1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name: L-Cysteine hydrochloride monohydrate

Product Number: C7880
Brand: Sigma-Aldrich
REACH No.: A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

CAS-No.: 7048-04-6

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

Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company: Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO  63103
USA

Telephone: +1 800-325-5832
Fax: +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone #: (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

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: Warning

Hazard statement(s)
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary statement(s)
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ eye protection/ face protection.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
\textbf{P304 + P340} IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

\textbf{P305 + P351 + P338} IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

\textbf{P312} Call a POISON CENTER or doctor/physician if you feel unwell.

\textbf{P321} Specific treatment (see supplemental first aid instructions on this label).

\textbf{P332 + P313} If skin irritation occurs: Get medical advice/attention.

\textbf{P337 + P313} If eye irritation persists: Get medical advice/attention.

\textbf{P362} Take off contaminated clothing and wash before reuse.

\textbf{P403 + P233} Store in a well-ventilated place. Keep container tightly closed.

\textbf{P405} Store locked up.

\textbf{P501} Dispose of contents/container to an approved waste disposal plant.

\textbf{2.3 Hazards not otherwise classified (HNOC) or not covered by GHS} - none

\textbf{3. COMPOSITION/INFORMATION ON INGREDIENTS}

\textbf{3.1 Substances}

\textbf{Formula:} \(C_3H_7NO_2S \cdot HCl \cdot H_2O\)

\textbf{Molecular Weight:} 175.63 g/mol

\textbf{CAS-No.:} 7048-04-6

\textbf{EC-No.:} 200-157-7

\textbf{Hazardous components}

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-Cysteine hydrochloride monohydrate</td>
<td>Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; H315, H319, H335</td>
</tr>
</tbody>
</table>

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

\textbf{4. FIRST AID MEASURES}

\textbf{4.1 Description of first aid measures}

\textbf{General advice}

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

\textbf{If inhaled}

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

\textbf{In case of skin contact}

Wash off with soap and plenty of water. Consult a physician.

\textbf{In case of eye contact}

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

\textbf{If swallowed}

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

\textbf{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.

\textbf{4.3 Indication of any immediate medical attention and special treatment needed}

no data available

\textbf{5. FIREFIGHTING MEASURES}

\textbf{5.1 Extinguishing media}

\textbf{Suitable extinguishing media}

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
5.2 Special hazards arising from the substance or mixture
Carbon oxides, nitrogen oxides (NOx), Sulphur oxides, Hydrogen chloride gas

5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information
no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. 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
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. 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. Air and light sensitive.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls
Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 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: 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 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
impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- a) Appearance Form: solid
- b) Odour no data available
- c) Odour Threshold no data available
- d) pH 1.0 - 2 at 25 g/l
- e) Melting point/freezing point 176 °C (349 °F)
- f) Initial boiling point and boiling range no data available
- g) Flash point no data available
- h) Evaporation rate no data available
- i) Flammability (solid, gas) no data available
- j) Upper/lower flammability or explosive limits no data available
- k) Vapour pressure no data available
- l) Vapour density no data available
- m) Relative density no data available
- n) Water solubility 100 g/l at 25 °C (77 °F)
- o) Partition coefficient: n-octanol/water no data available
- p) Auto-ignition temperature no data available
- q) Decomposition temperature no data available
- r) Viscosity no data available
9.2 Other safety information

Bulk density 800 kg/m³

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
May discolor on exposure to air and light. Exposure to moisture.

10.5 Incompatible materials
Strong oxidizing agents, Metals

10.6 Hazardous decomposition products
Other decomposition products - no data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
no data available
Inhalation: no data available
Dermal: no data available
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.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

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 identified as a carcinogen or potential carcinogen by OSHA.

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

12. ECOLOGICAL INFORMATION
12.1 Toxicity
no data available
12.2 Persistence and degradability
no data available
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
no data available

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.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION
DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION
REACH No.: A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

SARA 313 Components
SARA 313: 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**
No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

<table>
<thead>
<tr>
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<th>CAS-No.</th>
<th>Revision Date</th>
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**New Jersey Right To Know Components**

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</tbody>
</table>

**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.

**16. OTHER INFORMATION**

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

- **Eye Irrit.**
  - Eye irritation
- **H315**
  - Causes skin irritation.
- **H319**
  - Causes serious eye irritation.
- **H335**
  - May cause respiratory irritation.
- **Skin Irrit.**
  - Skin irritation
- **STOT SE**
  - Specific target organ toxicity - single exposure

**HMIS Rating**

- Health hazard: 2
- Chronic Health Hazard:
- Flammability: 0
- Physical Hazard: 0

**NFPA Rating**

- Health hazard: 2
- Fire Hazard: 0
- Reactivity Hazard: 0

**Further information**

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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 and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

**Preparation Information**

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

Version: 5.1   Revision Date: 02/26/2014   Print Date: 03/12/2014