Global Product Strategy (GPS) Safety Summary

Propylene Glycol Monomethyl Ether

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: Propylene Glycol Monomethyl Ether
Brand names: Glycol Ether PM
Chemical name (IUPAC): 1-methoxypropan-2-ol
CAS number: 107-98-2
EC number: 203-539-1
Molecular formula: C4-H10-O2

Uses and Applications

Glycol Ether PM is a versatile solvent with low toxicity and fast evaporation rate. It is water miscible and has good solvency with numerous polar and non-polar substances. Glycol Ether PM has been selected for use in:

- Coatings, where it provides good solvency for a wide variety of resins including acrylic, epoxies, alkyds, polyesters, nitrocellulose and polyurethanes. Key properties for coating applications include complete water miscibility and good coupling ability.
- Cleaning formulations.
- Electronics. Glycol Ether PM is used in conjunction with other solvents in the manufacture of laminates which are used to make circuit boards. Additionally, Glycol Ether PM may be used in the cleaning and removal of solder flux and masks. Specifically for the electronics industry, an electronic grade Glycol Ether PM-EL is available from the United States with low metal content levels.
- Agricultural, electronic, ink, textile, cosmetics (e.g. fingernail polish) and adhesive products.

Physical / Chemical Properties

Glycol Ether PM is a colorless liquid with an ether-like odor at room temperature. The substance is considered flammable with a flash point of 31°C (88°F). The boiling and freezing points of Glycol Ether PM are 120°C (248°F) and -96°C (-141°F) respectively. Glycol Ether PM has been classified as hazardous under the Globally Harmonized System on classification and labeling (GHS) for its flammability.

Health Effects

Glycol Ether PM is of low acute toxicity by all routes of exposure. It may cause temporary slight eye irritation and exposure to vapors may cause irritation of the eyes, nose or throat. However, these effects are below the thresholds that would warrant classification under GHS. It can cause drowsiness and dizziness when ingested or inhaled for which it has been classified as hazardous under GHS.

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

Effect Assessment	Result
Acute Toxicity Oral / inhalation / dermal	Low acute toxicity by all routes of exposure. Can cause dizziness and drowsiness when ingested or inhaled.
Irritation / corrosion Skin / eye/ respiratory tract	May cause temporary slight eye irritation. Exposure to vapors may cause irritation of the eyes, nose or throat.
Sensitisation	Not sensitising.
Toxicity after repeated exposure Oral / dermal	May cause sedation, enlarged liver, and minor kidney changes during prolonged or high exposures.
Genotoxicity / Mutagenicity	Not mutagenic.
Carcinogenicity	Not considered carcinogenic.
Toxicity for reproduction	Not classified as toxic to reproduction or development.

Environmental Effects

Glycol Ether PM is a low ecotoxicity hazard and therefore is not classified under GHS. Furthermore, it does not bio-accumulate, is readily biodegradable and will not persist in the environment.

The table below gives an overview of the environmental effects assessment results for Glycol Ether PM.

Effect Assessment	Result
Aquatic Toxicity	Low ecotoxicity hazard to aquatic organisms

Fate and behavior	Result
Biodegradation	Readily biodegradable.
Bioaccumulation potential	Not bio-accumulative.
PBT / vPvB conclusion	Not considered to be either PBT or vPvB.

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

Exposure

Human health
Consumers may be exposed to small amounts of Glycol Ether PM during the use of consumer products containing Glycol Ether PM. However, for supported uses these potential exposures are expected to be below the allowable and recommended exposure limits.

Professionals and Industrial workers may come into contact with Glycol Ether PM as a component of coatings, cleaning fluids, electronics applications, and other formulations containing Glycol Ether PM. Exposure should be controlled by selecting and applying the appropriate Risk Management Measures.

Exposure to Glycol Ether PM 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 like 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 many uses as a functional fluid in formulations, Glycol Ether PM has widespread indoor and outdoor environmental release possibilities.

In manufacturing facilities, Glycol Ether PM is manufactured in a closed and automated process with minimal release as emissions to air or water.

Risk Management Measures

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

When using an Glycol Ether PM 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.

Flammability
The vapor space above a stored liquid may be flammable/explosive unless blanketed with inert gas. Equipment should be grounded to prevent build-up of static electricity.

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, 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

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 the Globally Harmonized System on classification and labeling (GHS) 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

- Glycol Ether PM is a versatile solvent with low toxicity, surface tension reduction properties and fast evaporation. It is used in a wide variety of industrial, professional and consumer products, such as coatings and cleaners, agricultural, electronic, ink, textile, cosmetics and adhesive products.
- Glycol Ether PM is of low acute toxicity via all routes of exposure. However, it has been classified under GHS as hazardous because it can cause drowsiness and dizziness when ingested or inhaled. It is a low ecotoxicity hazard. Appropriate Risk Management Measures should be selected and applied to control risk of exposure;
- Consumer exposures to small amounts of Glycol Ether PM during supported uses in consumer products containing Glycol Ether PM are expected to be below the allowable and recommended exposure limits.

Contact Information within Company

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

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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.
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This product(s) may not be used in:
(i) any U.S. FDA Class I, Health Canada Class I, and/or European Union Class I medical devices, without prior notification to Seller for each specific product and application; or
(ii) the manufacture of any of the following, without prior written approval by Seller for each specific product and application: U.S. FDA Class II Medical Devices; Health Canada Class II or Class III Medical Devices; European Union Class II Medical Devices; film, overwrap and/or product packaging that is considered a part or component of one of the aforementioned medical devices; packaging in direct contact with a pharmaceutical active ingredient and/or dosage form that is intended for inhalation, injection, intravenous, nasal, ophthalmic (eye), digestive, or topical (skin) administration; tobacco related products and applications, electronic cigarettes and similar devices, and pressure pipe or fittings that are considered a part or component of a nuclear reactor. Additionally, the product(s) may not be used in: (i) U.S. FDA Class III Medical Devices; Health Canada Class IV Medical Devices; European Class III Medical Devices; (ii) applications involving permanent implantation into the body; (iii) life-sustaining medical applications; and (iv) lead, asbestos or MTBE related applications. All references to U.S. FDA, Health Canada, and European Union regulations include another country's equivalent regulatory classification.

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

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