



# NEWAY SINOPHC TECH. LIMITED

ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.  
Email:marketing01@newayphc.com; Phone:+86-021-50350029 <https://www.newayphc.com>

## Safety Data Sheet (MSDS)

**According to GB/T 16483 and GB/T 17519; Adapts to GHS, IMDG, IATA Standards**  
**Product Name:** L-Cystine (Food Grade, Crystalline Powder)  
**Revision Date:** February 26, 2026

### SECTION 1: Identification of the Substance/Mixture and of the Company/Undertaking

#### 1.1 Product Identifiers

- Product Name: L-Cystine (Food Grade)
- Product Number: LCY-20260228
- Brand: SIGALD
- CAS-No.: 7048-46-6
- EINECS-No.: 230-317-6
- Synonyms: (R,R)-3,3'-Dithiobis(2-aminopropanoic acid); L-Cystinum; Food grade L-Cystine
- Product Form: White crystalline free-flowing powder

#### 1.2 Details of the Supplier

- Company: NEWAY SINOPHC TECH. LIMITED
- Address: RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
- Telephone: +86-021-50350029
- Fax: +86-021-50350029

#### 1.3 Emergency Telephone

Emergency Phone #: +86-021-50350029 (CHEMTREC)

#### 1.4 Relevant Identified Uses and Uses Advised Against

- **Identified Uses:** Food additive (nutritional supplement, amino acid fortifier); raw material for food, beverage, health food and pharmaceutical industry; feed additive auxiliary material.
- **Uses Advised Against:** Not for injection without pharmaceutical grade purification; no use in high-temperature processing (>200°C) without microencapsulation; no excessive addition beyond food additive limit standards.

### SECTION 2: Hazards Identification

#### 2.1 GHS Classification

Not classified as a hazardous substance or mixture under GHS (Regulation (EC) 1272/2008)

#### 2.2 GHS Label Elements

- Hazard Pictogram: None
- Signal Word: None
- Hazard Statements: None
- Precautionary Statements: P261, P271, P330

#### 2.3 Physical and Chemical Hazards

Non-combustible, non-explosive; stable under normal use conditions; sparingly soluble in water, no hygroscopicity; no physical/chemical hazard risks.

#### 2.4 Health Hazards



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Generally non-toxic; essential amino acid for human/animal body; inhalation of fine crystalline powder may cause mild respiratory irritation in sensitive individuals; no acute/chronic toxic effects at standard use dosages.

## 2.5 Environmental Hazards

Environmentally friendly; fully biodegradable by microorganisms; no toxic effects on aquatic/terrestrial organisms; no bioaccumulation potential; no environmental pollution risk.

## 2.6 Other Hazards

No additional hazards identified; dust may form slippery surfaces on hard floors.

## SECTION 3: Composition/Information on Ingredients

### 3.1 Basic Composition

- Substance / Mixture: **Pure chemical substance (essential amino acid)**
- Active Component: L-Cystine (99.0-99.8%, CAS 7048-46-6)
- Inert Components: No artificial additives, binders, preservatives or fillers
- Hazardous Impurities: None (all heavy metals/impurities meet food grade limit requirements)
- Key Purity Index: Assay  $\geq 99.0\%$ , specific rotation  $[-215^\circ \sim -225^\circ]$

### 3.2 Hazardous Ingredients

None (all components are non-hazardous and meet food safety standards)

## SECTION 4: First Aid Measures

### 4.1 Description of First-Aid Measures

- **If Inhaled:** Move to fresh air, keep at rest in a comfortable position. If coughing/irritation persists, rinse mouth with water and consult a doctor if needed.
- **In Case of Skin Contact:** Rinse skin thoroughly with running water for 5 minutes; remove contaminated clothing and wash before reuse. No special treatment required for normal contact.
- **In Case of Eye Contact:** Rinse eyes cautiously with plenty of running water for 10-15 minutes; remove contact lenses if present. Consult a doctor only if irritation persists.
- **If Swallowed:** Rinse mouth with water; drink a small amount of warm water. Do not induce vomiting. No toxic effects at normal intake; consult a doctor only if excessive ingestion causes gastrointestinal discomfort.

### 4.2 Most Important Symptoms and Effects

- **Acute Effects:** Mild respiratory/eye irritation from fine powder inhalation in sensitive individuals; no other acute toxic effects.
- **Delayed Effects:** No known delayed toxic effects based on long-term food/pharmaceutical use data.

### 4.3 Immediate Medical Attention

No specific medical treatment required; treat symptomatically if irritation/symptoms persist for more than 24 hours.

### 4.4 Notes to Physician



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Inform the physician of the product composition (pure food-grade L-Cystine, essential amino acid) if medical consultation is needed.

## SECTION 5: Fire-Fighting Measures

### 5.1 Extinguishing Media

- **Suitable:** Water spray, foam, carbon dioxide (CO<sub>2</sub>), dry chemical powder.
- **Unsuitable:** No limitations of extinguishing agents.

### 5.2 Special Hazards Arising from the Substance

Non-combustible; decomposes at extreme high temperature (>200°C) to produce non-toxic carbon dioxide, water, nitrogen and sulfur dioxide (trace); no hazardous combustion gases; extremely low dust explosion risk in confined spaces (negligible).

### 5.3 Advice for Firefighters

Wear standard fire-fighting protective gear (gloves, goggles, dust respirator); avoid inhalation of thermal decomposition dust; eliminate dust cloud if possible; fight fire from a safe distance.

## SECTION 6: Accidental Release Measures

### 6.1 Personal Precautions

Wear FFP1 dust mask, nitrile rubber gloves and safety goggles; ensure good ventilation at the spill site; wear non-slip shoes as dust may cause slippery surfaces.

### 6.2 Environmental Precautions

No special environmental precautions; the product is biodegradable and non-polluting; sweep up spilled powder to avoid direct entry into water bodies (no eutrophication risk).

### 6.3 Methods for Clean-Up

- **Small Spill:** Gently sweep up the powder with a brush and collect in a sealed plastic container for reuse/disposal; wipe the floor with water to remove residual dust and prevent slipping.
- **Large Spill:** Contain with plastic barriers; transfer to sealed drums for recycling; clean the contaminated area with water and dry thoroughly.

### 6.4 Reference

For disposal, see Section 13.

## SECTION 7: Handling and Storage

### 7.1 Precautions for Safe Handling

- Operate in a well-ventilated area; use dust suppression measures (mist spray) to avoid fine powder formation/inhalation during mixing/transfer.
- Avoid contact with strong oxidizing agents, concentrated acids/alkalis and high-temperature environments (>200°C) to prevent decomposition.
- Hygiene Measures: Wash hands thoroughly with soap and water after handling; do not eat/drink/smoke while operating the product (food grade, follow food hygiene standards).
- Mixing Note: Dissolve in dilute acid/alkali first for uniform dispersion in liquid food; direct dry mixing for solid food.

### 7.2 Conditions for Safe Storage



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- **Storage Conditions:** Store in a cool, dry, well-ventilated warehouse; keep container tightly sealed; storage temperature  $\leq 25^{\circ}\text{C}$ , relative humidity  $\leq 65\%$ .
- **Incompatibilities:** Strong oxidizing agents (hydrogen peroxide, chlorine), concentrated mineral acids (HCl,  $\text{H}_2\text{SO}_4$ ), concentrated strong alkalis (NaOH, KOH), high-temperature processing equipment ( $>200^{\circ}\text{C}$ ).
- **Storage Class (TRGS 510):** 13 (Non-Hazardous Solids)
- **Shelf Life:** 36 months (unopened, under specified storage conditions); 12 months after opening (seal tightly and store in dry environment).

## SECTION 8: Exposure Controls/Personal Protection

### 8.1 Control Parameters

No specific occupational exposure limit (OEL) for L-Cystine; follow general food additive dust exposure limits (TWA  $10\text{ mg}/\text{m}^3$ ) and food hygiene operation standards.

### 8.2 Exposure Controls

- **Engineering Controls:** Local exhaust ventilation (LEV) for large-scale processing; dust collection system to reduce airborne powder concentration; maintain low humidity in storage/processing areas.
- **Personal Protective Equipment (PPE):**
  - Eye/Face Protection: Safety goggles with side shields (mandatory for bulk handling/mixing).
  - Skin Protection: Nitrile rubber gloves (food grade,  $\geq 0.11\text{ mm}$  thickness) and clean protective clothing for prolonged contact.
  - Respiratory Protection: FFP1 dust mask for regular handling; FFP2 mask for large-scale spill/fine dust generation.
  - Foot Protection: Non-slip food-grade safety shoes for all handling operations.
  - Hygiene: Provide food-grade hand washing facilities with soap/pure water at the workplace.
- **Environmental Exposure:** Install dust collection systems; collected dust can be reused (meets food grade standards).

## SECTION 9: Physical and Chemical Properties

a) Physical State: Crystalline powder b) Color: White to off-white c) Odor: Odorless, no pungent smell d) Melting Point:  $260\text{-}265^{\circ}\text{C}$  (decomposes) e) Boiling Point: Not applicable (decomposes before boiling) f) Flammability: Non-combustible g) Flammability Limits: Not applicable h) Flash Point: Not applicable i) Autoignition Temperature:  $> 300^{\circ}\text{C}$  j) Decomposition Temperature:  $\geq 200^{\circ}\text{C}$  k) pH Value (1% aqueous suspension,  $25^{\circ}\text{C}$ ): 5.0-6.5 l) Viscosity: N/A (solid);  $5\text{-}10\text{ mPa}\cdot\text{s}$  (1% in 0.1M HCl,  $25^{\circ}\text{C}$ ) m) Solubility: Sparingly soluble in water ( $0.011\text{ g}/100\text{ mL}$  at  $25^{\circ}\text{C}$ ); soluble in dilute acid/alkali; insoluble in ethanol, ether, chloroform n) Partition Coefficient (log Kow): -3.8 (hydrophilic) o) Vapor Pressure ( $25^{\circ}\text{C}$ ): Negligible ( $< 0.0001\text{ hPa}$ ) p) Density ( $25^{\circ}\text{C}$ , solid):  $1.677\text{ g}/\text{cm}^3$  q) Bulk Density:  $0.7\text{-}1.0\text{ g}/\text{cm}^3$  r) Explosive Properties: Not explosives s) Oxidizing Properties: None t) Hygroscopy: Non-hygroscopic

## SECTION 10: Stability and Reactivity

## 10.1 Chemical Stability

Stable under recommended storage/use conditions ( $\leq 25^{\circ}\text{C}$ , dry, sealed); stable in food system pH (3.0-8.0); no degradation at normal food processing temperature ( $< 120^{\circ}\text{C}$ ).

## 10.2 Possibility of Hazardous Reactions

No hazardous reactions under normal use/handling conditions; no polymerization.

## 10.3 Conditions to Avoid

High temperature ( $> 200^{\circ}\text{C}$ ), direct contact with strong oxidizing agents/concentrated acids/alkalis, prolonged exposure to open air (no hygroscopicity, but avoid contamination).

## 10.4 Incompatible Materials

Concentrated oxidizing agents, concentrated mineral acids, concentrated strong alkalis, heavy metal salts (high concentration).

## 10.5 Hazardous Decomposition Products

No hazardous decomposition products; decomposes into non-toxic carbon dioxide, water, nitrogen and trace sulfur dioxide at  $> 200^{\circ}\text{C}$ ; no toxic by-products.

## SECTION 11: Toxicological Information

### 11.1 Information on Toxicological Effects

- **Acute Toxicity:** Oral (Rat,  $\text{LD}_{50}$ )  $> 10,000$  mg/kg (practically non-toxic); Dermal (Rabbit,  $\text{LD}_{50}$ )  $> 20,000$  mg/kg; Inhalation (Rat,  $\text{LC}_{50}$ )  $> 10$  mg/m<sup>3</sup> (4-hour exposure)
- **Skin Corrosion/Irritation:** No irritation (Rabbit, 4-hour exposure, food grade)
- **Serious Eye Damage/Irritation:** Mild transient irritation (Rabbit, 24-hour exposure; reversible)
- **Respiratory/Skin Sensitization:** No sensitizing effects (long-term use data)
- **Germ Cell Mutagenicity:** No mutagenic effects (Ames test, chromosome aberration test)
- **Carcinogenicity:** IARC Class 3 (not classifiable); recognized as safe food additive by FDA/FAO/WHO
- **Reproductive Toxicity:** No adverse reproductive effects (animal tests at 5000 mg/kg body weight)
- **Specific Target Organ Toxicity:** No target organ toxicity; essential amino acid for human/animal body, participates in protein synthesis and antioxidant defense
- **Aspiration Hazard:** Low (crystalline powder, high bulk density, no aspiration risk)

### 11.2 Additional Information

L-Cystine is an essential sulfur-containing amino acid, a food additive approved by FAO/WHO/Codex Alimentarius; long-term food/pharmaceutical use confirms its safety at standard dosages.

## SECTION 12: Ecological Information

### 12.1 Toxicity

- Fish (Zebrafish,  $\text{LC}_{50}$ ):  $> 5000$  mg/L (96-hour exposure)
- Daphnia ( $\text{EC}_{50}$ ):  $> 2000$  mg/L (48-hour exposure)

- Algae (EC<sub>50</sub>): > 5000 mg/L (72-hour exposure) No toxic effects on aquatic organisms; slight nutrient supplement effect for microorganisms.

## 12.2 Persistence and Degradability

Fully biodegradable (BOD<sub>5</sub> /COD > 0.9) in aquatic/soil environments; degraded by microorganisms into small molecules and inorganic substances within 3-7 days; no residual pollution.

## 12.3 Bioaccumulative Potential

None; L-Cystine is an amino acid, rapidly metabolized/utilized by all organisms; no bioaccumulation in aquatic/terrestrial organisms.

## 12.4 Mobility in Soil

Low mobility (sparingly soluble in water); binds to soil organic matter/clay minerals; rapidly degraded by soil microorganisms; no long-term accumulation.

## 12.5 PBT/vPvB Assessment

Not classified as PBT/vPvB (fully biodegradable, non-toxic, no bioaccumulation).

## 12.6 Endocrine Disrupting Properties

No endocrine disrupting effects (standard tests and food use data).

## 12.7 Other Adverse Effects

No known adverse ecological impacts; environmentally benign, serves as a microbial nutrient in natural environment.

## SECTION 13: Disposal Considerations

### 13.1 Waste Treatment Methods

- **Product Waste:** Uncontaminated waste can be reused as food/feed additive; contaminated waste can be disposed of as non-hazardous solid waste in accordance with local/national food safety regulations; aqueous waste can be treated by biological wastewater treatment systems.
- **Packaging Waste:** Rinse empty containers thoroughly with pure water (rinse water can be used for food/feed preparation if qualified); dispose of rinsed packaging as food-grade non-hazardous waste or recycle (HDPE/paper packaging).

### 13.2 Disposal Notes

Incineration is not recommended (wastes a valuable amino acid resource); landfilling is acceptable and the product will biodegrade in soil, serving as a microbial nutrient; avoid large amounts of spilled powder entering water bodies (no environmental risk, but follow food waste disposal standards).

## SECTION 14: Transport Information

### 14.1 UN Number

ADR/RID: -; IMDG: -; IATA-DGR: -

### 14.2 UN Proper Shipping Name



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ADR/RID: Not dangerous goods; IMDG: Not dangerous goods; IATA-DGR: Not dangerous goods

### 14.3 Transport Hazard Class(es)

ADR/RID: -; IMDG: -; IATA-DGR: -

### 14.4 Packaging Group

ADR/RID: -; IMDG: -; IATA-DGR: -

### 14.5 Environmental Hazards

ADR/RID: No; IMDG Marine Pollutant: No; IATA-DGR: No

### 14.6 Special Precautions for User

Transport at  $\leq 25^{\circ}\text{C}$ ; avoid rain, moisture, direct sunlight and package collision during transport; use food-grade sealed/moisture-proof packaging; prevent powder leakage; use pallets for loading to avoid ground contact.

### 14.7 Incompatible Materials

Avoid transport with strong oxidizing agents, concentrated acids/alkalis, toxic/hazardous chemicals and non-food grade materials.

**Further Information:** Classified as non-dangerous goods under international transport regulations; comply with food additive transport hygiene standards.

## SECTION 15: Regulatory Information

### 15.1 National Regulations (China)

- Hazardous Chemical Safety Management Regulation (Non-hazardous classification)
- National Food Safety Standard for Food Additives (GB 1886.20-2016)
- GB 2760-2021 (National Food Safety Standard for Use of Food Additives)
- Food Hygiene Law of the People's Republic of China

### 15.2 International Regulations

- GHS Classification (Rev. 9): Non-hazardous
- REACH (EU): Registered; not listed in SVHC Candidate List; complies with EC 1333/2008 (food additives)
- TSCA (US): Listed on the TSCA Inventory; GRAS certified by FDA (21 CFR 172.320)
- Codex Alimentarius (FAO/WHO): Approved as food amino acid fortifier (Codex STAN 192-1995)
- EFSA (EU): Evaluated and approved for food use (EFSA Journal 2012; 10(12):3017)

### 15.3 Other Regulations

Comply with local food safety, environmental protection and transport regulations; follow the maximum addition limit of amino acid fortifiers in food products.

## SECTION 16: Other Information

### 16.1 Further Information

This MSDS is based on current scientific knowledge and complies with GB/T 16483, GB/T 17519, GHS, IMDG and IATA standards. It is intended for the safe handling, storage, transport and



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disposal of food-grade L-Cystine. The supplier is not liable for any damage caused by improper use, non-compliance with safety precautions or violation of food additive use standards.

### 16.2 Revision History

First version (February 26, 2026)

