SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name Mercaptoacetic acid

Stock number: B20391
CAS Number: 68-11-1
EC number: 200-677-4
Index number: 607-090-00-6

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

Identified use: SU24 Scientific research and development

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier: Thermo Fisher (Kandel) GmbH
Zeppelinstr. 7b
76185 Karlsruhe / Germany
Tel: +49 (0) 721 84007 280
Fax: +49 (0) 721 84007 300
Email: tech@alfa.com
www.alfa.com
Informing department: Product safety Tel + +049 (0) 7275 988687-0

1.4 Emergency telephone number:

Carechem 24: +44 (o) 1235 239 670 (Multi-language emergency number)
Poison Information Center Mainz
www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Classified as: H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H331 Toxic if inhaled.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

T: Toxic
R23/24/25: Toxic by inhalation, in contact with skin and if swallowed.
C: Corrosive
R34: Causes burns.

Other hazards that do not result in classification: Not applicable

2.2 Label elements

Hazard pictograms

GHS06 skull and crossbones
GHS05 corrosion
Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labelled according to the CLP regulation.

Signal word Danger

Hazard statements
H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H331 Toxic if inhaled.
H314 Causes severe skin burns and eye damage.

Precautionary statements
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P301+P330 If SWALLOWED: Immediately call a POISON CENTER/ doctor/...
P313 IF IN EYES Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P338 If INHALED Take off immediately all contaminated clothing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards

Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

3.1 Substances

CAS# Designation:
68-11-1 Mercaptoacetic acid

Identification number(s):
EC number: 200-677-4
Index number: 607-090-00-6

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

Immediately remove any clothing soaked by the product.
Remove breathing apparatus only after soaked clothing has been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.

(Contd. on page 2)
Trade name **Mercaptoacetic acid**

### 3.8.2 After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

### 3.8.3 After skin contact
Instantly wash with water and soap and rinse thoroughly. Seek immediate medical advice.

### 3.8.4 After eye contact
Rinse opened eye for several minutes under running water. Then consult doctor.

4.2 Most important symptoms and effects, both acute and delayed
Causes severe skin burns. Causes serious eye damage.

4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

## SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing agents: CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

5.2 Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
- Carbon monoxide and carbon dioxide
- Sulphur oxides (SOx)
- Hydrogen sulphide

5.3 Advice for firefighters
Protective equipment:
- Wear self-contained breathing apparatus.
- Wear full protective suit.

## SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.

6.2 Environmental precautions:
Do not allow material to be released to the environment without proper governmental permits.

6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Use neutralizing agent. Dispose of contaminated material as waste according to section 13. Ensure adequate ventilation.

Prevention of secondary hazards:
No special measures required.

6.4 Reference to other sections
See Section 7 for information on safe handling. See section 8 for information on personal protection equipment. See Section 13 for information on disposal.

## SECTION 7: Handling and storage

7.1 Precautions for safe handling
Handle under dry protective gas. Keep containers tightly sealed. Store in cool, dry place in tightly closed containers. Ensure good ventilation/exhaustion at the workplace. Open and handle container with care.

Information about protection against explosions and fires:
No information known.

7.2 Conditions for safe storage, including any incompatibilities
Storage Requirements to be met by storerooms and containers:
No special requirements.

Information about storage in one common storage facility:
Store away from air. Do not store together with acids. Store away from strong bases. Store away from oxidising agents. Store away from metals.

Further information about storage conditions:
Store under dry inert gas. This product is air sensitive. Keep container tightly sealed. Store in cool, dry conditions in well sealed containers. Store in a locked cabinet or with access restricted to technical experts or their assistants.

7.3 Specific end use(s)
No further relevant information available.

## SECTION 8: Exposure controls/personal protection

Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

8.1 Control parameters
Components with critical values that require monitoring at the workplace:

### 8.8-11-1 Mercaptoacetic acid (100.0%)

<table>
<thead>
<tr>
<th>MAK (Germany)</th>
<th>Vgl. Abschn. 11b</th>
</tr>
</thead>
<tbody>
<tr>
<td>REL (USA)</td>
<td>Long-term value: 4 mg/m³, 1 ppm</td>
</tr>
<tr>
<td>TEL (USA)</td>
<td>Long-term value: 3,8 mg/m³, 1 ppm</td>
</tr>
</tbody>
</table>

Additional information: No data

8.2 Exposure controls
Personal protective equipment
General protective and hygienic measures
The usual precautionary measures should be adhered to in handling the chemicals. Keep away from foodstuffs, beverages and food. Instantly remove any soiled and impregnated garments. Wash hands during breaks and at the end of the work. Store protective clothing separately. Avoid contact with the eyes and skin. Maintain an ergonomically appropriate working environment.

Breathing equipment: Use self-contained respiratory protective device in emergency situations. Recommended filter device for short term use:
Use a respirator with organic vapor/acid gas cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards such as NIOSH (USA) or CEN (EU).

Protection of hands:
Check protective gloves prior to each use for their proper condition.
Safety data sheet
according to 1907/2006/EC, Article 31

Trade name Mercaptoacetic acid

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Material of gloves Butyl rubber, BR
Penetration time of glove material (in minutes) 480
Glove thickness 0.3 mm
Eye protection: Tightly sealed safety glasses.
Full face protection
Body protection: Protective work clothing.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
General Information
Appearance:
Form: Liquid
Colour: Colourless
Smell: Stench
Odour threshold: Not determined.

pH-value: Not determined.

Change in condition
Melting point/Melting range: -12 °C
Boiling point/Boiling range: 220 °C
Sublimation temperature / start: Not determined

Flash point: 119 °C
Inflammability (solid, gaseous) Not applicable.
Ignition temperature: Not determined
Decomposition temperature: Not determined
Self-inflammability: Not determined.

Danger of explosion: Not determined.

Critical values for explosion:
Lower: 5.9 Vol %
Upper: Not determined

Steam pressure at 20 °C: 0.1 hPa
Density at 20 °C: 1.295 g/cm³
Relative density Not determined.
Vapour density Not determined.
Evaporation rate Not determined.

Solubility in / Miscibility with
Water: Fully miscible
Partition coefficient (n-octanol/water): Not determined.

Viscosity:
dynamic: Not determined.
kinematic: Not determined.

9.2 Other information
No further relevant information available.

SECTION 10: Stability and reactivity

10.1 Reactivity
No information known.

10.2 Chemical stability
Stable under recommended storage conditions.

Thermal decomposition / conditions to be avoided: No decomposition if used and stored according to specifications.

10.3 Possibility of hazardous reactions
Reacts with strong oxidising agents

10.4 Conditions to avoid
No further relevant information available.

10.5 Incompatible materials:
Acids
Air
Oxidising agents
Bases
Metals

10.6 Hazardous decomposition products:
Carbon monoxide and carbon dioxide
Hydrogen sulphide

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity:
Toxic in contact with skin.
Toxic in contact with skin.
Toxic if inhaled.
Toxic if swallowed.
Danger by skin resorption.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

LD/LC50 values that are relevant for classification:

Oral LD50 114 mg/kg (rat)
Dermal LD50 47 mg/kg (mouse)
Inhalative LC50/4H 210 mg/m3/4H (rat)

Skin irritation or corrosion: Causes severe skin burns.
Eye irritation or corrosion: Causes serious eye damage.
Sensitization: No sensitizing effect known.

Germ cell mutagenicity: No effects known.
Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

Reproductive toxicity: No effects known.
Specific target organ system toxicity - repeated exposure: No effects known.
Specific target organ system toxicity - single exposure: No effects known.

Aspiration hazard: No effects known.

Subacute to chronic toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.

Toxic in contact with skin.

SECTION 12: Ecological information

12.1 Toxicity
Aquatic toxicity: No further relevant information available.

12.2 Persistence and degradability No further relevant information available.
12.3 Bioaccumulative potential: No further relevant information available.
12.4 Mobility in soil: No further relevant information available.

**Additional ecological information:**

General notes:
- Do not allow material to be released to the environment without proper governmental permits.
- Water hazard class 1 (Assessment by list): slightly hazardous for water.
- Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.
- Avoid transfer into the environment.

**12.5 Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

**12.6 Other adverse effects:** No further relevant information available.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

**Recommendation:**
- Hand over to disposers of hazardous waste.
- Must be specially treated under adherence to official regulations.
- Consult state, local or national regulations for proper disposal.

**Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

## SECTION 14: Transport information

### 14.2 UN proper shipping name

**ADR**

THIOGLYCOLIC ACID

**IMDG, IATA**

THIOGLYCOLIC ACID

### 14.3 Transport hazard class(es)

**ADR**

- **Class:** 8 (C3) Corrosive substances.
- **Label:** 8

**IMDG, IATA**

- **Class:** 8 Corrosive substances.
- **Label:** 8

**Packing group**

**ADR, IMDG, IATA**

II

### 14.5 Environmental hazards:

Not applicable.

### 14.6 Special precautions for user

**Warning:** Corrosive substances.

**Kemler Number:** 80

**EMS Number:** F-A,S-B

**Segregation groups:** Acids

### 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC

**Code**

Not applicable.

**Transport/Additional information:**

**ADR**

- **Excepted quantities (EQ):** E2
- **Limited quantities (LQ):** 1L
- **Transport category:** 2
- **Tunnel restriction code:** E

**UN "Model Regulation":**

UN1940, THIOGLYCOLIC ACID, 8, II

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

**Australian Inventory of Chemical Substances** Substances is listed.

**Standard for the Uniform Scheduling of Drugs and Poisons** Substance is not listed.

**National regulations**

- **Information about limitation of use:** Employment restrictions concerning young persons must be observed.
- For use only by technically qualified individuals.
- **Classification according to VbF:** Not applicable

**Technical instructions (air):**

<table>
<thead>
<tr>
<th>Class</th>
<th>Share in %</th>
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<tbody>
<tr>
<td>1</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Water hazard class:** Water hazard class 1 (Assessment by list): slightly hazardous for water.

**Other regulations, limitations and prohibitive regulations**

**ELINCS (European List of Notified Chemical Substances)** Substance is not listed.

**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006** Substance is not listed.

**The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.**

**Substance is not listed.**

**Annex XIV of the REACH Regulations (requiring Authorisation for use)** Substance is not listed.

### 15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing SDS:** Global Marketing Department

**Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>ADR</td>
<td>Accord européen sur le transport des marchandises dangeresuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Code for Dangerous Goods</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>GHS</td>
<td>Globally Harmonized System of Classification and Labelling of Chemicals</td>
</tr>
<tr>
<td>EINECS</td>
<td>European Inventory of Existing Commercial Chemical Substances</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (division of the American Chemical Society)</td>
</tr>
<tr>
<td>VbF</td>
<td>Verordnung über brennbare Flüssigkeiten, Österreich (Ordinance on the storage of combustible liquids, Austria)</td>
</tr>
<tr>
<td>LD50</td>
<td>Lethal dose, 50 percent</td>
</tr>
<tr>
<td>vPvB</td>
<td>very Persistent and very Bioaccumulative</td>
</tr>
<tr>
<td>ACGIH</td>
<td>American Conference of Governmental Industrial Hygienists (USA)</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration (USA)</td>
</tr>
<tr>
<td>NTP</td>
<td>National Toxicology Program (USA)</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>EPA</td>
<td>Environmental Protection Agency (USA)</td>
</tr>
</tbody>
</table>