

# SAFETY DATA SHEET

## L-Cysteine, Free Base



Revision Date: 4/19/2022  
Version 1.1

### 1. PRODUCT AND COMPANY IDENTIFICATION

#### Product Identifier

Product Name: L-Cysteine, Free Base

Synonyms: Cystein; Cysteine; Thioserine, (R)-2-Amino-3-mercaptopropionic acid

Product Form: Substance

#### Recommended use of the chemical and restrictions on use

Recommended Use: Remediation of contaminated groundwater and soils.

Restrictions on Use: Use as recommended by the label.

#### Details of the supplier and of the safety data sheet

Supplier                      Tersus Environmental, LLC  
                                         1116 Colonial Club Rd  
                                         Wake Forest, NC 27587  
                                         Phone: +1-919-453-5577  
                                         Email: [info@tersusenv.com](mailto:info@tersusenv.com)

#### Emergency telephone number

For leak, fire, spill or accident emergencies, call:

+1-919-453-5577 (Tersus Office Hours, 8:00 AM to 5:00 PM Eastern)

+1-919-638-7892 (Tersus Outside office hours)

+1-800-424-9300 (Chemtrec 24 Hour Service – Emergency Only)

+1-703-527-3887 (Chemtrec Outside United States 24 Hour Service – Emergency Only)

### 2. HAZARD IDENTIFICATION

#### Emergency Overview

##### OSHA Hazards

Harmful by ingestion.

##### GHS Classification

Acute toxicity, Oral (Category 4)

##### GHS Label elements, including precautionary statements

##### Pictogram



##### Signal word

Warning

**Hazard statement(s)**

H302 Harmful if swallowed.

**Precautionary statement(s)**

none

**HMIS Classification**

Health hazard: 1

Flammability: 0

Physical hazards: 0

**NFPA Rating**

Health hazard: 1

Fire: 0

Reactivity Hazard: 0

**Potential Health Effects****Inhalation** May be harmful if inhaled. May cause respiratory tract irritation.**Skin** Harmful if absorbed through skin. May cause skin irritation.**Eyes** May cause eye irritation.**Ingestion** Harmful if swallowed.**3. COMPOSITION/INFORMATION ON INGREDIENTS****Chemical Formula** C<sub>3</sub>H<sub>7</sub>NO<sub>2</sub>S  
**Molecular Weight** 121.16 g/mol**Hazardous components**

| Chemical Name   | Concentration (%) | CAS Number |
|-----------------|-------------------|------------|
| L-Cysteine Base | 100               | 52-90-4    |

Synonyms are provided in Section 1.

Occupational exposure limits, if available, are listed in Section 8.

**4. FIRST AID MEASURES**

|                                                             |                                                                                                                                                                                                                         |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye Contact                                                 | Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention                                         |
| Skin Contact                                                | In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Coldwater may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention. |
| Inhalation                                                  | If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.                                                                          |
| Ingestion                                                   | Rinse out mouth with water. Health injuries are not known or expected under normal use.                                                                                                                                 |
| Most important symptoms and effects, both acute and delayed | Information not available                                                                                                                                                                                               |

Indication of any immediate medical attention and special treatment needed

If exposed or concerned, get medical advice and attention.

## 5. FIRE-FIGHTING MEASURES

|                                                              |                                                                                                                                                            |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Suitable Extinguishing Media</b>                          | SMALL FIRE: Use DRY chemical powder.<br>LARGE FIRE: Use water spray, fog, or foam. Do not use water jet.                                                   |
| <b>Specific Hazards Arising from the chemical or mixture</b> | These products are carbon oxides (CO, CO <sub>2</sub> ), nitrogen oxides (NO, NO <sub>2</sub> ...), sulfur oxides (SO <sub>2</sub> , SO <sub>3</sub> ...). |
| <b>Special Fire Fighting Procedures</b>                      | Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.                                               |

## 6. ACCIDENTAL RELEASE MEASURES

|                                             |                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Personal Precautions</b>                 | Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.                                                                                                                                                                                                                                         |
| <b>First Aid:</b>                           | In case of contact with skin, wash with soap and water. If symptoms occur, seek medical attention. In case of contact with eyes, rinse with plenty of water for at least 15 minutes and see an eye specialist if irritation persists. In case of inhalation, remove to fresh air. In case of ingestion, drink water. If symptoms occur, seek medical assistance.                            |
| <b>Environmental Precautions</b>            | Do not discharge into drains, sewers, or watercourses or onto the ground. Inform the relevant authorities if this occurs. Spilled product should be removed immediately to avoid formation of dust. Contain spill, sweep up avoiding airborne dust. Provide enough ventilation. Recover product for reuse if possible. Avoid contamination of waterways and (if large quantity) vegetation. |
| <b>Methods for Containment and Clean Up</b> | Spilled product should be removed immediately. Provide enough ventilation. Recover product for reuse if possible. Avoid contamination of waterways and (if large quantity) vegetation. Absorb in non-combustible material, vermiculite, dry sand or earth and place into containers.                                                                                                        |

## 7. HANDLING AND STORAGE

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Precautions for safe handling</b>                                | Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents |
| <b>Conditions for safe storage, including any incompatibilities</b> | Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 20°C (68°F).                                                                                                                                                                                                                                                                                |

## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

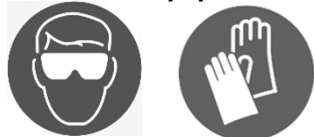
### Control parameters

Exposure guidelines, ingredients with workplace control parameters.

Contains no substances with occupational exposure limit values.

### Exposure Control

#### Protective equipment



#### **Appropriate engineering controls**

Where possible, provide general mechanical and/or local exhaust ventilation.

#### **Eye/face protection**

The following protection should be worn: safety glasses with shields, chemical splash goggles or face shield.

#### **Respiratory protection**

Not needed

#### **Hand protection**

Neoprene. Vinyl, Rubber (natural, latex), Butyl rubber. Wear protective gloves made of the following material: Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. Polyvinyl chloride (PVC). Manufactured/tested in accordance with EN 374, Avoid the following conditions: Polyvinyl alcohol (PVA).

#### **Other skin and body protection**

Wear appropriate clothing to prevent any possibility of skin contact.

#### **Hygiene measures**

Wash promptly if skin becomes contaminated. Wash hands at the end of each work shift and before eating, smoking, and using the toilet. When using do not eat, drink, or smoke.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

|                                               |                                               |
|-----------------------------------------------|-----------------------------------------------|
| Appearance                                    | White solid                                   |
| Odor                                          | Unknown                                       |
| Odor threshold                                | Information Not Available                     |
| pH                                            | Unknown                                       |
| Melting point /Freezing Point                 | Decomposition temperature: 220.05°C (428.1°F) |
| Initial Boiling point and boiling point range | Unknown                                       |
| Flash Point                                   | Unknown                                       |
| Evaporation rate                              | Unknown                                       |
| Flammability (solid; gas)                     | Unknown                                       |
| Upper/lower flammability or explosive limits  | Unknown                                       |
| Vapor pressure                                | Unknown                                       |

|                                               |                               |
|-----------------------------------------------|-------------------------------|
| Vapor density                                 | Unknown                       |
| Molecular Weight                              | 121.2 g/mole                  |
| Solubility                                    | Easily soluble in cold water. |
| Partition coefficient: n-octanol/water        | Does Not Apply                |
| Initial Boiling point and boiling point range | Does Not Apply                |
| Auto-ignition temperature                     | Unknown                       |
| Decomposition temperature                     | Unknown                       |
| Viscosity                                     | Unknown                       |

## 10. STABILITY AND REACTIVITY

|                                           |                                                                                                                                                                           |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Reactivity</b>                         | Stable under normal conditions and use.                                                                                                                                   |
| <b>Chemical stability</b>                 | Information not available                                                                                                                                                 |
| <b>Possibility of hazardous reactions</b> | Information not available                                                                                                                                                 |
| <b>Conditions to avoid</b>                | Not available.                                                                                                                                                            |
| <b>Incompatible materials</b>             | Unknown.                                                                                                                                                                  |
| <b>Hazardous decomposition products</b>   | Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), Sulphur oxides<br>Other decomposition products - no data available |
| <b>Hazardous Polymerization</b>           | Unknown                                                                                                                                                                   |

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity

#### Oral LD50

LD50 Oral - rat - 1,890 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity). Lungs, Thorax, or Respiration:Dyspnea. Kidney, Ureter, Bladder:Other changes in urine composition.

#### Inhalation LC50

no data available

#### Dermal LD50

no data available

#### Other information on acute toxicity

no data available

### Skin Corrosion/Irritation

no data available

### Serious Eye Damage/Eye Irritation

no data available

### Respiratory or Skin Sensitization

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

**Teratogenicity**

no data available

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

no data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

no data available

**Aspiration Hazard**

no data available

**Potential Health Effects**

**Inhalation** May be harmful if inhaled. May cause respiratory tract irritation.

**Ingestion** Harmful if swallowed.

**Skin** Harmful if absorbed through skin. May cause skin irritation.

**Eyes** May cause eye irritation.

**Signs and Symptoms of Exposure**

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

**Synergistic Effects**

no data available

**Additional Information**

RTECS: HA1600000

**12. ECOLOGICAL INFORMATION****Chemical Fate Information**

Information Not Available

**Biodegradability**

The products of degradation are less toxic than the product itself.

**13. DISPOSAL CONSIDERATIONS****Waste Disposal Methods**

Dispose according to federal, state, and local laws. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Authority.

**14. TRANSPORTATION INFORMATION****U.S. (D.O.T.)**

|                       |                                                     |
|-----------------------|-----------------------------------------------------|
| Proper Shipping Name: | Chemicals not otherwise indexed (NOI) nonhazardous. |
| Hazard Class:         | Not applicable                                      |
| UN/NA:                | Not applicable                                      |
| Labels:               | Not applicable                                      |

**Canada (T.D.G.)**

|                       |                                                     |
|-----------------------|-----------------------------------------------------|
| Proper Shipping Name: | Chemicals not otherwise indexed (NOI) nonhazardous. |
| Hazard Class:         | Not applicable                                      |
| UN/NA:                | Not applicable                                      |
| Labels:               | Not applicable                                      |

**IMDG**

|                       |                                                     |
|-----------------------|-----------------------------------------------------|
| Proper Shipping Name: | Chemicals not otherwise indexed (NOI) nonhazardous. |
| Hazard Class:         | Not applicable                                      |
| UN/NA:                | Not applicable                                      |
| Labels:               | Not applicable                                      |

**IATA**

|                       |                                                     |
|-----------------------|-----------------------------------------------------|
| Proper Shipping Name: | Chemicals not otherwise indexed (NOI) nonhazardous. |
| Hazard Class:         | Not applicable                                      |
| UN/NA:                | Not applicable                                      |
| Labels:               | Not applicable                                      |

**15. REGULATORY INFORMATION****TSCA**

No

**SARA TITLE III**

Section 302 (EHS) Ingredients: No

Section 313 Ingredients: No

Section 304 (EHS/CERCLA) Ingredients: No

**SARA TITLE III Notification Information**

Acute Health Hazard: No

Chronic Health Hazard: No

Fire Hazard: No

Sudden Release of Pressure Hazard: No

**16. OTHER INFORMATION**

Components not precisely identified are proprietary or non-hazardous.

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**End of Safety Data Sheet**