

Safety Data Sheet (MSDS)

- **Food Grade L-Aspartic Acid**(Compliant with GB/T 16483, GB 1886.237-2016, GHS Rev.9, IMDG, IATA)**Revision Date: 18 FEB 2026**

SECTION 1: Identification

1.1 Product Identifiers

- Name: L-Aspartic Acid (Food Grade)
- Product Number: LAA-FOOD-20260218
- Brand: SIGALD
- CAS No.: 56-84-8
- Synonyms: (S)-2-Aminobutanedioic acid; L-2-Aminosuccinic acid
- Molecular Formula: $C_4H_7NO_4$
- Molecular Weight: 133.10 g/mol

1.2 Supplier Details

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

1.3 Emergency Contact: +86-021-50350029 (24h)

1.4 Uses & Restrictions

- **Identified Uses:** Food additive (nutrient fortifier, flavor modifier, acidulant); used in beverages, dairy, bakery, nutritional food, condiments and sports nutrition products.
- **Uses Advised Against:** Not for pharmaceutical injection use; no excessive direct oral consumption in undiluted form.

SECTION 2: Hazards Identification

2.1 GHS Classification

- Skin irritation (Category 2) - mild irritation from concentrated powder contact
- Eye irritation (Category 2) - mild irritation from powder contact

2.2 GHS Label Elements

- Pictogram: (Exclamation Mark)
- Signal Word: **Warning**
- Hazard Statements:
 - H315: Causes skin irritation
 - H319: Causes serious eye irritation
- Precautionary Statements:
 - P264: Wash hands thoroughly after handling
 - P280: Wear protective gloves/eye protection
 - P302+P352: If on skin: Wash with plenty of soap and water
 - P305+P351+P338: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.



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2.3 Summary White odorless crystalline powder, slightly hygroscopic, soluble in water. Non-flammable, non-explosive, non-toxic at food additive dosages. Mild skin/eye irritation may occur from direct bulk powder contact; no acute/chronic systemic toxicity. As a non-essential amino acid for humans, it is a safe food additive compliant with international standards, participates in human energy metabolism and protein synthesis. Environmentally friendly, fully biodegradable, no adverse effects on aquatic/terrestrial organisms.

SECTION 3: Composition/Information on Ingredients

- **Substance/Mixture:** Pure substance ($\geq 98.5\%$)
- **Active Component:** L-Aspartic Acid (CAS 56-84-8), 98.5-99.5% (w/w)
- **Impurities:** Trace water and inorganic salts ($\leq 1.5\%$), no hazardous ingredients
- **Hazardous Components:** None (at food grade application concentrations)

SECTION 4: First Aid Measures

4.1 First-Aid Measures

- **Inhalation:** Move victim to fresh air if dust inhalation causes coughing. No special treatment required; symptoms subside spontaneously. Seek medical advice only if irritation persists.
- **Skin Contact:** Rinse contaminated skin with plenty of running water for 5-10 minutes. Wipe off residual powder first; mild irritation will resolve without further treatment.
- **Eye Contact:** Rinse eyes thoroughly with clean running water for 10-15 minutes, hold eyelids open during rinsing. Remove contact lenses if present. Consult an ophthalmologist only if irritation persists for more than 1 hour.
- **Ingestion (Human):** Rinse mouth with water. Dilute with a large volume of water if undiluted powder is swallowed. No toxic effects; seek medical advice only if rare gastrointestinal discomfort occurs.

4.2 Key Symptoms & Effects: Mild transient skin/eye irritation from bulk powder contact; no systemic toxic effects. 4.3 Antidote: No specific antidote; treat symptomatically if needed.

SECTION 5: Firefighting Measures

5.1 Extinguishing Media: Water spray, carbon dioxide (CO_2), dry chemical powder, foam. All common agents are suitable. 5.2 Hazards in Fire: Non-combustible. Decomposes at high temperatures ($>270^\circ\text{C}$) to produce non-toxic ammonia, carbon dioxide and water; no hazardous combustion gases, smoke or residues. No explosion risk. 5.3 Firefighter Advice: Wear standard fire-fighting gear and a dust mask to avoid inhalation of combustion powder. Cool surrounding containers with water spray to prevent thermal expansion and powder scattering.

SECTION 6: Accidental Release Measures

6.1 Personal Precautions: Wear N95 dust mask, food-grade nitrile gloves and safety glasses for large spills to avoid dust inhalation and skin/eye contact. Ensure good ventilation in the spill area. 6.2 Environmental Precautions: No special environmental precautions; fully biodegradable. Prevent large amounts from entering water bodies to avoid temporary minor pH reduction (no toxic impact on aquatic life). 6.3 Cleanup Methods:



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- **Small Spill:** Sweep into a sealed HDPE container for reuse. Wipe the area with a dry cloth and dispose of as general waste.
 - **Large Spill:** Collect with a dust-free vacuum cleaner into sealed drums. Avoid contact with excessive water to prevent hygroscopic caking and slippery surfaces.
- 6.4 Disposal Reference:
See Section 13.

SECTION 7: Handling and Storage

7.1 Handling Precautions

- Operate in a well-ventilated area with local dust extraction for bulk handling. Avoid generating dust during weighing/mixing.
- Use dry food-grade equipment/tools (slightly hygroscopic); avoid contact with strong oxidizers, strong alkalis and high-temperature environments ($>60^{\circ}\text{C}$) for long periods.
- Hygiene Measures: Wash hands with soap and water after handling; avoid touching eyes/mouth before hand washing; comply with food hygiene GMP standards.

7.2 Storage Conditions

- **Temperature:** $\leq 25^{\circ}\text{C}$; store in a cool, dry, well-ventilated food-grade warehouse
- **Humidity:** $\leq 60\%$ (prevent hygroscopic caking)
- **Packaging:** Keep tightly sealed in original food-grade moisture-proof aluminum foil bags/HDPE drums with inner PE liners
- **Shelf Life: 36 months (unopened, under specified conditions)**
- **Incompatibilities:** Strong oxidizing agents (e.g., KMnO_4 , H_2O_2), strong bases (e.g., NaOH , KOH)
- **Segregation:** Store separately from oxidizers, alkalis and non-food grade chemicals. Mark "FOOD GRADE" clearly.

SECTION 8: Exposure Controls/Personal Protection

8.1 Occupational Exposure Limit (OEL)

- No specific OEL for L-Aspartic Acid; follow general industrial dust limit (10 mg/m^3 TWA, respirable fraction) and food hygiene standards.

8.2 Engineering Controls

- Local exhaust ventilation in bulk handling/loading areas to control dust concentration.
- Closed mixing systems for food production to minimize dust release and ensure hygiene.

8.3 Personal Protective Equipment (PPE)

- **Respiratory:** N95 dust mask (for bulk handling/loading/unloading only)
- **Eye/Face:** Food-grade safety glasses (mandatory for large-scale handling)
- **Skin:** Food-grade nitrile rubber gloves (recommended for direct powder contact)
- **Other:** Dust-proof food-grade overalls and shoes (for food production environment)

SECTION 9: Physical and Chemical Properties

Property	Details (25°C, 1 atm)
Physical State	White crystalline powder
Odor	Odorless
Taste	Slightly sour taste
pH Value (1% aqueous)	2.5~3.0
Melting Point	270°C (decomposes)
Boiling Point	N/A (decomposes before boiling)
Flash Point	Not applicable (non-combustible)
Flammability	Non-combustible
Hygroscopy	Slightly hygroscopic
Water Solubility	Soluble (5.0 g/100 mL at 25°C)
Ethanol Solubility	Slightly soluble
Methanol Solubility	Sparingly soluble
Bulk Density	0.78-0.92 g/cm ³
True Density	1.661 g/cm ³
Vapor Pressure	<0.0001 kPa
Specific Rotation	+24.0° ~ +26.0° ([α] ₂₀ ^D , 5 mol/L HCl)
Decomposition Temperature	>270°C

SECTION 10: Stability and Reactivity

10.1 Chemical Stability: Stable under recommended storage/use conditions (cool, dry, sealed, away from oxidizers/alkalis). Slightly hygroscopic in humid air; no chemical degradation under normal food processing conditions. 10.2 Hazardous Reactions: No hazardous reactions under normal use. Reacts with strong alkalis to form aspartates; reacts with strong oxidizers only at high temperatures to produce non-toxic decomposition products. 10.3 Conditions to Avoid: High humidity, high temperature (>60°C), direct contact with strong oxidizers/alkalis, prolonged exposure to open air. 10.4 Incompatible Materials: Potassium permanganate, hydrogen peroxide, concentrated sodium hydroxide, concentrated potassium hydroxide. 10.5 Hazardous Decomposition Products: Ammonia, carbon dioxide, water (no toxic fumes or residues). 10.6 Hazardous Polymerization: Will not occur.

SECTION 11: Toxicological Information

11.1 Toxicological Effects

- **Acute Toxicity:** Oral (Rat) LD₅₀ >30,000 mg/kg; Dermal (Rabbit) LD₅₀ >20,000 mg/kg; Inhalation (Rat) LC₅₀ >50 mg/m³ (4h) (Non-toxic)
- **Skin Corrosion/Irritation:** Mild irritation (GHS Category 2) from bulk powder; no irritation at food-grade diluted concentrations
- **Serious Eye Damage/Irritation:** Mild irritation (GHS Category 2) from powder contact; fully reversible within 1 hour
- **Respiratory/Skin Sensitization:** No sensitizing effects (no known allergic reactions)
- **Carcinogenicity:** IARC Classification - Group 3 (not classifiable); human non-essential amino acid with no carcinogenic risk

- **Reproductive Toxicity:** No reproductive toxicity; essential for human cell metabolism and energy synthesis
- **Target Organ Toxicity:** No single/repeated exposure target organ toxicity at any food additive dosage
- **Mutagenicity:** No mutagenic effects detected in standard tests
- **Aspiration Hazard:** Low (crystalline powder, no aspiration risk under normal handling)

11.2 Additional Information: L-Aspartic Acid is a major non-essential amino acid in the human body, involved in the Krebs cycle for energy production and protein synthesis. It is a safe food additive with no cumulative toxicity at recommended application levels, and is widely used in nutritional fortification and flavor modification of food.

SECTION 12: Ecological Information

12.1 Aquatic Toxicity: LC₅₀ (Zebrafish, 96h) >5000 mg/L; EC₅₀ (Daphnia, 48h) >5000 mg/L (Non-toxic to aquatic organisms) 12.2 Persistence and Degradability: Fully biodegradable (BOD₅ /COD >0.8) in soil and aquatic environments; degraded by microorganisms into amino acids and inorganic salts within 5-7 days 12.3 Bioaccumulative Potential: No bioaccumulation potential (water-soluble, amino acid, rapidly metabolized by all organisms) 12.4 Mobility in Soil: Moderate mobility (water-soluble); binds weakly to soil organic matter, minor leaching risk (no environmental pollution) 12.5 Environmental Impact: Environmentally friendly; food production discharge causes no adverse soil/water effects. Excretion in human/animal waste acts as a nutrient source for soil microorganisms, improving soil fertility. Large spills cause no secondary pollution.

SECTION 13: Disposal Considerations

13.1 Product Waste: Expired/caked L-Aspartic Acid is non-hazardous waste. Can be reused (if re-dried/crushed and qualified by retest) or disposed of as general solid waste. Mix with organic fertilizer for soil amendment (amino acid/nutrient supplement) is allowed. 13.2 Packaging Waste: Rinse packaging thoroughly with water (meet food hygiene standards); recycle food-grade PP/HDPE packaging as non-hazardous plastic waste or dispose of as general waste. 13.3 Disposal Compliance: Comply with China General Solid Waste Pollution Control Law, Food Safety Law and local environmental regulations. No special treatment required for waste product.

SECTION 14: Transport Information

- **UN Number:** None (Non-hazardous goods for transport)
- **UN Proper Shipping Name:** L-Aspartic Acid (Food Grade), Not Dangerous Goods
- **Hazard Class:** None | **Packaging Group:** None | **Environmental Hazard:** No
- **Transport Precautions:**
 1. Transport in covered, dry food-grade ordinary cargo vehicles; avoid rain/snow/humidity (prevent hygroscopic caking and contamination).



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2. Secure packaging with pallets; avoid collision/damage to prevent dust leakage and packaging contamination.
3. Avoid mixing with strong oxidizers, strong alkalis and non-food grade chemicals in the same vehicle.
4. Protect from direct sunlight and high temperature ($\leq 30^{\circ}\text{C}$) during summer transport; comply with food additive transport hygiene standards.

SECTION 15: Regulatory Information

- **China:** Compliant with **GB 1886.237-2016 (National Food Safety Standard for L-Aspartic Acid)**, **GB 2760 (Food Additive Use Standard)**, listed in the national food additive catalogue as nutrient fortifier and flavor modifier.
- **EU:** Compliant with EC 1333/2008 (Food Additive Regulation), REACH registered (56-84-8), not in SVHC List, approved for all food categories.
- **US:** TSCA listed (56-84-8), approved by FDA for food additive use (21 CFR Part 172.320), meets GRAS standards, widely used as nutritional fortifier and acidulant.
- **International:** Complies with Codex Alimentarius Commission (CAC) food additive specifications; accepted globally for food additive use in nutritional fortification, flavor modification and acid regulation.

SECTION 16: Other Information

- **Disclaimer:** This MSDS is for food grade L-Aspartic Acid (56-84-8) only. Misuse for non-food purposes (e.g., undiluted oral consumption, industrial non-food use) is at the user's sole risk. The supplier is not liable for damages from improper handling/storage/transport/use.
- **Key Note:** The product is slightly hygroscopic and acidic; ensure sealed storage, dry food-grade handling and avoid contact with strong alkalis to maintain product quality.
- **Revision Date:** 18 FEB 2026