SAFETY DATA SHEET

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

1.1 Product identifiers

Product name:	Glycerin
CAS number:	56-81-5
Synonyms:	Glycerol; 1,2,3-Propanetriol; 1,2,3-Trihydroxypropane

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

Identified Uses: None specified.

1.3 Details of the supplier of the safety data sheet

Company	: Lab Alley, LLC 22111 Highway 71 West, Suite 601 Spicewood, Texas 78669 U.S.A.
Telephone	: 512-668-9918
Fax	: 512-886-4008

1.4 Emergency telephone

Emergency Phone #	: US & Canada: 1-800-535-5053	INFOTRAC
	International 1-352-323-3500	INFOTRAC

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Not a hazardous substance or mixture according to OSHA or to European Union legislation.

2.2 GHS Label elements, including precautionary statements

Pictogram:	Not a dangerous substance or mixture according to GHS.
Signal Word:	Not a dangerous substance or mixture according to GHS.
Hazard statement(s):	Not a dangerous substance or mixture according to GHS.
Precautionary statement(s):	Not a dangerous substance or mixture according to GHS.

Hazards not otherwise classified

No data available.

SECTION 3: Composition/information on ingredients

3.1 Components

Ingredient	CAS Number	Percent	Hazardous Chemical
Glycerin	56-81-5	99.7%	No

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled: If product mist or vapor causes respiratory irritation or distress, move the exposed person to fresh air immediately. If breathing is difficult or irregular, administer oxygen; if respiratory arrest occurs, start respiration by trained personnel. If unconscious, maintain an open airway. Loosed tight clothing such as a collar, tie, belt, or waistband. If symptoms persist or if the victim feels unwell, seek medical attention.

In case of skin contact: Flush skin with large amounts of water while removing contaminated clothing. Wash the affected area with soap and water followed by thorough rinsing. Wash contaminated clothing and shoes before reuse. If irritation persists, seek medical attention.

In case of eye contact: Immediately flush eyes with large amounts of water or saline solution for at least 15 minutes, occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do after first 2 minutes and continue rinsing. If irritation persists seek medical attention, preferably from an ophthalmologist.

In case of ingestion: Rinse mouth with water if the victim is conscious. Remove dentures if present. Do not induce vomiting unless directed to do so by medical personnel. Vomiting may occur spontaneously. To prevent aspiration of vomitous into the lungs, lay the victim on one side with the head lower than the waist. Never give anything by mouth to an unconscious or convulsing person. Do not leave the victim unattended. Seek immediate medical attention.

4.2 Most important symptoms and effects, both acute and delayed

May cause mild, transient eye irritation. Not expected to cause skin irritation. May cause mild, transient skin irritation in some individuals. Low hazard for usual industrial handling. Inhalation of mist may cause respiratory tract irritation. May cause gastrointestinal upset when ingested in large amounts. Symptoms may include headache, nausea, vomiting, abdominal pain and diarrhea.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable (and unsuitable) extinguishing media

Use extinguishing media suitable for the surrounding fire. Water jets or direct streams may spread the fire.

5.2 Specific hazards arising from the substance or mixture

Closed containers may rupture due to the buildup of pressure when exposed to extreme heat. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent or may be delayed. Obtain medical attention. **Explosion hazard** - This product is not considered to be an explosion hazard.

5.3 Special protective equipment and precautions for firefighters

Full protective equipment including self-contained breathing apparatus should be used. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion when exposed to extreme heat. Water contaminated by this material must be contained from being discharged to any waterway, sewer or drain to prevent environmental contamination.

5.4 Further information

No data available.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate non-essential personnel. Wear appropriate protective clothing and equipment designated in Section 8.2. Ventilate the area. Remove all sources of ignition. No smoking. Clean up spills immediately. Spill creates a slip hazard.

6.2 Environmental precautions

Avoid dispersal of spilled material or runoff and prevent contact with soil and entry into drains, sewers or waterways.

6.3 Methods and materials for containment and cleaning up

Approach spill from upwind direction. DO NOT flush large spills down the drain. Cover drains and contain spill. Cover spill with a large quantity of inert absorbent. Do not use combustible material such as sawdust. Collect material using non-sparking tools and place into an approved container for proper disposal. Observe possible material restrictions (Sections 7.2 and 10.5). Do not allow material or runoff from rinsing contaminated areas to enter floor drains or storm drains and ditches that lead to waterways. Dispose of in accordance with federal, state and local regulations.

6.4 Reference to other sections

For disposal see Section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Wear all appropriate personal protective equipment specified in Section 8.2, Do not get in eyes or on skin or clothing. Do not inhale mist or vapor. No smoking. If normal use of material presents a respiratory hazard, use only adequate ventilation or wear an appropriate respirator. Wash contaminated clothing and shoes thoroughly before reuse. Keep away from heat and sources of ignition.

Hygiene measures

Facilities storing or using this material should be equipped with an eyewash station and safety shower. Change contaminated clothing. Preventative skin protection is recommended. Wash hands thoroughly after use, before eating, drinking, smoking or using the lavatory.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Store in dry, cool, well-ventilated areas away from incompatible materials (see Section 10.5), food and drink. Transfer only to approved containers having correct labeling. Hygroscopic material! Keep containers tightly closed when not in use to prevent moisture absorption. Protect containers against physical damage. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Containers are hazardous when empty as they contain product residue. Use appropriate containment to avoid environmental contamination. Ventilate closed areas. Keep out of reach of children.

SECTION 8. Exposure controls/personal protection

8.1 Occupational exposure limits

Chemical Name	Exposure Limits
Glycerin	10 mg/m3 TWA ACGIH TLV, 5 mg/m3 TWA OSHA PEL (respirable fraction).

8.2 Exposure controls

Appropriate engineering controls

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Use adequate ventilation. Local exhaust is preferable. Refer to Section 7.1.

Personal protective equipment

Eye/face protection

Wear safety glasses with unperforated side shields or protective splash goggles during handling or use.

Skin and body protection

For long periods of exposure wear gloves made of natural rubber, nitrile rubber, PVC or those recommended by glove supplier for protection against materials in Section 3. Gloves should be impermeable to chemicals and oil. Breakthrough time of selected gloves must be grater than the intended use period. Wear protective clothing. Wear protective boots if the situation requires.

Respiratory protection

Always use an approved respirator when vapor/aerosols exceed permissible exposure limits. Where risk assessment shows air-purifying respirators are appropriate use a half-mask respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Follow OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.

Control of environmental exposure

Do not empty into drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid.
Appearance	Clear, colorless liquid.
Odor	Mild, characteristic.
Odor Thresh	No data available.
pH	5.5-8.0
Melting Point/Range	18 °C (64.4 °F)
Boiling Point/Range	290 °C (554°F), decomposes
Flash Point	177 °C (350.6 °F) COC
Evaporation Rate	No data available.
Flammability (solid, gas)	Not applicable.
Flammability or explosive limit	
Upper	: NA
Lower	: NA

Vapor Pressure	<0.01 hPa @ 20 °C
Vapor Density	No data available.
Density	No data available.
Solubility	Miscible.
Partition coefficient; n-octanol/water	log P_{OW} = -1.76
Autoignition Temp	400 °C (752 °F)
Decomposition Temp	No data available.
Viscosity	1,300 mPa.s @ 20 °C
Molecular Formula	C3H8O3
Molecular Weight	92.09
VOC Content(%)	No data available.
Oxidizing properties	None.

9.2 Other safety information

None.

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is stable under normal handling conditions and use.

10.2 Chemical stability

This material is stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4 Conditions to avoid

High temperatures, sources of ignition, hot surfaces, contact with incompatible materials.

10.5 Incompatible materials

Strong oxidizing agents, strong bases.

10.6 Hazardous decomposition products

Thermal decomposition products include oxides of carbon.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Oral: LD50, Rat: 12,600 MG/KG
Inhalation: LC50, Rat: >570 mg/m^3
Dermal: LD50, Rabbit: >10,000 mg/kg

Skin corrosion/irritation

May cause mild, transient skin irritation.

Serious eye damage/eye irritation

May cause mild, transient eye irritation.

Respiratory or skin sensitization

No data available.

Germ cell mutagenicity

No data available.

Carcinogenicity

No data available.

Reproductive toxicity

No data available.

Specific target organ toxicity - single exposure

No data available.

Specific target organ toxicity - repeated exposure

No data available.

Aspiration hazard

No data available.

Chronic effects

No data available.

11.2 Additional information

This product contains no substance present at levels greater than or equal to the 0.1% threshold (de minimis) that are identified as a probable, possible, potential or confined carcinogens by ACGIH, IARC, NTP or OSHA. No data is available regarding the mutagenicity or teratogenicity of this product, nor is there any available data that indicates that it causes developmental or fertility effects. Handle in accordance with good industrial hygiene and safety practices.

SECTION 12. Ecological information

12.1 Toxicity

Ecotoxicity:

Large discharges or spills of this material may be harmful to aquatic life.

Acute toxicity to fish:	LC50 - Carp, 48 h: 1,000 mg/l
Acute toxicity to aquatic invertebrates:	EC50 - Daphnia (Water flea), 48 h: 1,000 mg/l

12.2 Persistence and Degradability

This material is readily biodegradable.

12.3 Bioaccumulative Potential

This material will not bioaccumulate.

12.4 Mobility in Soil

The mobility of this material in soil is very high.

12.5 Results of PBT and vPvB assessment

This substance is not persistent, bioaccumulative and toxic (PBT) and not very persistent and very bioaccumulative (vPvB).

12.6 Endocrine disrupting properties

No data available.

12.7 Other adverse effects

Do not allow material to run into surface waters, wastewater or soil. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13. Disposal considerations

13.1 Waste Disposal Methods

Methods of disposal: The generation of waste should be avoided or minimized whenever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products in accordance with national, state and local regulations. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

DOT	Not regulated for transport
RID/ADR	Not regulated for transport
IATA/ICAO	Not regulated for transport
IMDG/IMO	Not regulated for transport (consult IMO regulations before transporting ocean bulk

SECTION 15: Regulatory information

US federal regulations

OSHA Hazard Communication Standard: This material is not classified as hazardous in accordance with OSHA 29 CFR 1910-1200.
OSHA Process Safety Management Standard: This product is not regulated under OSHA PSM Standard 29 CFR 1910.119.
EPA Risk Management Planning Standard: This product is not regulated under EPA RMP Standard (RMP) 40 CFR Part 68.
EPA Federal Insecticide, Fungicide and Rodenticide Act: This product is not a registered Pesticide under the FIFRA, 40 CFR Part 150.
Toxic Substance Control Act (TSCA) Inventory: All substances in this product are listed on the TSCA Inventory. This product is not subject to TSCA 12(b) Export Notification.
Drug Enforcement Administration (DEA) List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.4(f)(2)) and Chemical Code Number: Not listed.
Drug Enforcement Administration (DEA) Lists 1 & 2, Exempt Chemical Mixtures (21 CFR 1310.12(c)) and Code Number: Not listed.
Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS) Chemicals: Not listed.

Superfund Amendments and Reauthorization Act (SARA)
SARA Section 311/312 Hazard Categories: None.
SARA 313 Information: This material does not contain any substances that are subject to reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986.
SARA 302/304 Extremely Hazardous Substance: This material does not contain any substances that are subject to the reporting levels established by these sections of Title III of SARA.
SARA 302/304 Emergency Panning & Notification: This material does not contain any substances that are subject to the reporting levels established by these sections of Title III of SARA.

Comprehensive Response Compensation and Liability Act (CERCLA): No components of the product exceed the threshold (de minimis) reporting levels for hazardous wastes established by CERCLA.

SECTION 15: Regulatory information

Clean Air Act (CAA)
This product does not contain Hazardous Air Pollutants (HAPs) designated in CAA Section 112 (b).
This product does not contain Class 1 ozone depletors.
This product does not contain Class 2 ozone depletors.

Clean Water Act (CWA)
This product does not contain Hazardous Substances under the CWA.
This product does not contain Priority Pollutants.
This product does not contain Toxic Pollutants.

U.S. State Regulations
California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986
This product contains no chemical(s) known to the state of California to cause cancer birth defects or reproductive harm in concentrations that exceed the threshold (de minimis) reporting levels established under Proposition 65.

Other U.S. State Inventories
Glycerin (CAS #56-81-5) is listed on the following State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/Air Pollutants lists: MA, MN, NJ, PA, RI, WA.

Canada
WHMIS Hazard Classification
Not a dangerous product according to Hazardous Products Regulations (HPR) classification criteria.

Canadian National pollutant Release Inventory (NPRI): None of the components of this product are listed on the NPRI.

European Economic Community
WGK, Germany (Water danger/protection): 1 (slightly hazardous to water)

Global Chemical Inventory Lists

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory of Chemicals	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States	Toxic Substances Control Act (TSCA) Inventory	Yes

SECTION 16: Other information

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Disclaimer:
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.