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**1. PRODUCT AND COMPANY IDENTIFICATION****1.1 Product identifiers**

Product name : Thioglycolic acid

Product Number : T3758  
Brand : Sigma-Aldrich  
Index-No. : 607-090-00-6

CAS-No. : 68-11-1

**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  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USATelephone : +1 800-325-5832  
Fax : +1 800-325-5052**1.4 Emergency telephone number**

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

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**2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**Acute toxicity, Oral (Category 3), H301  
Acute toxicity, Dermal (Category 3), H311  
Skin corrosion (Category 1B), H314  
Serious eye damage (Category 1), H318  
Acute aquatic toxicity (Category 3), H402

For the full text of the H-Statements mentioned in this Section, see Section 16.

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

Pictogram



Signal word

Danger

Hazard statement(s)

H301 + H311 : Toxic if swallowed or in contact with skin.  
H314 : Causes severe skin burns and eye damage.  
H318 : Causes serious eye damage.  
H402 : Harmful to aquatic life.

Precautionary statement(s)

P264 : Wash skin thoroughly after handling.  
P270 : Do not eat, drink or smoke when using this product.  
P273 : Avoid release to the environment.  
P280 : Wear protective gloves/ protective clothing/ eye protection/ face

|                           |                                                                                                                                                                           |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P301 + P310 + P330        | protection.<br>IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.                                                                                        |
| P301 + P330 + P331        | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.                                                                                                                        |
| P303 + P361 + P353        | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.                                                                       |
| P304 + P340 + P310        | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.                                                       |
| P305 + P351 + P338 + P310 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. |
| P362                      | Take off contaminated clothing and wash before reuse.                                                                                                                     |
| P405                      | Store locked up.                                                                                                                                                          |
| P501                      | Dispose of contents/ container to an approved waste disposal plant.                                                                                                       |

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Vesicant., Stench., Rapidly absorbed through skin.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

|                  |                                                  |
|------------------|--------------------------------------------------|
| Formula          | : C <sub>2</sub> H <sub>4</sub> O <sub>2</sub> S |
| Molecular weight | : 92.12 g/mol                                    |
| CAS-No.          | : 68-11-1                                        |
| EC-No.           | : 200-677-4                                      |
| Index-No.        | : 607-090-00-6                                   |

#### Hazardous components

| Component                  | Classification                                                                                   | Concentration |
|----------------------------|--------------------------------------------------------------------------------------------------|---------------|
| <b>Mercaptoacetic acid</b> |                                                                                                  |               |
|                            | Acute Tox. 3; Skin Corr. 1B;<br>Eye Dam. 1; Aquatic Acute 3;<br>H301 + H311, H314, H318,<br>H402 | 90 - 100 %    |

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

#### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 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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## 5. FIREFIGHTING MEASURES

- 5.1 Extinguishing media**  
**Suitable extinguishing media**  
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- 5.2 Special hazards arising from the substance or mixture**  
No data available
- 5.3 Advice for firefighters**  
Wear self-contained breathing apparatus for firefighting if necessary.
- 5.4 Further information**  
No data available

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## 6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures**  
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.  
For personal protection see section 8.
- 6.2 Environmental precautions**  
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
- 6.3 Methods and materials for containment and cleaning up**  
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.
- 6.4 Reference to other sections**  
For disposal see section 13.

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## 7. HANDLING AND STORAGE

- 7.1 Precautions for safe handling**  
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.  
For precautions see section 2.2.
- 7.2 Conditions for safe storage, including any incompatibilities**  
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
  
Recommended storage temperature -20 °C  
Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects
- 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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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

| Component           | CAS-No. | Value                                                               | Control parameters | Basis                                   |
|---------------------|---------|---------------------------------------------------------------------|--------------------|-----------------------------------------|
| Mercaptoacetic acid | 68-11-1 | TWA                                                                 | 1.000000 ppm       | USA. ACGIH Threshold Limit Values (TLV) |
|                     | Remarks | Eye irritation<br>Skin irritation<br>Danger of cutaneous absorption |                    |                                         |

|  |  |                                 |                                |                                                                                         |
|--|--|---------------------------------|--------------------------------|-----------------------------------------------------------------------------------------|
|  |  | TWA                             | 1.000000 ppm<br>4.000000 mg/m3 | USA. NIOSH Recommended Exposure Limits                                                  |
|  |  | Potential for dermal absorption |                                |                                                                                         |
|  |  | TWA                             | 1 ppm<br>4 mg/m3               | USA. NIOSH Recommended Exposure Limits                                                  |
|  |  | Potential for dermal absorption |                                |                                                                                         |
|  |  | PEL                             | 1 ppm<br>3.8 mg/m3             | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
|  |  | Skin                            |                                |                                                                                         |

## 8.2 Exposure controls

### Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

### Personal protective equipment

#### Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### 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: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 480 min

Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash contact

Material: Nature latex/chloroprene

Minimum layer thickness: 0.6 mm

Break through time: 235 min

Material tested: Lapren® (KCL 706 / Aldrich Z677558, 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 CE 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.

#### Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- |               |              |
|---------------|--------------|
| a) Appearance | Form: liquid |
| b) Odour      | Stench.      |

|                                                 |                                          |
|-------------------------------------------------|------------------------------------------|
| c) Odour Threshold                              | No data available                        |
| d) pH                                           | 1.5 at 10 g/l at 20 °C (68 °F)           |
| e) Melting point/freezing point                 | Melting point/range: -15.99 °C (3.22 °F) |
| f) Initial boiling point and boiling range      | 96 °C (205 °F) at 7 hPa (5 mmHg)         |
| g) Flash point                                  | 130 °C (266 °F) - closed cup             |
| h) Evaporation rate                             | No data available                        |
| i) Flammability (solid, gas)                    | No data available                        |
| j) Upper/lower flammability or explosive limits | Lower explosion limit: 5.9 %(V)          |
| k) Vapour pressure                              | 0.5 hPa (0.4 mmHg) at 25 °C (77 °F)      |
| l) Vapour density                               | 3.18 - (Air = 1.0)                       |
| m) Relative density                             | 1.325 g/cm <sup>3</sup>                  |
| n) Water solubility                             | completely miscible                      |
| o) Partition coefficient: n-octanol/water       | log Pow: 0.059                           |
| p) Auto-ignition temperature                    | No data available                        |
| q) Decomposition temperature                    | No data available                        |
| r) Viscosity                                    | No data available                        |
| s) Explosive properties                         | No data available                        |
| t) Oxidizing properties                         | No data available                        |

## 9.2 Other safety information

Relative vapour density 3.18 - (Air = 1.0)

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

Strong oxidizing agents, Strong acids

### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides

Other decomposition products - No data available

In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 114 mg/kg

LD50 Dermal - Rabbit - 848 mg/kg

No data available

#### Skin corrosion/irritation

No data available

#### Serious eye damage/eye irritation

No data available

#### Respiratory or skin sensitisation

No data available

#### Germ cell mutagenicity

No data available

#### Carcinogenicity

IARC: No component 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 component 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

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

#### Additional Information

RTECS: AI5950000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

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## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 30 mg/l - 96 h

### 12.2 Persistence and degradability

Biodegradability Result: - Readily biodegradable.

### 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 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life.

No data available

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## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. 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.

#### Contaminated packaging

Dispose of as unused product.

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## 14. TRANSPORT INFORMATION

### DOT (US)

UN number: 1940      Class: 8      Packing group: II

Proper shipping name: Thioglycolic acid

Reportable Quantity (RQ):

Poison Inhalation Hazard: No

### IMDG

UN number: 1940      Class: 8      Packing group: II      EMS-No: F-A, S-B

Proper shipping name: THIOGLYCOLIC ACID

### IATA

UN number: 1940      Class: 8      Packing group: II

Proper shipping name: Thioglycolic acid

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## 15. REGULATORY INFORMATION

### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### 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

Acute Health Hazard

### Massachusetts Right To Know Components

Mercaptoacetic acid

CAS-No.  
68-11-1

Revision Date  
1993-04-24

### Pennsylvania Right To Know Components

Mercaptoacetic acid

CAS-No.  
68-11-1

Revision Date  
1993-04-24

### New Jersey Right To Know Components

Mercaptoacetic acid

CAS-No.  
68-11-1

Revision Date  
1993-04-24

### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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## 16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

|               |                                             |
|---------------|---------------------------------------------|
| Acute Tox.    | Acute toxicity                              |
| Aquatic Acute | Acute aquatic toxicity                      |
| Eye Dam.      | Serious eye damage                          |
| H301          | Toxic if swallowed.                         |
| H301 + H311   | Toxic if swallowed or in contact with skin. |
| H311          | Toxic in contact with skin.                 |
| H314          | Causes severe skin burns and eye damage.    |
| H318          | Causes serious eye damage.                  |

#### HMIS Rating

|                        |   |
|------------------------|---|
| Health hazard:         | 3 |
| Chronic Health Hazard: |   |
| Flammability:          | 1 |
| Physical Hazard        | 0 |

#### NFPA Rating

|                    |   |
|--------------------|---|
| Health hazard:     | 3 |
| Fire Hazard:       | 1 |
| Reactivity Hazard: | 0 |

#### Further information

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#### Preparation Information

Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956

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