



MATERIAL SAFETY DATA SHEET
DISTILLED GLYCERINE

Revision: 2
 Valid from: 26.8.2016
 No. of pages 12

This MSDS is not required by Article 31 of Regulation (EC) 1907/2006 (REACH) as the relevant substance is not classified as hazardous, however, to comply with Article 32 of REACH Regulation and provide customers with relevant information, the format of the SDS according to Commission Regulation (EU) No. 453/2010 has been used.

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Substance name	CAS No.	EINECS No.	REACH Registration number
Glycerol, Glycerine IUPAC name: 1,2,3-propanetriol	56-81-5	200-289-5	Exempted of registration Regulation (EC) 1907/2006, Annex V (9), as amended.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Uses	Substance/mixture/article	Industrial user/professional user/consumer
Use of Glycerine	In a mixture	Industrial user/professional user
Use of Distilled Glycerine	Substance	Industrial user/professional user

The substance is not classified as hazardous under Regulation on Classification, Labelling and Packaging (CLP) EC 1272/2008, therefore there are not uses advised against.

1.3 Details of the supplier of the safety data sheet

- PREOL a.s.**
 Terežínká 1214 Tel: +420 416 564 830
 410 02 Lovosice Fax: +420 416 562 087
 Czech Republic Contact person (MSDS): monika.neveceralova@preol.cz

1.4 Emergency telephone number

- Toxicological Information Centre (TIC – Czech Republic)**
 Na bojišti 1,
 12808 Praha 2;
 Tel. (24h): +420 224 91 92 93; +420 224 91 54 02; +420 224 91 45 75; +420 224 97 11 11
- Transport Information and Emergency System (TRINS - Czech Republic)**
 It provides continuous training and practical assistance in dealing with emergencies associated with the transport or storage of hazardous chemicals in the Czech Republic. The assistance is provided via fire operational brigade (HZS) centers or via the national coordination center of Chemopetrol, a.s. in Litvinov.

Contact telephone TRINS: + 4 2 0 4 7 6 7 0 9 8 2 6

2. Hazards identification

2.1 Classification of the substance or mixture

Classification under Regulation (EC) No. 1272/2008 (CLP)

No classification

Most important adverse physicochemical, human health and environmental effects

Substance is not classified as hazardous.
See also section 2.3.

2.2 Label elements

Label elements according to Regulation (EC) No. 1272/2008

Not relevant, substance is not classified as hazardous.

2.3 Other hazards

PBT (Persistent, Bioaccumulative and Toxic) or vPvB (very Persistent and very Bioaccumulative) criteria

Substance does not meet the criteria to be considered PBT neither vPvB

Other hazards

- *Eye contact*: May cause minor eye irritation.
- *Skin Contact*: Prolonged or repeated contact is not likely to cause significant skin irritation. If the material is encountered at elevated temperatures, thermal burns are possible.
- *Inhalation*: Negligible unless heated to produce vapors. Vapors produced by heating, or finely misted materials may irritate the mucous membranes and cause dizziness, and nausea.
- *Ingestion*: No hazards anticipated from incidental ingestion to industrial exposure.

3. Composition/information on ingredients

3.1 Substances

Chemical identity of the main constituent of the substance

<i>Main constituent</i>	
EC name:	Glycerol (>99,5% w/w)
EC number:	200-289-5
CAS number (EC inventory):	56-81-5

Description:	Crude glycerol (80% w/w approx.) is obtained as product of the transesterification reaction of the triglycerides contained in natural vegetable oils with short chain alcohols such as methanol or ethanol. Then, the crude glycerol is released of any impurity through a complete purification process including acidification/neutralization to remove any Free Fatty Acid, simple distillation for methanol removal, desalination, fractional distillation (rectification) and bleaching. The resulting product is a Distilled Glycerol with purity higher than 99,5% w/w.
Molecular formula:	C ₃ H ₈ O ₃
Molecular weight range:	92 g/mol

Chemical identity of any relevant impurity, stabilizing additive, or individual constituent other than the main constituent

None.

3.2 Mixtures

Not relevant as substance is not a mixture.

4. First aid measures

4.1 Description of first aid measures

First aid instructions

GENERAL ADVICE:

In case of accident or if you feel unwell, seek medical advice immediately (if possible, identify the substance to the medical staff).

EYES

Irrigate eyes with a heavy stream of water for at least 15 to 20 minutes. Seek medical attention if symptoms persist (burning sensation in the eye, etc.).

SKIN

Remove all contaminated clothes and footwear unless stuck to skin. Wash with plenty of soap and water.

INHALATION

Remove casualty from exposure ensuring one's own safety whilst doing so; seek medical attention if symptoms persist.

INGESTION

Do not induce vomiting. Wash out mouth with water and drink plenty of water, approx. 0,5l. If gastrointestinal symptoms develop, consult medical personnel. (Never give anything by mouth to an unconscious person).

4.2 Most important symptoms and effects, both acute and delayed

Most important symptoms and effects.

Eyes Contact: Concentrated solutions may cause mild transient irritation.

Skin Contact: Unlikely to be irritant. Heated product may cause thermal burns if contacted.

Inhalation: Not applicable at ambient temperature. Glycerine mist may be irritant to respiratory tract.

Ingestion: Unlikely to be harmful unless excessive amount.

4.3 Indication of any immediate medical attention and special treatment needed

Indication of any immediate medical attention and special treatment needed

Not relevant for this substance.

5. Fire fighting measures

5.1 Extinguishing media

Extinguishing media

Appropriate extinguishing media.

Dry chemical powder, alcohol resistant foam, halon (may not be permissible in some countries), CO₂, water spray (fog).

Unsuitable extinguishing media

Water stream may splash the burning liquid and spread fire.

5.2 Special hazards arising from the substance or mixture

Special hazards

Contact of glycerine with strong oxidizing agents such as Nitric Acid or other strong acids, Chromium Trioxide, Potassium Chlorate or Potassium Permanganate may cause an explosion. During burning poisonous acrolein may be formed.

5.3 Advice for firefighters

Advice for firefighters

Fire-fighters should use self-contained breathing apparatus to avoid exposure to smoke and vapour. Wear protective clothing to prevent contact with skin and eyes.

Protective equipment

Fire-resistant clothing, self-contained breathing apparatus

Additional information

Flammable Class IV. according to ČSN 650201

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

Personal precautions, protective equipment and emergency procedures.

Prevent contamination of clothes and shoes; avoid contact with the skin and eyes. When handling glycerine wear protective gloves and a mask.

Ventilate the contaminated area and eliminate all sources of ignition. Cover the area with spilled product with an absorbent (dry clay, sand or other non-combustible material), placed in sealed containers and transfer to a specialized company for disposal. Spillages residues can be removed with water and detergent.

6.1.2 For emergency responders

Advice for firefighters

Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

6.2 Environmental precautions

Environmental precautions

Minimize contamination of drains, surface and ground waters.

6.3 Methods and material for containment and cleaning up

6.3.1 Spill containment

Stop leak of material if possible. Eliminate all ignition sources near the spillage. Reduce the spillage to the smallest possible area.

6.3.2 Spill clean-up

Ventilate area and eliminate all ignition sources. Contain and recover large spills for salvage or disposal. Pick up small spills with absorbent materials as dry earth, sand or other non-combustible material and transfer to containers for properly disposal. Residues and small spillages may be washed away with water and detergent.

6.3.3 Other information

Avoid contact with strong oxidizing agents (see 5.2).

6.4 Reference to other sections

Reference to other sections

See also sections 5, 8 and 13

7. Handling and storage

7.1 Precautions for safe handling

Note: **Glycerol** is not classified as hazardous according to the criteria of the CLP Regulation (EC) No. 1272/2008. Specific Risk Management Measures are therefore not required. Nevertheless, the exposure of workers during and after normal operations should be minimized by the use of good industrial hygiene practice.

7.1.1 Recommendations for safe handling

No special precautions required, but avoid eye and skin contact as part of normal industrial hygiene. Prevent formation of mist. Eye and skin contact should be avoided if handling at elevated temperatures.

7.1.2 Occupational hygiene advice.

Do not eat, drink or smoke in work areas; wash hands after use; and remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Safe storage conditions

Store in clean tight containers to prevent moisture pickup from air. Can be stored in aluminium, stainless steel, fibreglass or resin lined steel vessels. Store in cool, well ventilated area. Keep container tightly closed. Protect from frost. Keep away from oxidizing agents, excessive heat, and ignition sources.

7.3 Specific end use(s)

Reference to other sections

See section 1.2

8. Exposure controls/personal protection

8.1 Control parameters

Control parameters

Maximum respirable fraction (glycerine mist) TWA, 10 mg/m³

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ventilation: Local exhaust – preferred
 Mechanical (general) – acceptable
 Provide ventilation to meet exposure limits; TWA 10mg/m³ (mist)

8.2.2 Individual protection measures**RESPIRATORY PROTECTION:**

If vapours or mists are generated, wear a NIOSH approved organic vapour/mist respirator.

PROTECTIVE CLOTHING:

Safety glasses, goggles, or face shield recommended to protect eyes from mists or splashing. Protective gloves recommended when heated to prevent skin contact.

OTHER PROTECTIVE MEASURES:

Employees must practice good personal hygiene, washing exposed areas of skin several times daily and laundering contaminated clothing before re-use.

8.2.3 Environmental exposure controls

Prevent product from entering drains.

9. Physical and chemical properties**9.1 Information on basic physical and chemical properties***Overview of physicochemical properties*

Appearance	Water white, clear liquid (20°C)
Odour	Bland odour, sweet taste
Odour threshold	N/A
pH	6,5 - 7
Melting point/freezing point	18°C , solidifies at much lower temperatures
Initial boiling point and boiling range	290°C
Flash point	199°C
Evaporation rate	N/A
Flammability (solid, gas)	According to Regulation (EC) č. 1272/2008 CLP - not flammable liquid. According to ČSN 65 0201 – Flammable liquid Class IV.
Upper/lower flammability or explosive limits	N/A
Vapour pressure	< 0.0008 mm Hg
Vapour density	N/A

<i>Overview of physicochemical properties</i>	
Relative density	approx. 1,262 g/cm ³ at 25°C
Solubility(ies)	Completely miscible with water. Miscible with lower alcohols, partially with acetone, poorly with FAME.
Auto-ignition temperature	approx. 412°C
Decomposition temperature	Thermal decomposition may appears at temperatures above 200°C.
Viscosity	1410 mPa.s (20°C)
Explosive properties	Not explosive.
Oxidising properties	Not oxidizing properties.

9.2 Other information

<i>Other information</i>
N/A

10. Stability and reactivity

10.1 Reactivity

<i>Reactivity hazards</i>
This product is stable and hazardous reaction will not occur under recommended handling and storage conditions.

10.2 Chemical stability

<i>Chemical stability</i>
Concentrated is hygroscopic. The substance is stable under normal ambient and hazardous reaction will not occur. Keep away from oxidizing agents, excessive heat, and ignition sources.

10.3 Possibility of hazardous reactions

<i>Possibility of hazardous reactions</i>
See 5.2, 10.5 and 10.6

10.4 Conditions to avoid

<i>Conditions to avoid</i>
See 5.2 and 10.5

10.5 Incompatible materials*Incompatible materials*

Strong oxidizing agents.

10.6 Hazardous decomposition products*Hazardous decomposition products*

Thermal decomposition may occur above 200°C. Thermal decomposition may release acrolein.

11. Toxicological information**11.1 Information on toxicological effects***Information on the following hazard classes: Glycerol*

<i>Hazard class</i>		<i>Result</i>	<i>Test method</i>
Acute toxicity	Oral:	LD50 (rat): 27,2 g/Kg	N/A
	Dermal :	N/A	N/A
Skin corrosion/irritation;		Not irritating	
Serious eye damage/irritation;		Not irritating	
Sensitisation;	Respiratory sensitisation	No information but no respiratory sensitisation is expected.	
	Skin sensitisation;	Not sensitizing	Patch test (human)
Germ cell mutagenicity;	Reverse gene mutation assay	N/A	N/A
	In vitro cytogenicity test	Negative	Galloway s.m. Source IUCLID data set (Simel s.p.a. , Lever Brother Ltd.)
	In vitro mammalian cell mutation test.	N/A	N/A
Carcinogenicity;		No increase in tumor incidence	Oral feed (rats), 2 years of exposure. Source: IUCLID data set (Simel s.p.a.)
Reproductive toxicity;	Developmental effects	N/A	
	Fertility effects		
STOT-single exposure;		No information	No information
STOT-repeated exposure;		N/A	
Aspiration hazard.		No information	No information

CMR (Carcinogenic, Mutagenic and Repto-toxic) properties assessment

N/A

The effects of the substance via each possible route of exposure

See section 2 for effects of the substance.

Potential adverse health effects and symptoms

See section 2 for effects of the substance.

Information on whether delayed or immediate effects

See section 2 for effects of the substance.

Interactions

None expected.

Other information

See section 2 for effects of the substance

12. Ecological information**12.1 Toxicity**

LC ₅₀ , fish:	5000 mg/l
LC ₅₀ , algae	>2900 mg/l
LC ₅₀ , <i>Pseudomonas putida</i>	>10000 mg/l

12.2 Persistence and degradability

Readily biodegradable

BOD₅ / COD: 0.87 / 1.16 (gO₂/g)

12.3 Bioaccumulative potential

N/A

12.4 Mobility in soil

N/A

12.5 Results of PBT and vPvB assessment

Substance is not considered PBT either vPvB.

12.6 Other adverse effects

N/A

13. Disposal considerations**13.1 Waste treatment methods***Waste treatment methods*

Follow local, state and EU disposal regulations. It is not allowed to dispose any amount of glycerol via sinks, drains or into the immediate environment. Contact a specialized company for disposal of contaminated absorbent. Disposal of wastes and useless residues shall be carried out in accordance with the applicable waste legislation (185/2001 Coll. Act on Waste). Wastes can be disposed of only by an authorized person. Contaminated absorbent material may be due to biodegradability stored on approved landfills.

14. Transport information

Not restricted for transport

Not classified in ADR/RID, AND/ADNR, IMDG, IATA/ICAO-DGR

15. Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture***Specific safety, health and environmental regulations/legislation for the substance.*

IATA - International Air Transport Association

RID - Regulations for international rail transport of dangerous goods.

ADR - European Agreement concerning international carriage of dangerous goods by road.

ČSN 650201 - Flammable liquids. Plants and warehouses.

Gov. Regulation no. 361/2007 Coll., laying down conditions for the protection of health of workers at work as amended.

Act no. 201/2012 Coll. on Air Protection, as amended.

Act no. 350/2011 Coll. on chemical substances and mixtures, and amending certain laws (Chemical Law)

Decree no. 93/2016 Coll. on waste catalogue

Act no. 111/1994 Coll. on road transport, as amended

Act no. 185/2001 Coll. on wastes, as amended

Act no. 254/2001 Coll. on waters, as amended

EC Regulation no. 1907/2006 Registration, evaluation, authorization and restriction of chemicals, establishing a European Chemicals Agency (REACH)

EC Regulation no. 453/2010. Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH - MSDS)

EC Regulation no. 1272/2008 on classification, labeling and packaging of substances and mixtures (CLP)

15.2 Chemical safety assessment*Chemical Safety Assessment*

Exempted under REACH registration, no chemical assessment required

SECTION 16: Other information

ATTENTION: This safety data sheet reflects our present knowledge and describes the product as to its safety requirements. It does not assure any characteristics but gives recommendations for safe storage and handling measures. Receivers have to observe any legal regulation in their own responsibility.

SDS revision information

First edition of the document: Revision 0 from 25. 1. 2013 - Document Edition version MSDS
 Second edition of the document: Revision 1 from 31. 5. 2015 - Document Edition version MSDS
 Third edition of the document: Revision 2 from 26. 8. 2016 - Document Edition version MSDS

Key/Abbreviations

CSA: Chemical Safety Assessment
 PBT: Substance with Persistent, Bioaccumulative and Toxic properties.
 vPvB: Substance with very Persistent and very Bioaccumulative properties.

Key References

ECHA - European Chemical Agency - Information on chemicals
<http://echa.europa.eu/information-on-chemicals>

Classification information for mixtures

Not relevant

List of relevant hazard statements and/or precautionary statements.

Not relevant. Described in Sections 2 to 15.

Advice on appropriate training for employees

Regular training in the scope safety handling, health and environment.