

MATERIAL SAFETY DATA SHEET

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Version 1.11

Section 1 - Product and Company Information

Product Name GLYCEROL, 99.5+%, ACS
Product Number G7893
Brand SIAL

Company Sigma-Aldrich
Street Address 3050 Spruce Street
City, State, Zip, Country SAINT LOUIS MO 63103 US
Technical Phone: 314 771 5765
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Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
GLYCEROL	56-81-5	No

Formula C3H8O3
Synonyms Glycerol * Citifluor AF 2 * Glycerin * Glycerin, anhydrous * Glycerine * Glycerin mist (ACGIH, OSHA) * Glycerin, synthetic * Glyceritol * Glycyl alcohol * Clyzerin, wasserfrei (German) * Grocolene * MOON * 1,2,3-Propanetriol * Osmoglyn * Star * Synthetic glycerin * 90 Technical glycerine * Trihydroxypropane * 1,2,3-Trihydroxypropane
RTECS Number: MA8050000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Caution: Avoid contact and inhalation. Target organ(s): Kidneys.

HMIS RATING

HEALTH: 1*

FLAMMABILITY: 0

REACTIVITY: 1

NFPA RATING

HEALTH: 1

FLAMMABILITY: 0

REACTIVITY: 1

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

FLASH POINT

320 °F 160 °C Method: closed cup

EXPLOSION LIMITS

Lower: 0.9 %

AUTOIGNITION TEMP

370 °C

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

METHODS FOR CLEANING UP

Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed.

SPECIAL REQUIREMENTS

Hygroscopic.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT

Hand: Protective gloves.
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA USA	ACGIH ACGIH	TWA TWA	10 MG/M3 10 MG/M3
Remarks: inhalable particulate			
USA USA	MSHA Standard	MSHA	
Remarks: Nuisance Particulates (mist). Nuisance			
USA USA	OSHA. OSHA.	PEL PEL	8H TWA 15 MG/M3, TOTAL DUST 8H
New Zealand	OEL OEL		
Remarks: check ACGIH TLV check ACGIH TLV			

EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	10 mg/m3
Poland		NDSch	-
Poland		NDSP	
Remarks: {OELS ARE VALID FOR AEROSOLS} AEROZOLE			

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Liquid		
Property	Value	At Temperature or Pressure	
Molecular Weight	92.09 AMU		
pH	5.5 - 8.0		
BP/BP Range	182 °C	20 mmHg	
MP/MP Range	20 °C		
Freezing Point	N/A		
Vapor Pressure	< 0.1 mmHg	20 °C	
Vapor Density	3.1 g/l		
Saturated Vapor Conc.	N/A		
SG/Density	1.262 g/cm3		
Bulk Density	N/A		
Odor Threshold	N/A		
Volatile%	N/A		
VOC Content	N/A		
Water Content	< 0.1 %		
Solvent Content	N/A		
Evaporation Rate	N/A		
Viscosity	N/A		
Surface Tension	N/A		
Partition Coefficient	N/A		
Decomposition Temp.	> 290 °C		
Flash Point	320 °F 160 °C	Method: closed cup	
Explosion Limits	Lower: 0.9 %		
Flammability	N/A		
Autoignition Temp	370 °C		
Refractive Index	1.474		
Optical Rotation	N/A		
Miscellaneous Data	N/A		
Solubility	Solubility in Water:complete, colorless 5 M in H2O, 20°C		

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions to Avoid: Moisture.

Materials to Avoid: Strong oxidizing agents, Strong bases.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: May cause eye irritation.

Inhalation: Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

Kidneys.

SIGNS AND SYMPTOMS OF EXPOSURE

Prolonged exposure can cause: Nausea, headache, and vomiting.

TOXICITY DATA

Oral

Rat

12600 mg/kg

LD50

Remarks: Liver:Other changes. Behavioral:Muscle weakness.

Behavioral:General anesthetic.

Inhalation

Rat

> 570 mg/m3

LC50

Intraperitoneal

Rat

4420 MG/KG

LD50

Remarks: Behavioral:Toxic psychosis. Cardiac:Other changes.

Kidney, Ureter, Bladder:Other changes.

Subcutaneous

Rat

100 MG/KG

LD50

Intravenous

Rat

5566 MG/KG

LD50

Oral

Mouse

4090 mg/kg

LD50

Intraperitoneal

Mouse

8700 MG/KG

LD50

Remarks: Behavioral: Altered sleep time (including change in righting reflex).

Subcutaneous

Mouse

91 MG/KG

LD50

Intravenous

Mouse

4250 MG/KG

LD50

Oral

Rabbit

27000 mg/kg

LD50

Skin

Rabbit

> 10000 mg/kg

LD50

Intravenous

Rabbit

53 GM/KG

LD50

Oral

Guinea pig

7750 mg/kg

LD50

IRRITATION DATA

Skin

Rabbit

500 mg

24H

Remarks: Mild irritation effect

Eyes

Rabbit

126 mg

Remarks: Mild irritation effect

Eyes

Rabbit

500 mg

24H

Remarks: Mild irritation effect

CHRONIC EXPOSURE - MUTAGEN

Species: Human

Dose: 200 MMOL/L

Cell Type: lymphocyte
Mutation test: DNA inhibition

Species: Rat
Route: Oral
Dose: 1 GM/KG
Mutation test: Cytogenetic analysis

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat
Dose: 100 MG/KG
Route of Application: Oral
Exposure Time: (1D MALE)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Rat
Dose: 280 MG/KG
Route of Application: Intratesticular
Exposure Time: (2D MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). Paternal Effects: Testes, epididymis, sperm duct.

Species: Rat
Dose: 1600 MG/KG
Route of Application: Intratesticular
Exposure Time: (1D MALE)
Result: Effects on Fertility: Male fertility index (e.g., # males impregnating females per # males exposed to fertile nonpregnant females).

Species: Rat
Dose: 862 MG/KG
Route of Application: Intratesticular
Exposure Time: (1D MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).

Species: Monkey
Dose: 119 MG/KG
Route of Application: Intratesticular
Exposure Time: (1D MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). Paternal Effects: Testes, epididymis, sperm duct.

Section 12 - Ecological Information

No data available.

ACUTE ECOTOXICITY TESTS

Test Type: LC50 Fish
Species: other fish
Value: > 100,100 mg/l

Test Type: LC50 Fish
Species: Pimephales promelas (Fathead minnow)
Value: 44,000 mg/l

Test Type: LC50 Fish

Species: Carassius auratus (Goldfish)
Value: > 5,000 mg/l

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: None
Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

US CLASSIFICATION AND LABEL TEXT

US Statements: Caution: Avoid contact and inhalation. Target organ(s): Kidneys.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No
TSCA INVENTORY ITEM: Yes Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.