

**Safety data sheet**  
according to 1907/2006/EC, Article 31

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Version number 4.00 (replaces version 3.01)

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

- **1.1 Product identifier**
  - **Trade name:** L-Cysteine hydrochloride monohydrate
  - **Article number:** A3698
  - **CAS Number:**  
7048-04-6
  - **EC number:**  
200-157-7
  - **Application of the substance / the mixture** Laboratory chemicals
  - **1.3 Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:**  
AppliChem GmbH  
Ottoweg 4  
D-64291 Darmstadt
  - **Further information obtainable from:** Dept. Compliance
  - **1.4 Emergency telephone number:** +49(0)6151 93570 (Inside normal business hours)
- Tel.: +49 (0)6151 93570  
Fax.: +49 (0)6151 935711  
msds@applichem.com

**SECTION 2: Hazards identification**

- **2.1 Classification of the substance or mixture**
  - **Classification according to Regulation (EC) No 1272/2008**  
Eye Irrit. 2 H319 Causes serious eye irritation.
  - **2.2 Label elements**
  - **Labelling according to Regulation (EC) No 1272/2008**  
The substance is classified and labelled according to the CLP regulation.
  - **Hazard pictograms**
-   
GHS07
- **Signal word** Warning
  - **Hazard statements**  
H319 Causes serious eye irritation.
  - **Precautionary statements**  
P264 Wash thoroughly after handling.  
P280 Wear eye protection / face protection.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337+P313 If eye irritation persists: Get medical advice/attention.

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- **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 No. Description**  
7048-04-6 L-Cysteine hydrochloride monohydrate
- **Identification number(s)**
- **EC number:** 200-157-7

### SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:** Involve doctor immediately.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**  
Immediately remove any clothing soiled by the product.  
Immediately wash with water and soap and rinse thoroughly.  
Seek medical treatment.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**  
Rinse out mouth.  
make victim drink water (maximum of 2 drinking glasses)  
Seek medical treatment.
- **4.2 Most important symptoms and effects, both acute and delayed**  
No further relevant information available.
- **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:** Use fire extinguishing methods suitable to surrounding conditions.
- **5.2 Special hazards arising from the substance or mixture**  
In case of fire, the following can be released:  
Nitrogen oxides (NOx)  
Carbon monoxide and carbon dioxide  
Sulphur oxides (SOx)  
Hydrogen chloride (HCl)  
Phosgene gas  
Non-combustible.
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information**  
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**  
Avoid formation of dust.  
Avoid substance contact.  
Ensure adequate ventilation
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

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- **6.3 Methods and material for containment and cleaning up:**  
Pick up mechanically.  
Avoid formation of dust.  
Clean up affected area.
- **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 disposal information.

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

- **7.1 Precautions for safe handling** Any unavoidable deposit of dust must be regularly removed.
- **Information about fire - and explosion protection:**  
Dust can combine with air to form an explosive mixture.  
The product is not flammable.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**  
Do not use light alloy receptacles.  
No aluminium, tin or zinc containers.  
Provide acid-resistant floor.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Protect from exposure to the light.  
Keep container tightly sealed.  
Open receptacle only under localised extractor facilities.
- **Recommended storage temperature:** Room Temperature
- **Storage class:** 13
- **7.3 Specific end use(s)** No further relevant information available.

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

- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Appropriate engineering controls** No further data; see item 7.
- **Individual protection measures, such as personal protective equipment**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes and skin.
- **Respiratory protection:**  
Required when dusts are generated.  
Filter P2
- **Hand protection**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**  
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.
- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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- **For the permanent contact gloves made of the following materials are suitable:**  
Nitrile rubber, NBR  
Recommended thickness of the material:  $\geq 0.11$  mm  
Value for the permeation: Level  $\geq 480$  min
- **As protection from splashes gloves made of the following materials are suitable:**  
Nitrile rubber, NBR  
Recommended thickness of the material:  $\geq 0.11$  mm  
Value for the permeation: Level  $\geq 480$  min
- **Eye/face protection**



Tightly sealed goggles

- **Body protection:**  
Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.

## SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
- **General Information**
- **Physical state** Solid
- **Colour:** White
- **Odour:** Pungent
- **Odour threshold:** Not determined.
- **Melting point/freezing point:**  $>240$  °C
- **Boiling point or initial boiling point and boiling range** Undetermined.
- **Flammability** Not determined.
- **Lower and upper explosion limit**
- **Lower:** Not determined.
- **Upper:**  $125$  g/m<sup>3</sup>
- **Flash point:** Not applicable.
- **Auto-ignition temperature:** Not determined.
- **Decomposition temperature:** Not determined.
- **pH** 0.8-1.2 (10%)
- **Viscosity:**
- **Kinematic viscosity** Not applicable.
- **Dynamic:** Not applicable.
- **Solubility**
- **water at 20 °C:** 650 g/l
- **Partition coefficient n-octanol/water (log value)** Not determined.
- **Vapour pressure:** Not applicable.
- **Density and/or relative density**
- **Density:** Not determined.
- **Relative density** Not determined.
- **Bulk density:** 800 kg/m<sup>3</sup>
- **Vapour density** Not applicable.

- **9.2 Other information**
- **Appearance:**
- **Form:** Solid
- **Important information on protection of health and environment, and on safety.**
- **Ignition temperature:** 380 °C
- **Explosive properties:** Product does not present an explosion hazard.

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- **Change in condition**
- **Evaporation rate** Not applicable.
- **Information with regard to physical hazard classes**
- **Explosives** Void
- **Flammable gases** Void
- **Aerosols** Void
- **Oxidising gases** Void
- **Gases under pressure** Void
- **Flammable liquids** Void
- **Flammable solids** Void
- **Self-reactive substances and mixtures** Void
- **Pyrophoric liquids** Void
- **Pyrophoric solids** Void
- **Self-heating substances and mixtures** Void
- **Substances and mixtures, which emit flammable gases in contact with water** Void
- **Oxidising liquids** Void
- **Oxidising solids** Void
- **Organic peroxides** Void
- **Corrosive to metals** Void
- **Desensitised explosives** Void

## SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** oxidizing agent
- **10.6 Hazardous decomposition products:** In the event of fire: See chapter 5
- **Additional information:** light sensitive

## SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **LD/LC50 values relevant for classification:**

Components	Type	Value	Species
Oral	LD50	5,850 mg/kg	(rat)
Dermal	LD50	>2,000 mg/kg	(rat)

- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation**  
Causes serious eye irritation.
- **After inhalation:** No irritant effect.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

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- **11.2 Information on other hazards**
- **Endocrine disrupting properties** Substance is not listed.

**SECTION 12: Ecological information**

- **12.1 Toxicity**
- **Aquatic toxicity:**

Type of test	Effective concentration	Method	Assessment
EC50/72 h	>100 mg/l	(Algae)	
EC50/48 h	>100 mg/l	(daphnia magna)	
LC50/96 h	>100 mg/l	(fish)	

- **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.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties**  
The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Additional ecological information:**
- **General notes:**  
Do not allow product to reach ground water, water course or sewage system.  
Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values.  
A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.  
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water

**SECTION 13: Disposal considerations**

- **13.1 Waste treatment methods**
- **Recommendation**  
Chemicals must be disposed of in compliance with the respective national regulations.  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:**  
Disposal must be made according to official regulations.  
Packagings that may not be cleansed are to be disposed of in the same manner as the product.

**SECTION 14: Transport information**

<ul style="list-style-type: none"> <li>· <b>14.1 UN number or ID number</b></li> <li>· <b>ADR, ADN, IMDG, IATA</b></li> </ul>	Void
<ul style="list-style-type: none"> <li>· <b>14.2 UN proper shipping name</b></li> <li>· <b>ADR, ADN, IMDG, IATA</b></li> </ul>	Void
<ul style="list-style-type: none"> <li>· <b>14.3 Transport hazard class(es)</b></li> <li>· <b>ADR, ADN, IMDG, IATA</b></li> <li>· <b>Class</b></li> </ul>	Void
<ul style="list-style-type: none"> <li>· <b>14.4 Packing group</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>	Void

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|---|-----------------|
| · <b>14.5 Environmental hazards:</b>                                  | Not applicable. |
| · <b>14.6 Special precautions for user</b>                            | Not applicable. |
| · <b>14.7 Maritime transport in bulk according to IMO instruments</b> | Not applicable. |
| · <b>UN "Model Regulation":</b>                                       | Void            |

### SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **National regulations:**
- **Other regulations, limitations and prohibitive regulations**
- **Substances of very high concern (SVHC) according to REACH, Article 57** Substance is not listed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Dept. Compliance
- **Abbreviations and acronyms:**
  - ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - SVHC: Substances of Very High Concern
  - vPvB: very Persistent and very Bioaccumulative
  - Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
- **\* Data compared to the previous version altered.**