



<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Consult a physician if irritation occurs.
<b>Skin contact</b>	Wash exposed skin with soap and plenty of water. Consult a physician if irritation occurs.
<b>Inhalation</b>	Remove to fresh air and keep at rest in a position comfortable for breathing. Consult a physician if breathing is difficult or other respiratory symptoms develop.
<b>Ingestion</b>	DO NOT induce vomiting. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** None identified.

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician** Treat symptomatically.

**5. FIRE-FIGHTING MEASURES**

<b><u>Suitable extinguishing media</u></b>	Use extinguishing measures appropriate to local circumstances and surrounding materials.
<b>Unsuitable extinguishing media</b>	None identified.
<b><u>Specific hazards arising from the chemical</u></b>	None identified.
<b>Hazardous combustion products</b>	Acrolein may be formed if product is burned or strongly heated, especially in acidic conditions.
<b><u>Explosion Data</u></b>	
<b>Sensitivity to Mechanical Impact</b>	None.
<b>Sensitivity to Static Discharge</b>	None.
<b><u>Protective equipment and precautions for firefighters</u></b>	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures**

**Personal Precautions** Use personal protective equipment.

**Environmental precautions**

**Environmental precautions** Prevent release to surface water.

**Methods and material for containment and cleaning up**

**Methods for Containment** Dike to collect large liquid spills.

**Methods for Cleaning Up** Absorb with inert material and transfer to containers for disposal.

**7. HANDLING AND STORAGE**

**Precautions for safe handling**

**Handling** Handle in accordance with good industrial hygiene and safety practice. Avoid generation of mist/aerosol.

**Conditions for safe storage, including any incompatibilities**

<b>Storage</b>	Keep containers tightly closed in a dry, cool and well-ventilated place.
<b>Packaging Material</b>	Store tightly closed in original container. Prevent exposure to high humidity, material is hygroscopic.
<b>Incompatible materials</b>	Strong oxidizing agents.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Glycerin 56-81-5	n/a	TWA: 15 mg/m <sup>3</sup> (total) TWA: 5 mg/m <sup>3</sup> (respirable fraction)	n/a

**Appropriate engineering controls**

<b>Engineering Measures</b>	Showers Eyewash stations Ventilation systems.
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**Individual protection measures, such as personal protective equipment**

<b>Eye/face Protection</b>	Safety glasses with side-shields.
<b>Skin and Body Protection</b>	Impervious gloves.
<b>Respiratory Protection</b>	Use NIOSH/MSHA approved respirator if exposure limit is exceeded.

<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice.
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**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

<b>Physical State</b>	Liquid	<b>Odor</b>	Odorless
<b>Appearance</b>	Clear		
<b>Color</b>	Colorless		
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>	
<b>pH</b>	7	Neat	
<b>Melting point/freezing point</b>	18 °C / 64 °F		
<b>Boiling point/boiling range</b>	290 °C / 554 °F		
<b>Flash Point</b>	177 °C / 351 °F		
<b>Evaporation Rate</b>		Not determined	
<b>Flammability (solid, gas)</b>		May burn if exposed to open flame.	
<b>Flammability Limits in Air</b>		Not determined	
<b>Upper flammability limits</b>	Not determined		
<b>Lower Flammability Limit</b>	Not determined		
<b>Vapor pressure</b>	0.000106	hPa at (20 °C)	
<b>Vapor Density</b>		Not determined	
<b>Specific Gravity</b>	1.26	@ 20°C	
<b>Water Solubility</b>	Miscible		
<b>Solubility in other solvents</b>		Not determined	
<b>Partition coefficient</b>	-2.6	Calculated	
<b>Autoignition Temperature</b>	400 °C / 752 °F		
<b>Decomposition temperature</b>			
<b>Kinematic viscosity</b>		Not determined	
<b>Dynamic viscosity</b>	1300 mPa s	@ 20 °C	

**Explosive Properties** None  
**Oxidizing Properties** None

Other Information

**10. STABILITY AND REACTIVITY**

**Reactivity** Not reactive  
**Remarks**

**Chemical stability** Stable under recommended storage conditions.

**Possibility of Hazardous Reactions**  
**Hazardous Reactions** None under normal processing.  
**Hazardous Polymerization** Hazardous polymerization does not occur.

**Conditions to Avoid** Extremes of temperature and direct sunlight

**Incompatible materials** Strong oxidizing agents.

**Hazardous Decomposition Products**  
 Acrolein may be formed if product is burned or strongly heated, especially in acidic conditions.

**11. TOXICOLOGICAL INFORMATION**

Information on likely routes of exposure

**Product Information**

**Inhalation** Inhalation of aerosol or mist may cause irritation of the respiratory tract.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged or repeated contact may dry skin and cause irritation.

**Ingestion** Ingestion may cause stomach discomfort.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Glycerin 56-81-5	> 4,000 mg/kg (Mouse), >25,000 mg/kg (rat)	> 18,700 mg/kg (Rabbit)	> 570 mg/m <sup>3</sup> ( Rat ) 1 h

Information on toxicological effects

**Symptoms** No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Skin corrosion/irritation** Caused mild irritation in animal studies.  
**Serious eye damage/eye irritation** Caused temporary (<24h) eye irritation in animal studies.  
**Sensitization** Not a skin sensitizer.  
**Mutagenic Effects** Not classified as a mutagen by IARC.  
**Carcinogenicity** This substance is not classified as a carcinogen by IARC, OSHA, ACGIH, or NTP.

**Reproductive Toxicity** Reproductive effects are unknown.

**Developmental Toxicity** Not classified as a developmental toxin.  
**Teratogenic** Not classified as a teratogen.  
**STOT - single exposure** No known effects under normal use conditions.

**STOT - repeated exposure** No known hazard.  
**Aspiration hazard** No known hazard.

**Numerical measures of toxicity-Product Information**

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Chemical Name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
Glycerin 56-81-5		LC50 51 - 57 mL/L Oncorhynchus mykiss 96 h	Pseudomonas putida (16 hr) >10 g/l	EC50 >10,000 mg/l 24 h Daphnia magna

**Persistence and degradability**

Readily biodegradable.

**Bioaccumulation/Accumulation**

Not expected to be bioaccumulative.

**Mobility**

Will likely be mobile in the environment due to its water solubility.

Chemical Name	Log Pow
Glycerin 56-81-5	= -1.76

**Other Adverse Effects**                      None identified

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Waste Disposal Method**                      Dispose of in accordance with applicable regulations.

**Contaminated Packaging**                      Dispose of in accordance with applicable regulations.

**14. TRANSPORT INFORMATION**

**DOT**    Not regulated

**TDG**    Not regulated

**MEX**    Not regulated

**IATA**    Not regulated

**IMDG / IMO**    Not regulated

**15. REGULATORY INFORMATION**

**International Inventories**

TSCA	Complies
DSL	Complies
EINECS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies

AICS Complies

**Legend**

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
 DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List  
 EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances  
 ENCS - Japan Existing and New Chemical Substances  
 IECSC - China Inventory of Existing Chemical Substances  
 KECL - Korean Existing and Evaluated Chemical Substances  
 PICCS - Philippines Inventory of Chemicals and Chemical Substances  
 AICS - Australian Inventory of Chemical Substances

**U.S. Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

**SARA 311/312 Hazard Categories**

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

**Clean Water Act**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

**U.S. State Regulations**

**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Glycerin 56-81-5	X	X	X

**16. OTHER INFORMATION**

<b>NFPA</b>	Health Hazard 0	Flammability 1	Instability 0	<b>Physical and Chemical Hazards</b> n/a
<b>HMIS</b>	Health Hazard 0	Flammability 1	Physical hazards 0	<b>Personal Precautions</b> B

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**Disclaimer**

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**End of MSDS**