



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)

- DL-Alanine (Food Grade)

(Compliant with GB/T 16483, GB/T 17519; Adapts to GHS Rev.9, IMDG, IATA Standards)**Revision**

Date: 26 FEB 2026

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

1.1 Product Identifiers

- Product Name: DL-Alanine (Food Grade)
- Product Number: DLA-20260226
- Brand: SIGALD
- CAS-No.: 302-72-7
- EINECS/EC-No.: 206-126-4
- MDL Number: MFCD00064306
- Synonyms: DL-2-Aminopropanoic acid; Racemic Alanine; Food Grade Alanine

1.2 Details of the supplier of the safety data sheet

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

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

1.4 Relevant Identified Uses and Uses Advised Against

- Identified Uses: Food additive (flavor enhancer, nutrient fortifier, taste improver, buffer) for beverage, bakery, dairy, meat products, condiments, sports nutrition food and instant food industries; also used as a food raw material for amino acid supplementation.
- Uses Advised Against: Not for pharmaceutical injection use; avoid excessive inhalation of dust for asthmatic individuals; no use in high-temperature strong oxidizing systems (>200°C).

SECTION 2: Hazards Identification

2.1 GHS Classification Not a hazardous substance or mixture (GHS 0 category); mild respiratory/eye irritation may occur from bulk dust inhalation (no formal GHS classification).

2.2 GHS Label Elements

- Hazard Pictogram: None
- Signal Word: None
- Hazard Statements: None
- Precautionary Statements: P261 (Avoid breathing dust), P304+P340 (If inhaled: Move person to fresh air and keep comfortable for breathing), P337+P313 (If eye irritation persists: Get medical advice/attention)



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2.3 Physical and Chemical Hazards No physical or chemical hazards; non-combustible, no explosion risk, no oxidative properties, minimal hygroscopicity; stable under normal food processing and storage conditions.

2.4 Health Hazards No acute/chronic systemic toxicity; mild temporary respiratory/eye irritation may occur in sensitive individuals from bulk dust contact; no skin irritation/sensitization; no known allergenicity (food-grade amino acid, natural component of human body).

2.5 Environmental Hazards Environmentally friendly; fully biodegradable (microbial degradation to inorganic nutrients); no adverse effects on aquatic/terrestrial organisms; no bioaccumulation potential; no soil/water pollution risk; acts as a nitrogen nutrient source for soil microorganisms.

2.6 Other Hazards No additional hazards identified for food grade application.

SECTION 3: Composition/Information on Ingredients

- Substance / Mixture: Pure substance (100% DL-Alanine, food grade)
- Chemical Name: DL-2-Aminopropanoic acid
- Formula: $C_3H_7NO_2$
- Molecular Weight: 89.09 Da
- CAS-No.: 302-72-7
- EINECS/EC-No.: 206-126-4

Hazardous Ingredients: None (100% food-grade DL-Alanine, complies with GB 2760, FDA GRAS and EU 1333/2008 standards)

Component	Classification	Concentration (w/w)	CAS No.
DL-Alanine	Non-hazardous (food grade)	≥99.0%	302-72-7

SECTION 4: First Aid Measures

4.1 Description of First-Aid Measures

- If Inhaled: Move victim to fresh air. Rest and maintain comfortable breathing. Rinse mouth with water. No special treatment required if no discomfort; consult a doctor if coughing/respiratory irritation persists for more than 2 hours.
- In Case of Skin Contact: Brush off residual powder and rinse skin with running water for 3-5 minutes. No further treatment needed (no skin irritation or absorption).
- In Case of Eye Contact: Rinse eyes thoroughly with plenty of running water for 5-10 minutes (hold eyelids open). Remove contact lenses if present. Consult a doctor only if mild irritation persists for more than 1 hour.
- If Swallowed: Rinse mouth with water. Drink plenty of water or milk (do not induce vomiting). The product is food-grade and non-toxic; accidental ingestion (even in large amounts) causes no adverse effects (metabolized as an amino acid in the human body). No medical treatment required unless gastrointestinal discomfort occurs.

4.2 Most Important Symptoms and Effects



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- Acute Effects: Mild transient respiratory/eye irritation from bulk dust (sensitive individuals only); no other acute toxic effects.
- Delayed Effects: No known delayed toxic effects based on comprehensive toxicological testing and industrial application data.

4.3 Indication of Immediate Medical Attention No specific medical treatment required; treat symptomatically if mild irritation persists (no antidote needed). Inform the physician of the product name (DL-Alanine) if medical consultation is required.

SECTION 5: Firefighting Measures

5.1 Extinguishing Media

- Suitable Extinguishing Media: Water spray, foam, carbon dioxide (CO₂), dry chemical powder (all common fire-extinguishing agents).
- Unsuitable Extinguishing Media: None (no limitations for this product).

5.2 Special Hazards Arising from the Substance or Mixture Non-combustible; decomposes at high temperature (>280°C) to produce non-toxic carbon dioxide, water, nitrogen and low-concentration ammonia; no hazardous combustion gases/smoke; no explosion risk under any fire conditions.

5.3 Advice for Firefighters Wear standard fire-fighting gear (disposable dust mask recommended for heavy smoke from high-temperature decomposition); cool surrounding containers with water spray to prevent thermal expansion. No special fire-fighting precautions needed.

SECTION 6: Accidental Release Measures

6.1 Personal Precautions Wear N95 dust mask and disposable food-grade nitrile gloves for large spills to avoid dust inhalation/skin contact; ensure good ventilation in the spill area; evacuate non-essential personnel only if a large dust cloud forms.

6.2 Environmental Precautions No special environmental precautions; the product is fully biodegradable and non-polluting; no risk to soil/water/aquatic life even for large accidental spills (serves as a microbial nutrient).

6.3 Methods and Materials for Containment and Cleaning Up

- Small Spill: Sweep into a sealed HDPE container for reuse; wipe the area with a dry cloth (dispose as general waste).
- Large Spill: Collect with a dust-free vacuum cleaner into sealed food-grade drums for reuse; avoid contact with excessive water (prevents temporary clumping, no loss of activity).

6.4 Reference to Other Sections For disposal of uncontaminated waste, see Section 13.

SECTION 7: Handling and Storage

7.1 Precautions for Safe Handling

- Operate in a well-ventilated area with local exhaust ventilation (for bulk handling) to prevent dust accumulation and inhalation.

- Avoid generating dust during weighing/mixing; use dry food-grade equipment/tools (minimal hygroscopicity); add slowly to water for dissolution (no splashing).
- Avoid contact with strong acids (pH <3), strong bases (pH >9) and high-temperature oxidizing agents (>200°C) for prolonged periods (prevents amino acid degradation/racemization).
- Hygiene Measures: Wash hands with soap and water after handling; comply with food GMP hygiene standards; no eating/drinking/smoking in the processing area.

7.2 Conditions for Safe Storage

- Storage Conditions: Store in a cool, dry, well-ventilated food-grade warehouse; temperature ≤25°C, relative humidity ≤60%; keep container tightly sealed; avoid direct sunlight and moisture.
- Incompatibilities: Concentrated strong acids (HCl, H₂SO₄), concentrated strong bases (NaOH, KOH), strong oxidizing agents (H₂O₂, KMnO₄), high-temperature heat sources (>200°C).
- Storage Class (TRGS 510): 13 (Non-Hazardous Solids)
- **Shelf Life:** 36 months (unopened, under specified storage conditions); 6 months after opening (if resealed with food-grade moisture-proof tape and stored properly).

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters No official occupational exposure limits for food-grade DL-Alanine (CAS 302-72-7); follow general industrial dust limit (10 mg/m³ TWA, respirable fraction) for bulk handling (national occupational health standards).

8.2 Exposure Controls

- Engineering Controls: Local exhaust ventilation (air exchange rate ≥6 times/hour) for bulk handling/loading/unloading; closed mixing systems for food production (minimizes dust release and ensures hygiene).
- Personal Protective Equipment (PPE):
 - Respiratory Protection: N95 dust mask (**only** for bulk handling/loading/unloading; not required for routine small-scale use).
 - Eye/Face Protection: Food-grade safety glasses (recommended for large-scale handling to prevent dust from entering eyes).
 - Skin Protection: Disposable food-grade nitrile gloves (optional; no skin irritation/absorption risk).
 - Other: Dust-proof food-grade overalls and non-slip shoes (for food production environment).
- Environmental Exposure Controls: No special controls (biodegradable, non-polluting, serves as environmental microbial nutrient).

SECTION 9: Physical and Chemical Properties

Property	Details (25°C, 1 atm)
Physical State	White crystalline powder; free-flowing
Color	Pure white
Odor	Slight characteristic amino acid odor; no off-flavor
Melting Point	295-300°C (decomposition, no melting)
Boiling Point	N/A (solid, decomposes before boiling)
Flammability	Non-combustible (solid powder)
Flash Point	Not applicable
Autoignition Temperature	>350°C
Decomposition Temperature	>280°C (amino acid decomposition, non-toxic)
pH Value (5% aqueous)	5.5-7.0
Water Solubility	Soluble in water (166 g/L at 25°C, clear solution)
Solubility in Organic Solvents	Slightly soluble in ethanol; insoluble in ether, acetone
Bulk Density	0.70-0.90 g/cm ³
True Density	1.43 g/cm ³
Hygroscopy	Minimal hygroscopicity (no caking under normal storage)
Vapor Pressure	<0.0001 kPa
Viscosity	N/A (solid; 5% aqueous solution: 2-3 mPa s)
Refractive Index	N/A (solid)
Specific Rotation	±0.5° (25°C, 5% in H ₂ O)
Explosive Properties	Not explosive (no dust explosion risk under normal handling)
Oxidizing Properties	None
Buffer Capacity	Moderate (effective in pH 5.0-7.0 food systems)

SECTION 10: Stability and Reactivity

10.1 Chemical Stability: **Extremely stable** under recommended storage/use conditions ($\leq 25^{\circ}\text{C}$, dry, sealed); no chemical degradation, racemization or activity loss for 36 months (unopened). Minimal hygroscopicity, no caking or structural change under normal storage.

10.2 Possibility of Hazardous Reactions: No hazardous reactions under normal food processing/use conditions; no polymerization, no decomposition, no toxic byproduct formation. Reacts with strong acids/bases to form non-toxic salts (no gas/heat release).

10.3 Conditions to Avoid: High temperature ($>200^{\circ}\text{C}$ for prolonged periods), high humidity ($>60\%$), direct contact with strong acids/alkalis/strong oxidizing agents, prolonged exposure to open air (minor moisture absorption).

10.4 Incompatible Materials: Concentrated strong acids (HCl, H₂SO₄), concentrated strong bases (NaOH, KOH), strong oxidizing agents (H₂O₂, KMnO₄), heavy metal ions (Ag⁺, Hg²⁺).

10.5 Hazardous Decomposition Products: No hazardous decomposition products; decomposes at $>280^{\circ}\text{C}$ to produce non-toxic CO₂, H₂O, N₂ and low-concentration NH₃ (no toxic fumes/residues).

10.6 Hazardous Polymerization: Will not occur under any conditions.

SECTION 11: Toxicological Information

11.1 Information on Toxicological Effects

- **Acute Toxicity:** Oral (Rat, LD₅₀) $>50,000$ mg/kg; Dermal (Rabbit, LD₅₀) $>50,000$ mg/kg; Inhalation (Rat, LC₅₀) >100 mg/m³ (4h) – **Absolutely non-toxic (food grade amino acid).**

- **Skin Corrosion/Irritation:** No skin irritation (Rabbit, 24h exposure; GHS 0 category).
- **Serious Eye Damage/Irritation:** Mild transient irritation from bulk dust (Rabbit, 24h exposure; fully reversible within 30min; no eye damage).
- **Respiratory/Skin Sensitization:** No sensitizing effects (no known allergic reactions in humans/animals; natural amino acid, component of human muscle and tissue).
- **Germ Cell Mutagenicity:** No mutagenic effects (Ames test, chromosome aberration test negative).
- **Carcinogenicity:** Not classified as carcinogenic (IARC Group 3; no carcinogenic risk in humans/animals; essential dietary amino acid precursor).
- **Reproductive Toxicity:** No reproductive/developmental toxicity (rat feeding test at 10,000 mg/kg/day negative; supports fetal growth and development).
- **Specific Target Organ Toxicity:** No single/repeated exposure target organ toxicity (even at ultra-high dosage; metabolized as energy and protein synthesis raw material in the human body).
- **Aspiration Hazard:** Low (crystalline powder, high bulk density; no aspiration risk under normal handling conditions).

11.2 Additional Information DL-Alanine (CAS 302-72-7) is a racemic mixture of L-alanine and D-alanine; L-alanine is an essential non-essential amino acid for the human body, which can be synthesized endogenously and absorbed from food. No cumulative toxicity, genotoxicity or organ toxicity; safe for long-term food application and high-dose nutritional supplementation.

SECTION 12: Ecological Information

12.1 Toxicity: Zebrafish (LC₅₀, 96h) >20,000 mg/L; Daphnia (EC₅₀, 48h) >20,000 mg/L; Algae (EC₅₀, 72h) >10,000 mg/L – **Non-toxic to all aquatic organisms** (serves as microbial nutrient). 12.2 Persistence and Degradability: Fully biodegradable (BOD₅/COD >0.95) in soil/aquatic environments; degraded by microorganisms into inorganic nutrients (CO₂, H₂O, NH₃) within 2-5 days, no residual. 12.3 Bioaccumulative Potential: No bioaccumulation potential (water-soluble amino acid; rapidly metabolized by all organisms, no tissue accumulation). 12.4 Mobility in Soil: Low to moderate mobility; binds weakly to soil organic matter; no leaching risk; acts as a high-quality nitrogen nutrient source for soil microorganisms (improves soil fertility and ecological environment). 12.5 PBT/vPvB Assessment: Not classified as PBT/vPvB (biodegradable, non-toxic, no bioaccumulation, no persistence). 12.6 Other Adverse Effects: No known adverse ecological impacts; the product is an environmentally friendly food additive that improves soil microbial activity, no soil/water pollution risk.

SECTION 13: Disposal Considerations

13.1 Waste Treatment Methods

- **Product Waste:** Uncontaminated waste can be fully reused (even if slightly clumped by moisture, no loss of activity); expired waste is non-hazardous and can be disposed of as general solid waste, or mixed with organic fertilizer (serves as high-quality nitrogen nutrient for

plants/microorganisms). Contaminated waste shall be disposed of through licensed waste treatment facilities in accordance with local regulations.

- **Packaging Waste:** Rinse packaging thoroughly with water (meet food hygiene standards); recycle as non-hazardous plastic waste or dispose of as general waste (no special treatment required).

13.2 Disposal Compliance: Comply with China General Solid Waste Pollution Control Law, Food Safety Law and local environmental protection regulations; no hazardous waste treatment procedures needed (non-hazardous solid).

SECTION 14: Transport Information

14.1 UN Number: ADR/RID: -; IMDG: -; IATA-DGR: -14.2 UN Proper Shipping Name: ADR/RID: Not dangerous goods; IMDG: Not dangerous goods; IATA-DGR: Not dangerous goods14.3

Transport Hazard Class(es): None14.4 Packaging Group: None14.5 Environmental Hazards:

ADR/RID: No; IMDG Marine Pollutant: No; IATA-DGR: No14.6 Special Precautions for User

- Transport in covered, dry food-grade ordinary cargo vehicles; avoid rain, snow, moisture and direct sunlight during transport.
 - Secure packaging with pallets; avoid collision/damage (prevents dust leakage and minor moisture absorption).
 - Transport temperature $\leq 30^{\circ}\text{C}$; avoid mixing with strong acids, strong bases, strong oxidizing agents, heavy metal compounds and non-food grade chemicals in the same vehicle.14.7
- Further Information: Not classified as dangerous goods under all international transport regulations (ADR/RID, IMDG, IATA); no special transport documentation required.

SECTION 15: Regulatory Information

15.1 National/International Regulations

- **China:** Compliant with GB 2760 (National Food Safety Standard for Food Additives), GB 1886.237-2016 (Food Additive DL-Alanine); classified as non-hazardous chemical (Hazardous Chemical Safety Management Regulation).
- **EU:** Compliant with EC 1333/2008 (Food Additive Regulation); listed in EU Food Additive Catalogue (E925); not listed in SVHC Candidate List (REACH); approved for all food categories.
- **US:** TSCA listed (CAS 302-72-7); meets FDA GRAS standards (21 CFR Part 172.320); approved for food use as flavor enhancer/nutrient fortifier.
- **International:** Complies with Codex Alimentarius Commission (CAC) standards for food-grade amino acids; FCC/USP certified; accepted globally for food additive application in all food industries.

15.2 Other Regulations: Comply with local food safety and environmental protection regulations; food production application must meet GMP and HACCP standards; sports nutrition food application complies with ISO 22000.

SECTION 16: Other Information



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- **Further Information:** This MSDS is based on current scientific knowledge, industrial application data and official standard specifications for DL-Alanine (CAS 302-72-7). It complies with GB/T 16483, GB/T 17519 and GHS Rev.9 standards, and is intended for safe handling, storage, transport and disposal of food-grade DL-Alanine. The supplier is not liable for damage caused by improper use, non-compliance with safety precautions or storage/transport outside specified conditions.
- **Revision Date:** 26 FEB 2026
- **Version:** V1.0

