

## Material Safety Data Sheet

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Version 1.5

According to 91/155/EEC

## 1 - Product and Company Information

Product Name	GLYCEROL, 99.5+%, A.C.S. REAGENT MINI-BULK)
Product Number	536407
Company	Sigma-Aldrich Pte Ltd #08-01 Citilink Warehouse Singapore 118529 Singapore
Technical Phone #	65 271 1089
Fax	65 271 1571

## 2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
GLYCEROL	56-81-5	200-289-5	None

Formula C3H8O3  
Molecular Weight 92.09 AMU  
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

## 3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT  
Not hazardous according to Directive 67/548/EC.

## 4 - First Aid Measures

## AFTER INHALATION

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

## AFTER SKIN CONTACT

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

## AFTER EYE CONTACT

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.

## AFTER INGESTION

If swallowed, wash out mouth with water provided person is

conscious. Call a physician.

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## 5 - Fire Fighting Measures

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### EXTINGUISHING MEDIA

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

### SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

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## 6 - Accidental Release Measures

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### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of vapors.

### 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.

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## 7 - Handling and Storage

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### HANDLING

Directions for Safe Handling: Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

### STORAGE

Conditions of Storage: Keep tightly closed.

SPECIAL REQUIREMENTS: Hygroscopic.

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## 8 - Exposure Controls / Personal Protection

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### ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

### GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

### EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	10 mg/m3
Poland		NDSch	-
Poland		NDSP	

Remarks: {OELS ARE VALID FOR AEROSOLS} AEROZOLE

### EXPOSURE LIMITS - UNITED KINGDOM

Source	Type	Value
OEL	OEL	10 mg/m3

### PERSONAL PROTECTIVE EQUIPMENT

Hand Protection: Protective gloves.  
Eye Protection: Chemical safety goggles.

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## 9 - Physical and Chemical Properties

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Appearance	Physical State: Liquid	
Property	Value	At Temperature or Pressure
pH	5.5 - 8	
BP/BP Range	182 °C	20 mmHg
MP/MP Range	20 °C	
Flash Point	160 °C	Method: closed cup
Flammability	N/A	
Autoignition Temp	370 °C	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	Lower: 0.9 %	
Vapor Pressure	< 1 mmHg	20 °C
SG/Density	1.262 g/cm3	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	3.1 g/l	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	< 0.1 %	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water: 5 M in H <sub>2</sub> O, 20°C complete, colorless	

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## 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Conditions to Avoid: Moisture.

Materials to Avoid: Strong bases, Strong oxidizing agents.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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## 11 - Toxicological Information

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RTECS NUMBER: MA8050000

### ACUTE TOXICITY

LD50

Skin

Rabbit

> 10,000 mg/kg

LD50

Oral

Rat

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LC50

Inhalation

Rat

> 4 mg/kg

LD50  
Oral  
Rat  
12600 mg/kg  
Remarks: Behavioral:General anesthetic. Behavioral:Muscle weakness. Liver:Other changes.

LC50  
Inhalation  
Rat  
> 570 mg/m3  
1H

LD50  
Intraperitoneal  
Rat  
4420 MG/KG  
Remarks: Behavioral:Toxic psychosis. Cardiac:Other changes. Kidney, Ureter, Bladder:Other changes.

LD50  
Subcutaneous  
Rat  
100 MG/KG

LD50  
Intravenous  
Rat  
5566 MG/KG

LD50  
Oral  
Mouse  
4090 mg/kg

LD50  
Intraperitoneal  
Mouse  
8700 MG/KG  
Remarks: Behavioral:Altered sleep time (including change in righting reflex).

LD50  
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

#### 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

#### SIGNS AND SYMPTOMS OF EXPOSURE

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

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

#### TARGET ORGAN INFORMATION

Kidneys.

#### CHRONIC EXPOSURE - MUTAGEN

Human  
200 MMOL/L  
Cell Type: lymphocyte  
DNA inhibition

Rat  
1 GM/KG  
Oral  
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.

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## 12 - Ecological Information

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No data available.

### ECOTOXICOLOGICAL EFFECTS

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

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## 13 - Disposal Considerations

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### SUBSTANCE DISPOSAL

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.

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## 14 - Transport Information

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RID/ADR

Non-hazardous for road transport.

IMDG

Non-hazardous for sea transport.

IATA

Non-hazardous for air transport.

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## 15 - Regulatory Information

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### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

S-PHRASES: 23 24/25

Do not breathe vapor. Avoid contact with skin and eyes.

Not hazardous according to Directive 67/548/EC.

### COUNTRY SPECIFIC INFORMATION

Germany

WGK: 1

SWITZERLAND

SWISS POISON CLASS: FREI

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## 16 - Other Information

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### 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 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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