

## SAFETY DATA SHEET

Version 6.10  
Revision Date 10/29/2022  
Print Date 11/11/2023

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : Glycerol

Product Number : G9012

Brand : Sigma-Aldrich

CAS-No. : 56-81-5

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

Identified uses : Laboratory chemicals, Synthesis of substances

**1.3 Details of the supplier of the safety data sheet**

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765

Fax : +1 800 325-5052

**1.4 Emergency telephone**

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-  
527-3887 CHEMTREC (International) 24  
Hours/day; 7 Days/week

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture**

Not a hazardous substance or mixture according to the Globally Harmonized System (GHS).

**2.2 GHS Label elements, including precautionary statements**

Not a hazardous substance or mixture according to the Globally Harmonized System (GHS).

**2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none****SECTION 3: Composition/information on ingredients****3.1 Substances**

Synonyms : 1,2,3-Propanetriol  
Glycerin

Formula :  $C_3H_8O_3$

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Molecular weight : 92.09 g/mol  
CAS-No. : 56-81-5  
EC-No. : 200-289-5

| Component        | Classification | Concentration |
|------------------|----------------|---------------|
| <b>glycerine</b> |                |               |
|                  |                | <= 100 %      |

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## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### **If inhaled**

After inhalation: fresh air.

#### **In case of skin contact**

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

#### **In case of eye contact**

After eye contact: rinse out with plenty of water. Remove contact lenses.

#### **If swallowed**

After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### **Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Water Foam  
Carbon dioxide (CO<sub>2</sub>) Dry powder

#### **Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given. For this substance/mixture no limitations of extinguishing agents are given.

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

### 5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.

#### **5.4 Further information**

Prevent fire extinguishing water from contaminating surface water or the ground water system.

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### **SECTION 6: Accidental release measures**

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

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Evacuate the danger area, observe emergency procedures, consult an expert.  
For personal protection see section 8.

#### **6.2 Environmental precautions**

Do not let product enter drains.

#### **6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent and neutralising material (e.g. Chemizorb® H<sup>+</sup>, Merck Art. No. 101595). Dispose of properly. Clean up affected area.

#### **6.4 Reference to other sections**

For disposal see section 13.

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### **SECTION 7: Handling and storage**

#### **7.1 Precautions for safe handling**

For precautions see section 2.2.

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

##### **Storage conditions**

Tightly closed.

hygroscopic

##### **Storage class**

Storage class (TRGS 510): 10: Combustible liquids

#### **7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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### **SECTION 8: Exposure controls/personal protection**

#### **8.1 Control parameters**

##### **Ingredients with workplace control parameters**

| Component | CAS-No. | Value | Control parameters | Basis                                                                                   |
|-----------|---------|-------|--------------------|-----------------------------------------------------------------------------------------|
| glycerine | 56-81-5 | TWA   | 5 mg/m3            | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants        |
|           |         | TWA   | 15 mg/m3           | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants        |
|           |         | PEL   | 10 mg/m3           | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
|           |         | PEL   | 5 mg/m3            | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |

## 8.2 Exposure controls

### Appropriate engineering controls

Change contaminated clothing. Wash hands after working with substance.

### Personal protective equipment

#### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

#### Respiratory protection

required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387

and other accompanying standards relating to the used respiratory protection system.

### **Control of environmental exposure**

Do not let product enter drains.

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## **SECTION 9: Physical and chemical properties**

### **9.1 Information on basic physical and chemical properties**

|                                                 |                                                                                           |
|-------------------------------------------------|-------------------------------------------------------------------------------------------|
| a) Appearance                                   | Form: viscous<br>Color: colorless                                                         |
| b) Odor                                         | odorless                                                                                  |
| c) Odor Threshold                               | Not applicable                                                                            |
| d) pH                                           | ca.5 at 100 g/l at 20 °C (68 °F) - (External MSDS)                                        |
| e) Melting point/freezing point                 | Melting point/range: 20 °C (68 °F)                                                        |
| f) Initial boiling point and boiling range      | 182 °C 360 °F at 27 hPa                                                                   |
| g) Flash point                                  | 199 °C (390 °F) at ca.1013.0 hPa - Pensky-Martens closed cup                              |
| h) Evaporation rate                             | No data available                                                                         |
| i) Flammability (solid, gas)                    | No data available                                                                         |
| j) Upper/lower flammability or explosive limits | Upper explosion limit: 19 %(V) at 1013 hPa<br>Lower explosion limit: 2.7 %(V) at 1013 hPa |
| k) Vapor pressure                               | < 0.001 hPa at 20 °C (68 °F)                                                              |
| l) Vapor density                                | 3.18 - (Air = 1.0)                                                                        |
| m) Density                                      | 1.25 g/mL                                                                                 |
| Relative density                                | No data available                                                                         |
| n) Water solubility                             | 1,000 g/l at 25 °C (77 °F) - miscible                                                     |
| o) Partition coefficient: n-octanol/water       | log Pow: -1.75 at 25 °C (77 °F) - Bioaccumulation is not expected.                        |
| p) Autoignition temperature                     | 370 °C (698 °F)                                                                           |
| q) Decomposition temperature                    | No data available                                                                         |
| r) Viscosity                                    | No data available                                                                         |
| s) Explosive properties                         | No data available                                                                         |
| t) Oxidizing properties                         | none                                                                                      |

### **9.2 Other safety information**

|                        |                               |
|------------------------|-------------------------------|
| Surface tension        | ca.63.4 mN/m at 20 °C (68 °F) |
| Relative vapor density | 3.18 - (Air = 1.0)            |

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## **SECTION 10: Stability and reactivity**

### **10.1 Reactivity**

Forms explosive mixtures with air on intense heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

### **10.2 Chemical stability**

The product is chemically stable under standard ambient conditions (room temperature) .

### **10.3 Possibility of hazardous reactions**

Risk of explosion with:

halogens

Strong oxidizing agents

peroxi compounds

hydrogen peroxide

Nitriles

perchloric acid

with

Lead oxides

Nitric acid

with

sulfuric acid

Risk of ignition or formation of inflammable gases or vapours with:

potassium permanganate

hydrides

calcium hypochlorite

Fluorine

with

Lead oxides

Exothermic reaction with:

Oxides of phosphorus

chromium(VI) oxide

phosphorus halides

Acetic anhydride

with

phosphorous oxichloride

with

Nitrobenzene

### **10.4 Conditions to avoid**

Strong heating.

### **10.5 Incompatible materials**

No data available

### **10.6 Hazardous decomposition products**

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 27,200 mg/kg

Remarks: (ECHA)

Inhalation: No data available

LD50 Dermal - Rabbit - > 10,000 mg/kg

Remarks: (External MSDS)

No data available

#### Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 24 h

Remarks: (ECHA)

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation

Remarks: (ECHA)

#### Respiratory or skin sensitization

No data available

#### Germ cell mutagenicity

No data available

#### Carcinogenicity

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

#### 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

### 11.2 Additional Information

Repeated dose toxicity - Rat - male - Oral - NOAEL (No observed adverse effect level) - > 1,600 mg/kg

Remarks: (ECHA)

Repeated dose toxicity - Rat - male and female - Inhalation

Remarks: (ECHA)

Repeated dose toxicity - Rabbit - Dermal

Remarks: (ECHA)

RTECS: MA8050000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Kidney - Irregularities - Based on Human Evidence

Kidney - Irregularities - Based on Human Evidence

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## SECTION 12: Ecological information

### 12.1 Toxicity

|                  |                                                                                                |
|------------------|------------------------------------------------------------------------------------------------|
| Toxicity to fish | static test LC50 - Oncorhynchus mykiss (rainbow trout) - 54,000 mg/l - 96 h<br>Remarks: (ECHA) |
|------------------|------------------------------------------------------------------------------------------------|

|                                                     |                                        |
|-----------------------------------------------------|----------------------------------------|
| Toxicity to daphnia and other aquatic invertebrates | Remarks: No data available (glycerine) |
|-----------------------------------------------------|----------------------------------------|

|                   |                                        |
|-------------------|----------------------------------------|
| Toxicity to algae | Remarks: No data available (glycerine) |
|-------------------|----------------------------------------|

### 12.2 Persistence and degradability

|                  |                                                                                         |
|------------------|-----------------------------------------------------------------------------------------|
| Biodegradability | aerobic - Exposure time 2 d<br>Result: 90 % - Readily biodegradable.<br>Remarks: (ECHA) |
|------------------|-----------------------------------------------------------------------------------------|

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### 12.6 Endocrine disrupting properties

No data available

### 12.7 Other adverse effects

No data available

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

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## **SECTION 14: Transport information**

### **DOT (US)**

Not dangerous goods

### **IMDG**

Not dangerous goods

### **IATA**

Not dangerous goods

### **Further information**

Not classified as dangerous in the meaning of transport regulations.

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## **SECTION 15: Regulatory information**

### **SARA 302 Components**

This material does not contain any components with a section 302 EHS TPQ.

### **SARA 313 Components**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### **SARA 311/312 Hazards**

Chronic Health Hazard

### **Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

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## **SECTION 16: Other information**

### **Further information**

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 Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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