

SAFETY DATA SHEET

Product: BLOND GLYCERIN

N° SDS: Pb0269_e

Revision: 0.2e

Date: 07/31/2025

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SECTION 1: IDENTIFICATION

GHS product identifier: BLOND GLYCERIN

Recommended use of the chemical and restrictions on use: Used in the production of polypropylene.

Supplier's details: Petrobras Biocombustível S. A.
Address: Rua do Passeio, 38, Setor 4, 2º andar, Centro, CEP: 20021-290 - RJ – Brasil.
Phone number: 0800-728-9001

Emergency phone number: 0800 728 9001 Opção 02

SECTION 2: HAZARD IDENTIFICATION

Classification of the substance or mixture: Not classified as hazardous by the classification system used.

Classification system adopted: Globally Harmonized System of Classification and Labeling of Chemicals (GHS), United Nations.

GHS label elements, including precautionary statementsCaution recommendations: Wash your hands after handling the product.
During handling of the product do not drink, eat or smoke.
It is recommended the use of appropriate PPE when handling the product.
Get product information before handling.
Store product in a suitable place.
In case of emergency, proceed as indicated in this document.

Other hazards which do not result in classification: The product has no other hazards.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**SUBSTANCE**

Chemical identity of the substance: Glycerin.

Common name(s), synonym(s) of the substance: 1,2,3-Propanetriol; glycerol;

CAS number: 56-81-5

EC number: 200-289-5

Components contributing to the hazard: Does not contain components that contribute to the hazard.

SECTION 4: FIRST-AID MEASURES**Description of necessary first-aid measures**

Inhalation: Remove the exposed person to a ventilated area.

Skin: Wash exposed skin with enough water to remove the product.

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Eye:	Rinse thoroughly with water for several minutes. If you wear contact lenses, remove them if easy to do. If eye irritation occurs, consult a doctor. Bring this document.
Ingestion:	Rinse the exposed person's mouth with water. Do not induce vomiting. If you feel unwell, contact a POISON CENTER or doctor. Bring this document with you.
Most important symptoms/effects, acute and delayed:	May cause mild skin irritation with redness. May cause mild eye irritation with redness and tearing. Inhaling mists can cause mild irritation of the respiratory tract with coughing and shortness of breath. Ingestion of large quantities can cause damage to the gastrointestinal tract with nausea, vomiting, headaches, intense thirst and diarrhea.
Indication of immediate medical attention and special treatment needed, if necessary:	If necessary, provide symptomatic treatment.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media:	Suitable: carbon dioxide (CO ₂), water mist and powder. Unsuitable: water jet directly.
Specific hazards arising from the chemical:	Combustion of the chemical or its packaging can form irritating and toxic gases such as carbon monoxide and carbon dioxide. Vapors can be denser than air and tend to accumulate in low or confined areas, such as manholes and basements. Containers can explode if heated.
Special protective actions for fire-fighters:	Wear self-contained breathing apparatus (SCBA) with positive pressure and full protective clothing. Containers and tanks involved in the fire should be cooled with water mist.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:	Isolate the leak from ignition sources. Stop the leak if it can be done without risk. Do not smoke. Avoid contact with the product. If necessary, use personal protective equipment as described in section 8.
For emergency responders:	Wear full PPE including safety glasses with side shields, PVC safety gloves, appropriate protective clothing, and closed-toe shoes. In the event of a spill, where exposure is high, an appropriate respiratory protection mask is recommended.
Environmental precautions:	Prevent spilled product from reaching waterways and sewage systems.
Methods and materials for containment and cleaning up:	Use water mist or vapor-suppressing foam to reduce vapor dispersion. Use natural barriers or spill containment devices. Collect the spilled product and place it in appropriate containers. Absorb the remaining product with dry sand, earth, vermiculite, or any other inert material. Place the adsorbed product in appropriate containers and remove them to a safe location. For final disposal, proceed as per Section 13 of this document.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Precautions for safe handling:	Handle in a well-ventilated area or with a general ventilation/local exhaust system. Avoid the formation of vapors and mists. If necessary, use personal protective equipment as described in section 8. Avoid contact with incompatible materials.
General hygiene:	Wash your hands and face thoroughly after handling and before eating, drinking, smoking, or using the bathroom.

Conditions for safe storage, including any incompatibilities

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Technical measures for prevention of fire and explosion:	The product is not expected to present a fire or explosion hazard.
Conditions for safe storage, including any incompatibilities:	Store in a cool, dry, well-ventilated place away from sunlight. Keep the container closed. The storage area should have a waterproof floor. The storage area should have a containment basin to retain the product in case of a leak. It is not necessary addition of stabilizers and antioxidants to ensure the durability. This material may react dangerously with some incompatible materials as outlined in Section 10. Keep away from incompatible materials.
Packaging compatibilities:	Similar to the original packaging.
Inadequate packaging materials:	There are not known unsuitable material.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational exposure limit:	The values below apply to workplaces. - <u>Methanol</u> : ACGIH - TLV - TWA: 200 ppm (*); ACGIH - TLV - STEL: 250 ppm (*).
Biological limit:	*: Also absorbed through the skin. - <u>Methanol</u> : ACGIH - BEI: Determinant: Methanol in urine. Sampling Time: End of shift. Index: 15 mg/L. Notation: B, Ns. B: The determinant may be present in biological specimens collected from subjects who have not been occupationally exposed, at a concentration which could affect the interpretation of the results. Such background concentrations are incorporated in the BEI value; Ns: The determinant is nonspecific, since it is also observed after exposure to other chemicals.
Other limits and values:	- <u>Methanol</u> : IDLH (NIOSH): 6000 ppm.
Appropriate engineering controls:	A risk assessment is recommended to define the engineering control measures necessary to eliminate or minimize the risk. These measures help to reduce exposure to the product. Maintain atmospheric concentrations of the constituents of the material below occupational exposure limits indicated.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection:	Glasses with side protection.
Skin protection:	Closed shoes and appropriate protective clothing. PVC apron. PVC protective gloves.
Respiratory protection:	It is recommended to use a respirator with a filter for vapors or mists for average exposures above half the TLV-TWA. In cases where the exposure exceeds 3 times the TLV-TWA value, use a self-contained breathing apparatus (SCBA) with air supply, with a full facepiece, operated in positive pressure mode. Follow the guidance of the Respiratory Protection Program (PPR), Fundacentro.
Thermal hazards:	It does not present thermal hazards.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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Physical state:	Liquid, viscous.
Colour:	Not available.
Odour:	Characteristic.
Melting point/freezing point:	17 °C (62.6 °F).
Boiling point or initial boiling point and boiling range:	290 °C (554 °F) at 760 mmHg (101324.72 Pa).
Flammability:	Not flammable.
Lower and upper explosion limit/flammability limit:	Upper: 19 % and Lower: 2.7 %.
Flash point:	199 °C (390.2 °F) - Closed cup.
Auto-ignition temperature:	370 °C (698 °F).
Decomposition temperature:	Not available.
pH:	Not available.
Kinematic viscosity:	Not available.
Solubility:	Miscible in water. Miscible in alcohol. Immiscible in ether, chloroform, and fixed and volatile oils.
Partition coefficient n-octanol/water (log value):	log K_{ow} : -1.75.
Vapour pressure:	5 mmHg (666.61 Pa) at 150 °C (302 °F).
Density and/or relative density:	Absolute density: 1.26 g/cm ³ at 15 °C (59 °F).
Relative vapour density:	Not available.
Particle characteristics:	Not applicable.
Other information:	Dynamic viscosity: 1412 mPa.s at 20 °C (68 °F). Hygroscopic.

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	Reactivity is not to be expected under normal conditions of temperature and pressure.
Chemical stability:	Product stable under normal temperature and pressure conditions.
Possibility of hazardous reactions:	May react violently with oxidizing materials.
Conditions to avoid:	High temperatures. Contact with incompatible materials.
Incompatible materials:	Acetic acid, alkali metal hydrides, calcium oxychloride, chromium oxide and oxidizing agents.

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Hazardous decomposition products: No hazardous decomposition products are known.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity:	Product not classified as acute toxic by oral and dermal. ATEmix Oral: > 5000 mg/kg. ATEmix Dermal: > 5000 mg/kg.
Skin corrosion/irritation:	May cause mild skin irritation with redness.
Serious eye damage/irritation:	May cause mild eye irritation with redness and tearing.
Respiratory or skin sensitization:	It is not expected to present respiratory or skin sensitization.
Germ cell mutagenicity:	It is not expected to show mutagenicity in germ cells.
Carcinogenicity:	It is not expected to be carcinogenic.
Reproductive toxicity:	It is not expected to be reproductively toxic.
STOT - Single exposure:	Not classified for specific target organ toxicity – single exposure. Inhaling mists can cause mild irritation of the respiratory tract with coughing and shortness of breath. Ingestion of large quantities can cause damage to the gastrointestinal tract with nausea, vomiting, headaches, intense thirst and diarrhea.
STOT - Repeated exposure:	It is not expected to exhibit specific target organ toxicity on repeated exposure.
Aspiration hazard:	It is not expected to present an aspiration hazard.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity:	It is not expected to be ecotoxic.
Persistence and degradability:	It is expected that the product presents persistence and it is not considered readily biodegradable.
Bioaccumulative potential:	Presents low bioaccumulative potencial in aquatic organisms. $\log K_{ow}$: -1.75.
Mobility in soil:	Not determined.
Other adverse effects:	No other environmental effects known.

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal methods

Must be disposed of as waste in compliance with local regulations. The treatment and disposal should be evaluated for each specific product.
Keep the product remains in its original and properly closed containers. Disposal should be performed as established for the product.

SECTION 14: TRANSPORT INFORMATION

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Road:	UN - United Nations: Model Regulations:	
	• Recommendations on the Transport of Dangerous Goods.	
UN number:	Not classified as hazardous for the road transportation.	
Environmental hazards:	The product is not considered dangerous for the environment for land transport.	
Railway regulations:	COTIF - Convention concerning International Carriage by Rail:	
	• Appendix C: RID - Regulations concerning the International Carriage of Dangerous Goods by Rail.	
UN number:	Not classified as dangerous for rail transport.	
Environmental hazards:	The product is not considered dangerous for the environment in rail transport.	
Sea:	IMO - International Maritime Organization:	
	• IMDG Code - International Maritime Dangerous Goods Code.	
UN number:	Not classified as hazardous for water transportation.	
Environmental hazards:	It's not considered a marine pollutant for transportation.	
Air:	IATA - International Air Transport Association:	
	• DGR - Dangerous Goods Regulation.	
UN number:	Not classified as dangerous for air transport.	
Environmental hazards:	The product is not considered dangerous for the environment for air transport.	
Special precautions for user:	Not applicable.	
Transport in bulk according to IMO instruments:	Consult regulations:	
	• International Maritime Organization: MARPOL: Articles, protocols, annexes, unified interpretations of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, consolidated edition. IMO, London, 2006;	
	• International Maritime Organization: IBC code: International code for the construction and equipment of shipping carrying dangerous chemicals in bulk: With Standards and guidelines relevant to the code. IMO, London, 2007.	

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question

Convention concerning Safety in the use of Chemicals at Work (Convention 170) - International Labour Organization, 1990.

SECTION 16: OTHER INFORMATION

This document was prepared based on current knowledge about the proper product handling and under normal conditions of use, in accordance with the application specified on the packaging. Any other use of the product involving their combination with other products, and use various forms of those indicated, are the responsibility of the user. Warns that the handling of any chemical substance requires the prior knowledge of its hazards for the user. In the workplace it is for the user company's product promotes training of its collaborators about the possible risks arising from exposure to the chemical.

Change control:

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Version	Manufacture date	Changes
0.2e	06/03/2025	Changes to sections: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 and 16.

Abbreviations:

ACGIH - American Conference of Governmental Industrial Hygienists;
 ATEmix - Acute Toxicity Estimate of the mixture;
 BEI - Biological Exposure Index;
 CAS - Chemical Abstracts Service;
 EC - European Community;
 EEC - European Economic Community;
 EPA - United States Environmental Protection Agency;
 IARC - International Agency for Research on Cancer;
 IDLH - Immediately Dangerous to Life or Health;
 K_{ow} - Octanol-water partition coefficient;
 NIOSH - National Institute for Occupational Safety and Health;
 OSHA - Occupational Safety & Health Administration;
 PBT - Persistent, bioaccumulative and toxic;
 STEL - Short Term Exposure Limit;
 TLV - Threshold Limit Value;
 TWA - Time Weighted Average;
 UN - United Nations;
 vPvB - Very Persistent and very Bioaccumulative.

Bibliographic references:

ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIALS HYGIENISTS. TLVs® and BEIs®: Based on the Documentation of the Threshold Limit Values (TLVs®) for Chemical Substances and Physical Agents & Biological Exposure Indices (BEIs®). Cincinnati-USA, 2025.

CONCAWE - HAZARD CLASSIFICATION AND LABELLING OF PETROLEUM SUBSTANCES IN THE EUROPEAN ECONOMIC AREA. Available in: <<https://www.concawe.eu/>>. Access at: Jun. 2025.

ECHA - EUROPEAN CHEMICAL AGENCY. Available in: <<http://echa.europa.eu/web/guest>>. Access at: Jun. 2025.

EPA - UNITED STATES ENVIRONMENTAL PROTECTION AGENCY. Available in: <<https://www.epa.gov/>>. Access at: Jun. 2025.

GESTIS - SUBSTANCE DATABASE. Available in: <<https://gestis-database.dguv.de/>>. Access at: Jun. 2025.

GHS - GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS. 10th rev. ed. New York and Geneva: United Nations, 2023.

HSDB - HAZARDOUS SUBSTANCES DATA BANK. Available in: <<http://pubchem.ncbi.nlm.nih.gov/>>. Access at: Jun. 2025.

IARC - INTERNATIONAL AGENCY FOR RESEARCH ON CANCER. Available in: <<http://monographs.iarc.fr/ENG/Classification/index.php>>. Access at: Jun. 2025.

NIOSH - NATIONAL INSTITUTE OF OCCUPATIONAL AND SAFETY. International Chemical Safety Cards. Available in: <<http://www.cdc.gov/niosh/>>. Access at: Jun. 2025.

OSHA - OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION. UNITED STATES DEPARTMENT OF LABOUR. <<https://www.osha.gov/chemicaldata/search>>. Access at: Jun. 2025.

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REACH - REGISTRATION, EVALUATION, AUTHORIZATION AND RESTRICTION OF CHEMICALS. Commission Regulation (EC) No 1272/2008 of December 2008 amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals. Available in: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:353:0001:1355:en:PDF>. Access at: Jun. 2025.