Chemical Safety Data Sheet MSDS / SDS

Glycerol SDS

Revision Date:2024-04-25 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name: Glycerol

CAS: 56-81-5

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

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

Company Identification

Company: Chemicalbook.in

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

Telephone: +91 9550333722

SECTION 2: Hazards identification

Classification of the substance or mixture

Not classified.

GHS label elements, including precautionary statements

Signal word: No signal word

Hazard statement(s)

none

Precautionary statement(s)

Prevention

none

Response

none

Storage

none

Disposal

none

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

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

SECTION 4: First aid measures

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.

Most important symptoms/effects, acute and delayed

No hazard (USCG, 1999)

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: Firefighting measures

Suitable extinguishing media

Water or foam may cause frothing.

Specific hazards arising from the chemical

This chemical is combustible. (NTP, 1992)

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

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.

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.

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

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.

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

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

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.

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 limit/flammability limit:	no data available
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

Reactivity

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

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.

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, $Ca(OCl)_2$, CrO_3, F_2 + PbO, $KMnO_4$, K_2O_2, $AgClO_4$ and NaH. A mixture with chlorine explodes if heated to 158-176° F. It reacts with acetic acid, potassium peroxide, sodium peroxide, hydrochloric acid, ($HClO_4$ + PbO) and Na_2O_2. Contact with potassium chlorate may be explosive. It also reacts with ethylene oxide, perchloric acid, nitric acid + hydrofluoric acid and phosphorus triiodide. (NTP, 1992)

Conditions to avoid

no data available

Incompatible materials

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

Hazardous decomposition products

Pure gycerin 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

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.

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).

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).

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.

Other adverse effects

no data available

SECTION 13: Disposal considerations

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

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.)

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.)

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.)

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.)

Environmental hazards

ADR/RID: No
IMDG: No
IATA: No

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

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

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.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

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/