SAFETY DATA SHEET

GLYCERINE (GLYCEROL)

CAS No.: 56-81-5

This Safety Data Sheet is issued by Suraj Chemicals as the distributor/supplier of record, based on manufacturer and published GHS / regulatory reference data for this substance. Users should also consult the specific manufacturer's SDS where available.

1. IDENTIFICATION

GHS Product identifier

GLYCERINE (GLYCEROL)
1,2,3-Propanetriol; Glycerin
CAS: 56-81-5

Other means of identification

Formula: $C_3H_5(OH)_3$ | RTECS: MA8050000

Recommended use of the chemical and restrictions on use

Relevant uses: Humectant, solvent and plasticizer in cosmetics, pharmaceuticals and personal care formulation; raw material for alkyd resins, soaps and food-grade applications (subject to end-user compliance with applicable food-grade purity requirements). For industrial user only.

Uses advised against: All uses not specified in this section or in section 7.3.

Supplier's details

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2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS:
Glycerine does not carry a harmonised mandatory GHS/CLP classification. Consistent with the source supplier data ("slightly hazardous in case of skin contact, eye contact, ingestion or inhalation", with no assigned EC hazard symbol or risk phrase) and well-established public classification data for CAS 56-81-5, the product is:

Not Classified as a hazardous substance/mixture under GHS criteria.

Glycerine is a low-hazard material widely used in food, pharmaceutical and cosmetic applications. Mist/vapour may cause mild, transient irritation on direct or prolonged contact (see Section 11).

GHS label elements, including precautionary statements

GHS: No signal word required (Not Classified)

Hazard statements
None assigned.

Precautionary statements
P264: Wash hands thoroughly after handling.
P280: Wear protective gloves/eye protection when handling in bulk or at elevated temperature.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501: Dispose of contents/container in accordance with local regulations.

Other hazards which do not result in classification

Hygroscopic – absorbs moisture from air. May be combustible at high temperature. The substance may be toxic to kidneys with repeated or prolonged excessive exposure (see Section 11).

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances

Chemical description: Glycerine (Glycerol), Trihydric Alcohol

In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 56-81-5	Glycerine (Glycerol) – Not Classified	100%

To obtain more information on the hazards of the substances, consult sections 11, 12 and 16.

Mixtures

Non-applicable

4. FIRST AID MEASURES

Description of necessary first-aid measures

Low hazard under normal industrial/workplace conditions. Request medical assistance if symptoms occur or persist, showing the SDS of this product.

By inhalation
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

By skin contact
Wash with soap and water. Cover irritated skin with an emollient. Get medical attention if irritation develops.

By eye contact
Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

By ingestion/aspiration
Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing. Get medical attention if symptoms appear.

Most important symptoms/effects, acute and delayed	Low toxicity except with very large doses. Large ingested doses can cause gastrointestinal tract irritation with thirst, nausea, vomiting and diarrhoea, and may affect the central nervous system, urinary system/kidneys, cardiovascular system and liver, and elevate blood sugar. See sections 2 and 11.
Indication of immediate medical attention and special treatment needed, if necessary	Not relevant for normal industrial exposure; treat symptomatically for large accidental ingestions.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Suitable: Small fire – dry chemical powder. Large fire – water spray, fog or foam.
Unsuitable: Do not use a direct water jet.

Specific hazards arising from the chemical

May be combustible at high temperature. Flash point (closed cup) 160°C; autoignition temperature 370°C. Products of combustion include carbon oxides (CO, CO_2) and irritating/toxic fumes. Glycerin is incompatible with strong oxidizers (chromium trioxide, potassium chlorate, potassium permanganate) and may explode on contact with these compounds.

Special protective actions for fire-fighters

As in any fire, wear self-contained positive-pressure breathing apparatus and full protective gear.

Additional provisions

Cool fire-exposed containers with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

No special requirement for small spills; use PPE described in Section 8.

For emergency responders

Splash goggles, full protective suit, vapour respirator, boots and gloves for large spills; a self-contained breathing apparatus should be used to avoid inhalation.

Environmental precautions

Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources.

Methods and materials for containment and cleaning up

Small spill: dilute with water and mop up, or absorb with inert dry material and place in an appropriate waste container. Large spill: stop leak if without risk; absorb with inert material and place in an appropriate waste container; use water spray to reduce vapours. Finish cleaning by spreading water on the contaminated surface per local/regional authority requirements.

Reference to other sections

See sections 8 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling

A. General precautions for safe use

Keep away from heat and sources of ignition. Ground all equipment containing material. Do not breathe gas/fumes/vapour/spray. Wear suitable protective clothing.

B. Technical recommendations for the prevention of fires and explosions

Keep away from incompatibles such as strong oxidizing agents.

C. Technical recommendations on general occupational hygiene

Do not ingest. Wash hands after handling.

D. Technical recommendations to prevent environmental risks

Avoid atmospheric emissions and environmental spillage; see subsection 6.2.

Conditions for safe storage, including any incompatibilities

A. Specific storage requirements

Storage condition	Cool, well-ventilated area
Container	Keep tightly closed – hygroscopic

B. General conditions for storage

Keep container tightly closed in a cool, well-ventilated area away from heat and ignition sources. For additional information see subsection 10.5.

Specific end use(s)

Except for the instructions already specified, it is not necessary to provide any special recommendation regarding the uses of this product.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Identification	Occupational Exposure Limit Type	Value
Glycerine (mist) CAS: 56-81-5	ACGIH TWA (Inhalation, total)	10 mg/m³
	OSHA PEL (Inhalation, respirable)	5 mg/m³

Appropriate engineering controls

Provide exhaust ventilation or other engineering controls to keep airborne concentrations of mist/vapour below the occupational exposure limits. Ensure eyewash stations and safety showers are proximal to the work-station location.

B. Respiratory protection

Vapour respirator recommended for bulk handling or elevated-temperature use; ensure use of an approved/certified respirator.

C. Specific protection for the hands

Wear suitable gloves.

D. Eye and face protection

Safety glasses; splash goggles recommended where splashing may occur.

E. Bodily protection

Lab coat/protective clothing for bulk handling.

F. Additional emergency measures

Eyewash stations and safety showers should be available near the work area.

Environmental exposure controls

Avoid environmental spillage of the product and its container.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	
Physical state at 20°C	Liquid (viscous, syrupy)
Appearance	Clear, colorless liquid
Color	Clear colorless
Odor	Mild
Odour threshold	Not available
Volatility	
Boiling point at atmospheric pressure	290°C (554°F)
Vapour pressure at 20°C	0 kPa (negligible)
Evaporation rate	Not available
Product Description	
Specific gravity (water = 1)	1.2636
Molecular weight	92.09 g/mol
pH (1% solution)	Not available
Vapour density (air = 1)	3.17
Partition coefficient n-octanol/water (log Pow)	–1.8
Solubility in water	Miscible in cold and hot water; miscible in alcohol; partially soluble in acetone; insoluble in carbon tetrachloride, benzene, chloroform, petroleum ethers and oils
Melting point/freezing point	19°C (66.2°F)
Flammability	
Flash Point (closed cup)	160°C (320°F)
Flammability (liquid)	Slightly flammable to flammable in presence of open flame/heat/oxidizers; non-flammable in presence of shocks
Autoignition temperature	370°C (698°F)
Lower flammability limit	0.9%

Other information

Explosive properties	Explosive in presence of oxidizing materials
Oxidising properties	Not oxidising
Chemical formula	$C_3H_5(OH)_3$

10. STABILITY AND REACTIVITY

Reactivity

Highly reactive with oxidizing agents. Non-corrosive in presence of glass.

Chemical stability

The product is stable under normal conditions of storage, handling and use. Hygroscopic.

Possibility of hazardous reactions

Glycerin may react violently with acetic anhydride, aniline and nitrobenzene, chromic oxide, lead oxide and fluorine, phosphorous triiodide, ethylene oxide (with heat), silver perchlorate, sodium peroxide and sodium hydride. Explosive glyceryl nitrate is formed from a mixture of glycerin with nitric and sulfuric acids. Glycerin and chlorine may explode if heated and confined. Hazardous polymerization will not occur.

Conditions to avoid

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not available	Not applicable	Avoid excess heat/ignition sources	Not available	Hygroscopic – avoid moisture

Incompatible materials

Strong oxidizers such as chromium trioxide, potassium chlorate, or potassium permanganate; acetic anhydride, aniline, nitrobenzene, chromic oxide, lead oxide, fluorine, phosphorous triiodide, ethylene oxide, silver perchlorate, sodium peroxide, sodium hydride, nitric/sulfuric acid mixtures, and chlorine.

Hazardous decomposition products

Carbon oxides (CO, CO_2) and irritating/toxic fumes on combustion/decomposition.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Low hazards for normal industrial or workplace conditions. In case of exposure that is repetitive, prolonged, or at concentrations higher than recommended, adverse health effects may result depending on the means of exposure:

A. Ingestion (acute effect)

Low toxicity except with very large doses; can cause gastrointestinal irritation, thirst (dehydration), nausea, vomiting or diarrhoea. Acute oral toxicity (LD50): 12,600 mg/kg (Rat), 4090 mg/kg (Mouse).

B. Inhalation (acute effect)

Due to low vapour pressure, inhalation of vapours at room temperature is unlikely; inhalation of mist may cause respiratory tract irritation. Mist LC50 (acute): > 570 mg/m³, 1 hour (Rat).

C. Contact with skin and eyes (acute effect)

Slightly hazardous – may cause skin irritation (may be absorbed through skin); eye contact may cause irritation with stinging, redness, burning sensation and tearing, but no eye injury. Dermal LD50 (Rabbit): 10,000 mg/kg.

D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity)

Carcinogenic, mutagenic, teratogenic and developmental toxicity effects: not available/not established for this substance.

E. Sensitizing effects

Not available.

F. Specific target organ toxicity (STOT) – single exposure

Large ingested doses may affect behaviour/central nervous system, urinary system/kidneys, cardiovascular system and liver, and may elevate blood sugar.

G. Specific target organ toxicity (STOT) – repeated exposure

May cause damage to kidneys; repeated or prolonged exposure can produce target organ damage. Prolonged/repeated ingestion may affect blood (haemolysis, changes in white blood cell count), endocrine system (adrenal weight change), respiratory system, and may cause kidney injury.

H. Aspiration hazard

Not available.

Product-specific toxicological information

Identification	Acute Toxicity	Genus
Glycerine CAS: 56-81-5	LD50 oral: 12,600 mg/kg	Rat
	LD50 oral: 4090 mg/kg	Mouse
	LD50 dermal: 10,000 mg/kg	Rabbit

12. ECOLOGICAL INFORMATION

Not expected to be significantly ecotoxic under normal use.

Toxicity

Acute Toxicity	Species	Genus
LC50: 58.5 ppm (96h)	Trout	Fish

Persistence and degradability

Possibly hazardous short-term degradation products are not likely; long-term degradation products may arise. Degradation products are less toxic than the parent product.

Bioaccumulative potential

Log Pow: –1.8 – low bioaccumulation potential.

Mobility in soil

Miscible with water; expected to be mobile.

Results of PBT and vPvB assessment

Not expected to meet PBT/vPvB criteria.

Other adverse effects

Not described.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste must be disposed of in accordance with central, state and local environmental control regulations. Refer to national and local regulations on waste management.

14. TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR 2023 / RID 2023)

14.1 UN number	Not classified as Dangerous Goods
14.2 UN proper shipping name	Non-applicable
14.3 Transport hazard class(es)	Non-applicable
14.4 Packing group	Non-applicable
14.5 Environmental hazard	No
14.6 Special precautions for user	Non-hazardous for transport under standard road/rail regulations
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by sea (IMDG 41-22)

14.1 UN number	Not classified as Dangerous Goods
14.2 UN proper shipping name	Non-applicable
14.3 Transport hazard class(es)	Non-applicable
14.4 Packing group	Non-applicable
14.5 Marine pollutant	No
14.6 Special precautions for user	Non-hazardous for transport (IMDG/UN: Not classified)
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by air (IATA/ICAO 2024)

14.1 UN number	Not a DOT/IATA-controlled material
14.2 UN proper shipping name	Non-applicable
14.3 Transport hazard class(es)	Non-applicable
14.4 Packing group	Non-applicable
14.5 Environmental hazard	No
14.6 Special precautions for user	Not applicable
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

15. REGULATORY INFORMATION

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

This product is hazardous per the definition of standard hazard communication standards (equivalent to OSHA 29 CFR 1910.1200) owing to its listing on relevant chemical right-to-know inventories; it is not otherwise a specially regulated or controlled substance. Listed on the European Inventory of Existing Commercial Chemical Substances (EINECS) and TSCA (USA).

Other legislation

Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989
The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)
Food Safety and Standards Act, 2006 (applicable only to food/pharma-grade material)

16. OTHER INFORMATION

Legislation related to safety data sheets

This safety data sheet has been designed in accordance with Annex 4 – Guidance on the preparation of Safety Data Sheets of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Texts of the legislative phrases mentioned in sections 2 and 3

No GHS hazard statements are assigned to this product (Not Classified). Historical DSCL(EEC) notation on the source manufacturer data: S24/25 – Avoid contact with skin and eyes.

The phrases indicated do not refer to the product itself unless otherwise noted; they are present merely for informative purposes and refer to the individual components which appear in section 3.

NFPA / HMIS ratings (as reported by original manufacturer)

	Health	Fire	Reactivity
NFPA	1	1	0
HMIS	1	1	0

Advice related to training

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources

Manufacturer's Material Safety Data Sheet for Glycerin; standard published toxicological/physical reference data for CAS 56-81-5 (NFPA Fire Protection Guide to Hazardous Materials; NIOSH ICSC; CHRIS).

Abbreviations and acronyms

RTECS: Registry of Toxic Effects of Chemical Substances | LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | Log Pow: Octanol-water partition coefficient | PBT: Persistent, Bioaccumulative and Toxic | vPvB: Very Persistent and very Bioaccumulative | WHMIS: Workplace Hazardous Materials Information System

Disclaimer: The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product; it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within Suraj Chemicals' awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

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