy (GPS) Safety Summary

MPDiol[®] 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: MPDiol Glycol
Brand names: MPDiol Glycol, MPD, MPDiol
Chemical name (IUPAC): 2-methyl-1,3-propanediol
CAS number: 2163-42-0
EC number: 412-350-5
Molecular formula: C₄H₁₀O₂

Uses and Applications

MPDiol Glycol is used as a chemical intermediate and as a component in formulations.

Industrial use of MPDiol Glycol as a chemical intermediate includes applications such as the manufacture of unsaturated polyester resins (UPR), gel coats, coatings, adhesives, sealants and elastomers.

As a component in formulations, MPDiol Glycol can be used as a neutralizer, emollient, emulsifier and humectant, as well as a fragrance enhancer and carrier solvent in household and personal care products. MPDiol Glycol has a broad solvency that helps enhance fragrances, while giving clear homogeneous solutions.

Physical / Chemical Properties

MPDiol Glycol is a colorless, low viscosity and low molecular weight liquid with a unique molecular structure. It is a branched aliphatic diol. This structure inhibits the crystallization of MPDiol glycol allowing it to remain liquid even in cold temperatures. The boiling and freezing points of MPDiol Glycol are 212°C (414°F) and -54°C (-65°F) respectively. The substance is considered non-flammable with a flash point of 127°C (261°F).

MPDiol Glycol is not classified as hazardous under the Globally Harmonized System on classification and labeling (GHS) for its physical or chemical properties.

Health Effects

MPDiol Glycol has low acute toxicity by oral, dermal and inhalation routes of exposure.

MPDiol Glycol is not classified as hazardous under GHS for its health effects.

The table below gives an overview of the health effects assessment results for MPDiol Glycol.

Effect Assessment	Result
Acute Toxicity Oral / inhalation / dermal	Acute toxicity is low after oral, dermal, or inhalation exposure.
Irritation / corrosion Skin / eye/ respiratory tract	Not irritating to skin, eyes, or respiratory tract
Sensitization	Not sensitizing
Toxicity after repeated exposure Oral / inhalation / dermal	No adverse systemic effects to organs were reported following repeated exposures to MPDiol Glycol.
Genotoxicity / Mutagenicity	Not mutagenic
Carcinogenicity	Not considered as carcinogenic
Toxicity for reproduction	Not toxic for reproduction

Environmental Effects

MPDiol Glycol is not classified as environmentally hazardous under GHS.

The table below gives an overview of the environmental assessment results for MPDiol Glycol.

Effect Assessment	Result
Aquatic Toxicity	Low toxicity to water organisms

Fate and behaviour	Result
Biodegradation	Rapidly biodegradable in both freshwater and seawater
Bioaccumulation potential	Not expected to be bioaccumulative
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

Consumer exposure can occur as a result of the use of products formulated with MPDiol Glycol, such as coatings, household products, cosmetics and other personal care products. None of these applications are expected to pose risks to human health due to MPDiol Glycol under normal use.

Exposure to MPDiol Glycol of personnel 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

Due to its uses in formulations, MPDiol Glycol has indoor and outdoor environmental release possibilities. None of these applications are expected to pose risks to the environment due to MPDiol Glycol under normal use.

Risk Management Measures

For detailed guidance on the use of MPDiol Glycol, the Safety Data Sheet should be consulted.

When using a MPDiol Glycol containing consumer product at home, all provided instructions and precautions from the supplier should be read, understood and followed. It should never be used near open flames or other ignition sources.

Human health

Although MPDiol Glycol is not classified as hazardous for its health effects, good Industrial Hygiene practices should always be applied when using chemicals in industrial and professional facilities. 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 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

This substance has been registered under REACH by relevant companies of LyondellBasell in the European Union.

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

- MPDiol Glycol has a wide variety of uses. Industrial use as chemical intermediate includes the manufacture of unsaturated polyester resins (UPR), gel coats, coatings, adhesives, sealants and elastomers. MPDiol Glycol may also be used as a component in formulations for household and personal care products.
- MPDiol Glycol is not classified as hazardous under GHS.
- Risks to human health and the environment from MPDiol Glycol are considered low or negligible, when it is properly handled.

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: 13 August 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.

MPDiol Glycol is a product of Lyondell Chemical Company and Lyondell Chemie Nederland B.V.