

Safety Data Sheet

Product name: Glycerol

CAS No.: 56-81-5

Prepared in accordance with GB/T 16483, GB/T 17519

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

>Product identifier

- Product name: Glycerol
- CBnumber: CB5339206
- CAS: 56-81-5
- EINECS Number: 200-289-5
- Synonyms: Glycerin, glycerol

>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: Linyi Tuohui New Materials Co., Ltd.
- Address: Room A6159, 6F, Building 1, Linyi Software Park, No.6 Yihe Road, Zhimadun Subdistrict, Yishui New Area, Linyi City, Shandong Province, China
- Telephone: +86 176 6460 5089 (Manager Niu) / +86 130 4664 1786 (Manager Li)
- Email: nathan@tuohui-chem.com
- WhatsApp: +86 176 6460 5089
- Emergency telephone: +86 176 6460 5089

SECTION 2: Hazards identification

>GHS Label elements, including precautionary statements

- Symbol(GHS)



- Signal word Danger

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 Wash hands thoroughly after handling.

P264 Wash skin thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 IF eye irritation persists: Get medical advice/attention.

P370+P378 In case of fire: Use ... for extinction.

P403+P235 Store in a well-ventilated place. Keep cool.

Hazard statements

H225 Highly Flammable liquid and vapour

H315 Causes skin irritation

H319 Causes serious eye irritation

H320 Causes eye irritation

SECTION 3: Composition/information on ingredients

>Substance

- Product name: Glycerol
- Synonyms: Glycerin, glycerol
- CAS: 56-81-5
- EC number: 200-289-5
- MF: C₃H₈O₃
- MW: 92.09

SECTION 4: First aid measures

>Description of first aid measures

If inhaled

After inhalation: fresh air.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

In case of eye contact

After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed

After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

>Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

>Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

>Extinguishing media**Suitable extinguishing media**

Water Foam Carbon dioxide (CO₂) Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

>Special hazards arising from the substance or mixture

Carbon oxides Combustible.

Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

>Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.

>Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system.

>NFPA 704

1

0

SECTION 6: Accidental release measures

>Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

>Environmental precautions

Do not let product enter drains.

>Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb). Dispose of properly. Clean up affected area.

>Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

>Precautions for safe handling

For precautions see section 2.2.

>Conditions for safe storage, including any incompatibilities

> Storage conditions

Tightly closed. hygroscopic

>Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

>control parameter

Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

>Exposure controls

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm Break through time: 480 min

Material tested:KCL 741 Dermatril L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0,11 mm Break through time: 480 min

Material tested:KCL 741 Dermatril L

Respiratory protection

Recommended Filter type: Filter A-(P2)

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

>Information on basic physicochemical properties

- Appearanceclear viscous
- Odourodorless
- Odour ThresholdNot applicable d) pH 5,5 - 8 Melting point/freezing point Initial boiling point and boiling range Melting point/range: 20 °C 182 °C at 27 hPa Flash point 199 °C at ca.1013,0 hPa - Pensky-Martens closed cup Evaporation rate No data available Flammability (solid, gas) Upper/lower flammability or explosive limits No data available Upper explosion limit: 19 %(V) at 1013 hPa Lower explosion limit: 2,7 %(V) at 1013 hPa Vapour pressure 0,26 hPa at 100 °C 5,7 hPa at 150 °C Vapour density 3,18 - (Air = 1.0) Relative density 1,25 g/mL Water solubility at 25 °C miscible Partition coefficient: n-octanol/water Autoignition temperature Decomposition temperature log Pow: -1,75 at 25 °C 370 °C No data available Viscosity Viscosity, kinematic: No data available Viscosity, dynamic: 1.412 mPa.s at 20 °C612 mPa.s at 30 °C14,8 mPa.s at 100 °C Explosive properties No data available Oxidizing properties No data available
- Melting point/freezing pointMelting point/range: 20 °C

- Initial boiling point and boiling range 182 °C at 27 hPa
- Flash point 199 °C at ca. 1013,0 hPa - Pensky-Martens closed cup
- Evaporation rate 320 °F
- Flammability (solid, gas) No data available
- Upper/lower flammability or explosive limits Upper explosion limit: 19 %(V) at 1013 hPa Lower explosion limit: 2,7 %(V) at 1013 hPa
- Vapour pressure 0,26 hPa at 100 °C 5,7 hPa at 150 °C
- Vapour density 3,18 - (Air = 1.0)
- Relative density 1,25 g/mL
- Water solubility at 25 °C miscible
- Partition coefficient: n-octanol/water log Pow: -1,75 at 25 °C
- Autoignition temperature 370 °C
- Decomposition temperature No data available
- Viscosity Viscosity, kinematic: No data available Viscosity, dynamic: 1.412 mPa.s at 20 °C 612 mPa.s at 30 °C 14,8 mPa.s at 100 °C
- Explosive properties No data available
- Oxidizing properties No data available
- λ_{max} : 260 nm A_{max} : 0.05
 λ : 280 nm A_{max} : 0.04

>Other safety information

Surface tension ca. 63,4 mN/m at 20 °C

Relative vapor density

3,18 - (Air = 1.0)

SECTION 10: Stability and reactivity

>Reactivity

Forms explosive mixtures with air on intense heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

>Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

>Possibility of hazardous reactions

No data available

>Conditions to avoid

Strong heating.

>Incompatible materials

Strong oxidizing agents

>Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

>Information on toxicological effects**Acute toxicity**

LD50 Oral - Rat - 27.200 mg/kg

Remarks: (ECHA)

LD50 Dermal - Rabbit - > 10.000 mg/kg

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

(ECHA)

Respiratory or skin sensitization**Germ cell mutagenicity**

No data available No data available

Carcinogenicity

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity**Specific target organ toxicity - single exposure****Specific target organ toxicity - repeated exposure****Aspiration hazard****Toxicity**

LD50 in rats (ml/kg): >20 orally; 4.4 i.v. (Bartsch)

SECTION 12: Ecological information

>Toxicity

Toxicity to fish

static test LC50 - Oncorhynchus mykiss (rainbow trout) - 54.000 mg/l - 96 h

Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates

Remarks: No data available(glycerine)

Toxicity to algae

Remarks: No data available(glycerine)

>Persistence and degradability

Biodegradability aerobic - Exposure time 2 d

Result: 90 % - Readily biodegradable. Remarks: (ECHA)

>Bioaccumulative potential

No data available

>Mobility in soil

>Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

>Toxics Screening Level

The ITSL for glycerin is 100 µg/m³ based on an 8 hour averaging time.

>Other adverse effects

No data available

SECTION 13: Disposal considerations

>Waste treatment methods

Incompatibilities

Glycerin may explode if mixed with strong oxidizing agents such as chromium trioxide, potassium chlorate, or potassium permanganate. In dilute solution, the reaction proceeds at a slower rate with several oxidation products being formed. Black discoloration of glycerin occurs in the presence of light, or on contact with zinc oxide or basic bismuth nitrate.

Incompatibilities

Incompatible with acetic anhydrides (especially in the presence of a catalyst), strong acids, caustics, aliphatic amines, and isocyanates. Strong oxidizers, e.g., chromium trioxide, potassium

chlorate, and potassium permanganate); can cause fire and explosion hazard. Hygroscopic (i.e., absorbs moisture from the air). Decomposes when heated, producing corrosive gas of acrolein.

> Product

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

Waste Disposal

Mixture with a more flammable solvent followed by incineration.

SECTION 14: Transport information

>UN number

ADR/RID: - IMDG: - IATA: -

>UN proper shipping name

ADR/RID: Not dangerous goods IMDG: Not dangerous goods IATA: Not dangerous goods

>Transport hazard class(es)

>Packaging group

>Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

>Special precautions for user

> Further information

Not classified as dangerous in the meaning of transport regulations.

SECTION 15: Regulatory information

>Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015:Not Listed. website: <https://www.mem.gov.cn/>

Measures for Environmental Management of New Chemical Substances

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Listed. website: <https://www.mee.gov.cn/>

EC Inventory:Listed.

European Inventory of Existing Commercial Chemical Substances (EINECS):Listed. website: <https://echa.europa.eu/>

Korea Existing Chemicals List (KECL):Listed. website: <http://ncis.nier.go.kr>
New Zealand Inventory of Chemicals (NZIoC):Listed. website: <https://www.epa.govt.nz/>
Philippines Inventory of Chemicals and Chemical Substances (PICCS):Listed. website:
<https://emb.gov.ph/>
United States Toxic Substances Control Act (TSCA) Inventory:Listed. website:
<https://www.epa.gov/>
Vietnam National Chemical Inventory:Listed. website: <https://chemicaldata.gov.vn/>

SECTION 16: Other information

>Abbreviations and acronyms

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

>References

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

【 9 】 IPCS - The International Chemical Safety Cards (ICSC), website:
<http://www.ilo.org/dyn/icsc/showcard.home>

【10】 Sigma-Aldrich, website: <https://www.sigmaaldrich.com/>