



SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0
Creation Date: July 15, 2019
Revision Date: July 15, 2019

SECTION 1: Identification

1.1 GHS Product identifier

Product name Glycerol

1.2 Other means of identification

Product number -
Other names Glycerin; 1,2,3-propanetriol; Glycerol

1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.
Uses advised against no data available

1.4 Supplier's details

Company Shanghai Yien Chemical Technology Co., Ltd
Address Building 6, 28 Yingong Road, Fengxian District, Shanghai
Chemical Industry Zone, Shanghai, 201400, China
Telephone +86-400-133-2688

1.5 Emergency phone number

Emergency phone number +86-400-133-2688
Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT
+8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Not classified.

2.2 GHS label elements, including precautionary statements

Pictogram(s) No symbol.
Signal word No signal word
Hazard statement(s) none
Precautionary statement(s) none
Prevention none
Response none
Storage none
Disposal none

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Glycerol	Glycerol	56-81-5	200-289-5	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest.

Following skin contact

Rinse skin with plenty of water or shower. Rinse skin with plenty of water or shower.

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Rinse mouth.

4.2 Most important symptoms/effects, acute and delayed

No hazard (USCG, 1999)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

The clinician should attend to the management of dehydration, electrolyte imbalance (hypokalemia and hyponatremia), hyperglycemia, and acidosis or alkalosis. ... Osmotic diuretics

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Water or foam may cause frothing.

5.2 Specific hazards arising from the chemical

This chemical is combustible. (NTP, 1992)

5.3 Special protective actions for fire-fighters

Use water spray, alcohol-resistant foam, dry powder, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ventilation. Collect leaking and spilled liquid in covered containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.2 Environmental precautions

Ventilation. Collect leaking and spilled liquid in covered containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.3 Methods and materials for containment and cleaning up

Wear approved respiratory protection, chemically compatible gloves and protective clothing. Wipe up spillage or collect spillage using a high efficiency vacuum cleaner. Avoid breathing vapor. Place spillage in appropriately labelled container for disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO open flames. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Separated from strong oxidants. Glycerol should preferably be stored at 40 - 60 deg C under nitrogen blanketing. It is not corrosive and presents little risk of ignition because of its high flash point. Highly concentrated glycerol does not corrode steel, but storage tanks of carbon steel must be protected by surface coating to prevent rusting by residual moisture. Glycerol is therefore usually stored in tanks of stainless steel or aluminum.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

MAK: (inhalable fraction): 200 mg/m³; peak limitation category: I(2); pregnancy risk group: C

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

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

Eye/face protection

Wear safety goggles.

Skin protection

Protective gloves.

Respiratory protection

Use ventilation.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Liquid. Viscous.
Colour	Clear, water-white.
Odour	MILD ODOR
Melting point/freezing point	18.17 °C. Atm. press.:Ca. 101.3 kPa.
Boiling point or initial boiling point and boiling range	290 °C. Atm. press.:760 mm Hg.
Flammability	Class IIIB Combustible Liquid: Fl.P. at or above 200°F.
Lower and upper explosion	no data available

limit/flammability limit	
Flash point	199 °C. Atm. press.:Ca. 101.3 kPa.;177 °C. Atm. press.:Ca. 101.3 kPa.
Auto-ignition temperature	370 °C. Remarks:No pressure reported. Usually autoflammability is measured at atmospheric pressure.
Decomposition temperature	no data available
pH	Neutral to litmus
Kinematic viscosity	dynamic viscosity (in mPa s) = 1 412. Temperature:20°C.;dynamic viscosity (in mPa s) = 612. Temperature:30.0°C.;dynamic viscosity (in mPa s) = 14.8. Temperature:100.0°C.
Solubility	greater than or equal to 100 mg/mL at 64° F (NTP, 1992)
Partition coefficient n-octanol/water	log Pow = -1.75. Temperature:25 °C.
Vapour pressure	0.003 mm Hg. Temperature:50 °C.;0.195 mm Hg. Temperature:100 °C.;4.3 mm Hg. Temperature:150 °C.
Density and/or relative density	1.261 g/ml. Temperature:20 °C.
Relative vapour density	3.1 (vs air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Decomposes on heating. This produces corrosive fumes of acrolein. Reacts with strong oxidants. This generates fire and explosion hazard.

10.2 Chemical stability

Mixtures of glycerin with water, ethanol (95%), and propylene glycol are chemically stable. Glycerin may crystallize if stored at low temperatures; the crystals do not melt until warmed to 20 deg C.

10.3 Possibility of hazardous reactions

GLYCERINE is incompatible with strong oxidizers. It is also incompatible with hydrogen peroxide, potassium permanganate, nitric acid + sulfuric acid, perchloric acid + lead oxide, acetic anhydride, aniline + nitrobenzene, Ca(OCl)₂, CrO₃, F₂ + PbO, KMnO₄, K₂O₂, AgClO₄ and NaH. A mixture with chlorine explodes if heated to 158-176° F. It reacts with acetic acid, potassium peroxide, sodium peroxide, hydrochloric acid, (HClO₄ + PbO) and Na₂O₂. Contact with potassium chlorate may be explosive. It also reacts with ethylene oxide, perchloric acid, nitric acid + hydrofluoric acid and phosphorus triiodide. (NTP, 1992)

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Exothermic interaction of granular /sodium/ hydride with undiluted (viscous) glycerol with inadequate stirring caused charring to occur.

10.6 Hazardous decomposition products

Pure glycerin is not prone to oxidation by the atmosphere under ordinary conditions, but is decomposes on heating with the evolution of toxic acrolein.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD₅₀ Rat oral 12.6 g/kg
- Inhalation: LC₅₀ Rat inhalation > 570 mg/cu m/1 hr
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

Evaporation at 20°C is negligible; a nuisance-causing concentration of airborne particles can, however, be reached quickly on spraying.

SECTION 12: Ecological information**12.1 Toxicity**

- Toxicity to fish: LC50 - *Oncorhynchus mykiss* (previous name: *Salmo gairdneri*) - 54 000 mg/L - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: LC50 - *Daphnia magna* - 1 955 mg/L - 48 h.
- Toxicity to algae: EC3 - *Scenedesmus quadricauda* - > 10 000 mg/L - 8 d.
- Toxicity to microorganisms: Toxicity Threshold - *Pseudomonas putida* - > 10 000 mg/L - 16 h.

12.2 Persistence and degradability

AEROBIC: Glycerin, present at 100 mg/L, reached 63% of its theoretical BOD in 2 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test(1). Biodegradation rate constants of 0.258/day and 0.200/day in respirometric test systems employing activated sludge have also been reported, corresponding to 68% and 78% degradation, respectively(2).

12.3 Bioaccumulative potential

An estimated BCF of 3 was calculated in fish for glycerin(SRC), using a log Kow of -1.76(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of glycerin can be estimated to be 1(SRC). According to a classification scheme(2), this estimated Koc value suggests that glycerin is expected to have very high mobility in soil.

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

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

Chemical name	Common names and synonyms	CAS number	EC number
Glycerol	Glycerol	56-81-5	200-289-5
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Not Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.

Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Listed.
Vietnam National Chemical Inventory	Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)	Listed.
Korea Existing Chemicals List (KECL)	Listed.

SECTION 16: Other information

Information on revision

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Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Any questions regarding this SDS, Please send your inquiry to sds@xixisys.com

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