Glory Global
CO.,LTD

Material Safety Data Sheet

Product name	Glycerin

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

1.1. Product name	Glycerin
1.2. CAS-No.	56-81-5
1.3. Relevant identified uses of the substance or mixture and uses advised against	
Identified uses	Laboratory chemicals, Synthesis of substances
1.4. Details of the supplier of the safety data sheet	
Company	Glory Global CO.,LTD
Address	C-208, 10, Nowon-ro 15-gil, Nowon-gu, Seoul, Korea
Emergency Phone	+82 2 6223 0862

2. Hazards identification

2.1. Classification of the substance or mixture	Not a hazardous substance or mixture.
2.2. GHS Label elements, including precautionary	Not a hazardous substance or mixture.
2.3. Hazards not otherwise classified (HNOC) or not covered by GHS	None

3. Composition/information on ingredients

3.1. Substances

Synonyms	1,2,3-Propanetriol Glycerol Glycerin
Formula	C3H8O3
Molecular weight	92.09 g/mol
CAS No	56-81-5
EC-No.	200-289-5

Component	Classification	Concentration
Glycerol		
		≤100

4. First aid measures

4.1. Description of first aid measures

General advice	- Move out of dangerous area.
If inhaled	- If breathed in, move person into fresh air. If not breathing, give artificial respiration.
In case of skin contact	- Wash off with soap and plenty of water.
In case of eye contact	- Flush eyes with water as a precaution.
If swallowed	- Never give anything by mouth to an unconscious person. Rinse mouth with water.
4.2. 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
4.3. Indication of any immediate medical attention and special treatment needed	- No data available

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	- Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
5.2. Special hazards arising from the substance or mixture	- Carbon oxides
5.3. Special protective equipment and percautions for fire fighters	- Wear self-contained breathing apparatus for firefighting if necessary.
5.4. Further information	- No data available

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures	- Avoid breathing vapours, mist or gas. - For personal protection see section 8.

6.2. Environmental precautions – No special environmental precautions required.

6.3. Methods and materials for containment and cleaning – Keep in suitable, closed containers for disposal.

6.4. Reference to other sections – For disposal see section 13.

7. Handling and storage

7.1. Precautions for safe handling – For precautions see section 2.2.

7.2. Conditions for safe storage, including any incompatibilities – Keep container tightly closed in a dry and well-ventilated place.
– Hygroscopic.
– Storage class (TRGS 510): 10: Combustible liquids

7.3. Specific end use(s) – Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. Exposure controls/personal protection

8.1. Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Glycerol	56-81-5	TWA	5 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	15 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		PEL	10 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		PEL	5 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
	Remarks	The concentration and percentage of the particulate used for this limit are determined from the fraction passing a size selector with the following characteristics: Aerodynamic Diameter in Micrometers (unit density sphere)..... Percent Passing Selector 0 ..... 100 1 ..... 97 2 ..... 91 3 ..... 74 4 ..... 50 5 ..... 30 6 ..... 17 7 ..... 9 8 ..... 5 10 1		
		See Appendix D - Substances with No Established RELs		

8.2. Exposure controls

Appropriate engineering controls – General industrial hygiene practice.

Personal protective equipment

a) Eye/face protection – Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

b) Skin protection – Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

c) Body Protection – Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

d) Respiratory protection – Respiratory protection not required. For nuisance exposures use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

e) Control of environmental exposure – No special environmental precautions required.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Form: viscous Colour: clear
Odour	odourless
Odour Threshold	No data available
pH	5.5 - 8
Melting / freezing point	Melting point/range: 20 °C (68 °F) - lit.
Initial Boiling Point and Boiling Range	182 °C 360 °F at 27 hPa - lit.
Flash point	199 °C (390 °F) at ca.1013.0 hPa - Pensky-Martens closed cup
Evaporation rate	No data available

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	0.004 hPa at 50 °C (122 °F) 0.260 hPa at 100 °C(212 °F) 5.7 hPa at 150 °C(302 °F)
Vapour density	3.18 - (Air = 1.0)
Relative Density	1.25 g/cm3
Water solubility	miscible
Partition coefficient n-octanol/water	log Pow: -1.75 at 25 °C (77 °F)
Auto-ignition temperature	370 °C (698 °F)
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
9.2. Other safety information	
Surface tension	ca.63.4 mN/m at 20 °C (68 °F)
Relative vapour density	3.18 - (Air = 1.0)

10. Stability and reactivity

10.1. Reactivity	- No data available
10.2. Chemical stability	- Stable under recommended storage conditions.
10.3. Possibility of hazardous reactions	- No data available
10.4. Conditions to avoid	- No data available
10.5. Incompatible materials	- Strong oxidizing agents
10.6. Hazardous decomposition products	- Hazardous decomposition products formed under fire conditions.: Carbon oxides - Other decomposition products: No data available - In the event of fire: see section 5

11. Toxicological information

11.1. Information on toxicological effects	
Acute toxicity	LD50 Oral - Rat - 27,200 mg/kg Remarks: (ECHA) Inhalation: No data available LD50 Dermal - Rabbit - > 10,000 mg/kg No data available
Skin corrosion/irritation	
Serious eye damage/eye irritation	(ECHA)
Respiratory or skin sensitisation	No data available
Germ cell mutagenicity	No data available
11.2. Carcinogenicity	
IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
11.3. Reproductive toxicity	No data available Developmental Toxicity- Rat
11.4. Specific target organ toxicity - single exposure	No data available
11.5. Specific target organ toxicity - repeated exposure	No data available
11.6. Aspiration hazard	No data available
11.7. Additional Information	RTECS: MA8050000

12. Ecological information

12.1. Toxicity	
Fish	static test LC50 - Oncorhynchus mykiss (rainbow trout) - 54,000 mg/l - 96 h Remarks: (ECHA)
Daphnia and other aquatic invertebrates	Remarks: No data available(Glycerol)
Algae/aquatic plants	static test EC50 - Pseudokirchneriella subcapitata - 0.58 mg/l - 72 h
12.2. Persistence and degradability	
Biodegradability	aerobic - Exposure time 2 d Result: 90 % - Readily biodegradable. Remarks: (ECHA)
12.3. Bioaccumulative potential	- No data available
12.4. Mobility in soil	- No data available

12.5. Results of PBT and vPvB assessment	- PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
12.6 Other adverse effects	- An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. - Very toxic to aquatic life with long lasting effects.

13. Disposal considerations

13.1 Waste treatment methods

Product	- Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging	- Dispose of as unused product.

14. Transport information

14.1. DOT (US)	- Not dangerous goods
14.2. IMDG	- Not dangerous goods
14.3. IATA (Country variations may apply)	- Not dangerous goods
14.4. Further information	

15. Regulatory information

15.1. SARA 302 Components	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
15.2. SARA 313 Components	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
15.3. SARA 311/312 Hazards	Chronic Health Hazard
15.4. Massachusetts Right To Know Components	No components are subject to the Massachusetts Right to Know Act.
15.5. Pennsylvania Right To Know Components	- Glycerol - CAS-No.: 56-81-5 - Revision Date: 2007-03-01

16. Other information

16.1. Further information	- Always work safely around open hatches on bulk tanks. The low density makes flotation difficult for immersed person.