



HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	Hygroscopic -- keep container tightly sealed. Irritating to skin, eyes, and the respiratory system. Store in freezer.	

## Section I. Chemical Product and Company Identification

Chemical Name	<b>Glycerol</b> [Matrix for FABMS and liquid SIMS]		
Catalog Number	S0373	Supplier	TCl America 9211 N. Harborgate St. Portland OR 1-800-423-8616
Synonym	1,2,3-Propanetriol; Glycerin		
Chemical Formula	HOCH <sub>2</sub> CH(OH)CH <sub>2</sub> OH		
CAS Number	56-81-5	In case of Emergency Call	<b>Chemtrec®</b> <b>(800) 424-9300 (U.S.)</b> <b>(703) 527-3887 (International)</b>

## Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Glycerol [Matrix for FABMS and liquid SIMS]	56-81-5	-----	Not available.	Rat LC <sub>50</sub> (inhalation) >570mg/m <sup>3</sup> Rat LD <sub>50</sub> (oral) 12600mg/kg Rabbit LD <sub>50</sub> (dermal) >10gm/kg

## Section III. Hazards Identification

Acute Health Effects	Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.
Chronic Health Effects	<b>CARCINOGENIC EFFECTS</b> : Not available. <b>MUTAGENIC EFFECTS</b> : Not available. <b>TERATOGENIC EFFECTS</b> : Not available. <b>DEVELOPMENTAL TOXICITY</b> Reproductive Effects: Rat TDLo (Intratesticular) 280 mg/kg, male 2 days prior to mating. Toxic Effects: Paternal Effects - Spermatogenesis. Paternal Effects - Testes, epididymis, sperm duct. Rat TDLo (oral) 100 mg/kg, male 1 day prior to mating. Toxic Effects: Effects on Fertility - Post-implantation mortality. Monkey TDLo (Intratesticular) 119 mg/kg, male 1 day prior to mating. Toxic Effects: Paternal Effects - Spermatogenesis. Paternal Effects - Testes, epididymis, sperm duct. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

## Section IV. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Inhalation	If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.
Ingestion	INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

[Matrix for FABMS and liquid SIMS]

**Section V. Fire and Explosion Data**

Flammability	May be combustible at high temperature.	Auto-Ignition	>200°C (392°F)
Flash Points	176°C (348.8°F).	Flammable Limits	LOWER: 0.9%
Combustion Products	These products are toxic carbon oxides (CO, CO <sub>2</sub> ).		
Fire Hazards	Not available.		
Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.		
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet. Consult with local fire authorities before attempting large scale fire-fighting operations.		


**Section VI. Accidental Release Measures**

Spill Cleanup Instructions	Hygroscopic material. Irritating material. Store in freezer. If the product is in its solid form: Use a shovel to put the material into a convenient waste disposal container. If the product is in its liquid form: Absorb with an inert material and put the spilled material in an appropriate waste disposal. Finish cleaning the spill by rinsing any contaminated surfaces with copious amounts of water. Consult federal, state, and/or local authorities for assistance on disposal.
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**Section VII. Handling and Storage**

Handling and Storage Information	HYGROSCOPIC. IRRITANT. STORE IN FREEZER. Keep away from heat. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. DO NOT ingest. Do not breathe gas/fumes/ vapor/spray. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively. Always store away from incompatible compounds such as oxidizing agents, alkalis (bases).
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**Section VIII. Exposure Controls/Personal Protection**

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash station and safety shower is proximal to the work-station location.
Personal Protection	Splash goggles. Lab coat. Vapor respirator. Boots. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Gloves.
	
Exposure Limits	Not available.

**Section IX. Physical and Chemical Properties**

Physical state @ 20°C	Liquid. (Syrupy Colorless, clear.)	Solubility	Miscible with water, alcohol. One part dissolves in 11 parts ethyl acetate, about 500 parts ethyl ether. Insoluble in benzene, chloroform, carbon tetrachloride, carbon disulfide, petroleum ether, oils.
Specific Gravity	1.2613 (water=1)	Partition Coefficient	Not available.
Molecular Weight	92.09	Vapor Pressure	<0.1 kPa (@ 20°C)
Boiling Point	290°C (554°F) (Dec.)	Vapor Density	3.17 (Air = 1)
Melting Point	20°C (68°F)	Volatility	Not available.
Refractive Index	1.4730 @ 25°C	Odor	Not available.
Critical Temperature	Not available.	Taste	Sweet.
Viscosity	Dynamic: 954 cP @ 25°C		

**Section X. Stability and Reactivity Data**

Stability	This material is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Avoid excessive heat and light.
Incompatibilities	Reactive with strong oxidizing agents, strong alkalis (bases).

**Section XI. Toxicological Information**

RTECS Number	MA8050000
Routes of Exposure	Eye Contact. Ingestion. inhalation.
Toxicity Data	Rat LC <sub>50</sub> (inhalation) >570mg/m <sup>3</sup> /1H Rat LD <sub>50</sub> (oral) 12600mg/kg Rabbit LD <sub>50</sub> (dermal) >10gm/kg
Chronic Toxic Effects	<b>CARCINOGENIC EFFECTS</b> : Not available. <b>MUTAGENIC EFFECTS</b> : Not available. <b>TERATOGENIC EFFECTS</b> : Not available. <b>DEVELOPMENTAL TOXICITY</b> Reproductive Effects: Rat TDLo (Intratesticular) 280 mg/kg, male 2 days prior to mating. Toxic Effects: Paternal Effects - Spermatogenesis. Paternal Effects - Testes, epididymis, sperm duct. Rat TDLo (oral) 100 mg/kg, male 1 day prior to mating. Toxic Effects: Effects on Fertility - Post-implantation mortality. Monkey TDLo (Intratesticular)119 mg/kg, male 1 day prior to mating. Toxic Effects: Paternal Effects - Spermatogenesis. Paternal Effects - Testes, epididymis, sperm duct. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.
Acute Toxic Effects	Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.


**Section XII. Ecological Information**

Ecotoxicity	Not available.
Environmental Fate	Glycerin is produced in large quantities synthetically and used in thousands of applications. It may be released to the environment in industrial effluent and during the use and disposal of the numerous products in which it is contained. If released to soil, glycerin is expected to undergo rapid biodegradation under aerobic conditions. It is expected to display very high mobility in soil and it is not expected to significantly volatilize to the atmosphere. If released to water, glycerin is expected to rapidly degrade under aerobic conditions. Biodegradation in seawater and under anaerobic conditions is also expected. Glycerin is not expected to bioconcentrate in fish and aquatic organisms nor is it expected to adsorb to sediment and suspended organic matter. Volatilization to the atmosphere is expected to be slower than for water itself. If released to the atmosphere, glycerin may undergo a gas-phase oxidation with photochemically produced hydroxyl radicals with a half-life of 33 hrs. It may also undergo atmospheric removal by wet deposition processes. Occupational exposure to glycerin may occur by dermal contact during its production and use. Exposure to the general population may occur by dermal contact or ingestion due to the wide variety of food and personal care products in which it is contained.

**Section XIII. Disposal Considerations**

Waste Disposal	Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.
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**Section XIV. Transport Information**

DOT Classification	Not a DOT controlled material (United States).
PIN Number	Not applicable.
Proper Shipping Name	Not applicable.
Packing Group (PG)	Not applicable.
DOT Pictograms	

**Section XV. Other Regulatory Information and Pictograms**

TSCA Chemical Inventory (EPA)	This compound is <b>ON</b> the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	Not available.
EINECS Number (EEC)	200-289-5
EEC Risk Statements	R36/37/38- Irritating to eyes, respiratory system and skin.
Japanese Regulatory Data	Not available.

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Emergency phone number (800) 424-9300

**Section XVI. Other Information****Version 1.0****Validated on 1/3/2003.****Printed 2/24/2005.****Notice to Reader**

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.