Safety Data Sheet (MSDS)

- Aminomix-BCAA (Food Grade)(Compliant with GB/T 16483, GB/T 17519; Adapts to GHS Rev.9, IMDG, IATA Standards)**Revision Date: 22 FEB 2026**

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

1.1 Product Identifiers

- Product Name: Aminomix-BCAA (Food Grade)
- Product Number: AMX-BCAA-20260222
- Brand: SIGALD
- CAS-No.: N/A (Composite); L-Leu 61-90-5, L-Ile 73-32-5, L-Val 72-18-4
- Synonyms: Food Grade BCAA Mixture; Branched-Chain Amino Acid Blend (2:1:1); Aminomix BCAA Powder

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
- 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 (nutrient fortifier, amino acid supplement) for sports nutrition food, nutritional beverage, bakery, dairy, meal replacement and health food industries.
- Uses Advised Against: Not for pharmaceutical/medical injection use; avoid excessive inhalation of dust for asthmatic individuals.

SECTION 2: Hazards Identification

2.1 GHS ClassificationNot 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)

2.3 Physical and Chemical HazardsNo physical or chemical hazards; non-combustible, no explosion risk, no oxidative properties, no hygroscopic caking under normal storage.

2.4 Health HazardsNo 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 essential amino acids).

2.5 Environmental HazardsEnvironmentally friendly; fully biodegradable (amino acid degradation by microorganisms); no adverse effects on aquatic/terrestrial organisms; no bioaccumulation potential; no soil/water pollution risk.

2.6 Other HazardsNo additional hazards identified.

SECTION 3: Composition/Information on Ingredients

- Substance / Mixture: Mixture (Food-grade branched-chain amino acid composite, 2:1:1 ratio)
- Main Components: L-Leucine (50%), L-Isoleucine (25%), L-Valine (25%) (all food-grade, pharmaceutical grade purity)
- Molecular Weight: L-Leucine 131.17 Da, L-Isoleucine 131.17 Da, L-Valine 117.15 Da
- CAS-No.: L-Leucine 61-90-5; L-Isoleucine 73-32-5; L-Valine 72-18-4

Hazardous Ingredients: None (all components comply with GB 2760 and FDA GRAS standards)

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Component	Classification	Concentration (w/w)	CAS No.
L-Leucine	Non-hazardous (food grade)	48.0-52.0%	61-90-5
L-Isoleucine	Non-hazardous (food grade)	23.0-27.0%	73-32-5
L-Valine	Non-hazardous (food grade)	23.0-27.0%	72-18-4

SECTION 4: First Aid Measures

4.1 Description of First-Aid Measures

- If Inhaled: Move victim to fresh air. Rest and maintain comfortable breathing. No special treatment required if no discomfort; consult a doctor if coughing/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. The product is food-grade and non-toxic; accidental ingestion (even in large amounts) causes no adverse effects (metabolized as essential amino acids). No medical treatment required.

4.2 Most Important Symptoms and Effects

- 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.

4.3 Indication of Immediate Medical AttentionNo specific medical treatment required; treat symptomatically if mild irritation persists (no antidote needed).

SECTION 5: Firefighting Measures

5.1 Extinguishing Media

- Suitable Extinguishing Media: Water spray, foam, carbon dioxide (CO_2), 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 MixtureNon-combustible; decomposes at high temperature (>300℃) to produce non-toxic carbon dioxide, water, nitrogen and ammonia (low concentration); no hazardous combustion gases/smoke; no explosion risk under any fire conditions.

5.3 Advice for FirefightersWear 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 PrecautionsWear 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 PrecautionsNo 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 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 SectionsFor 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).
- Avoid contact with strong acids (pH <3), strong bases (pH >9) and high-temperature environments (>100℃) for prolonged periods (prevents amino acid 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℃, relative humidity ≤60%; keep container tightly sealed; avoid direct sunlight and moisture.

- Incompatibilities: Strong acids, strong bases, strong oxidizing agents, high-temperature heat sources (>100℃).
- 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 ParametersNo official occupational exposure limits for food-grade BCAA; 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

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Property	Details (25℃, 1 atm)
Physical State	White crystalline powder; free-flowing
Color	Pure white
Odor	Slight characteristic amino acid odor; no off-flavor
Melting Point/Freezing Point	290-300℃ (decomposition, no melting)
Boiling Point	N/A (solid, decomposes before boiling)
Flammability	Non-combustible (solid powder)
Flash Point	Not applicable
Autoignition Temperature	>350℃
Decomposition Temperature	>300℃ (amino acid decomposition, non-toxic)
pH Value (5% aqueous)	5.5-7.0
Water Solubility	Soluble in water (≥ 200 g/L at 25℃, clear solution)
Bulk Density	0.65-0.85 g/cm³

Property	Details (25℃, 1 atm)
True Density	1.25-1.35 g/cm³
Hygroscopy	Slightly hygroscopic (no caking under normal storage)
Vapor Pressure	<0.0001 kPa
Viscosity	N/A (solid; 5% aqueous solution: 3-5 mPa·s)
Explosive Properties	Not explosive (no dust explosion risk under normal handling)
Oxidizing Properties	None
Optical Activity	Optically active (L-isomers, natural amino acids)

SECTION 10: Stability and Reactivity

10.1 Chemical Stability: **Extremely stable** under recommended storage/use conditions (≤25℃, 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.10.3 Conditions to Avoid: High temperature (>100℃ 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, H_2SO_4), concentrated strong bases (NaOH, KOH), strong oxidizing agents (H_2O_2, $KMnO_4$), heavy metal ions (Ag^+ , Hg^{2+}).10.5 Hazardous Decomposition Products: No hazardous decomposition products; decomposes at >300℃ to produce non-toxic CO_2, H_2O, N_2 and low-concentration NH_3 (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, LD_{50}) >50,000 mg/kg; Dermal (Rabbit, LD_{50}) >50,000 mg/kg; Inhalation (Rat, LC_{50}) >100 mg/m³ (4h) – **Absolutely non-toxic (food grade essential amino acids)**.
- **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 L-amino acids, food-grade).
- **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 acids).

- **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).
- **Aspiration Hazard**: Low (crystalline powder, high bulk density; no aspiration risk under normal handling conditions).

11.2 Additional InformationThe product is a blend of **essential branched-chain amino acids (BCAAs)** that the human body cannot synthesize and must obtain from food; no cumulative toxicity, genotoxicity or organ toxicity; safe for long-term food application and high-dose nutritional supplementation (sports nutrition).

SECTION 12: Ecological Information

12.1 Toxicity: Zebrafish (LC_{50}, 96h) >20,000 mg/L; Daphnia (EC_{50}, 48h) >20,000 mg/L; Algae (EC_{50}, 72h) >10,000 mg/L – **Non-toxic to all aquatic organisms** (serves as microbial nutrient).12.2 Persistence and Degradability: Fully biodegradable (BOD_5/COD >0.95) in soil/aquatic environments; degraded by microorganisms into inorganic nutrients (N, C, O) within 2-5 days, no residual.12.3 Bioaccumulative Potential: No bioaccumulation potential (water-soluble, small molecular weight L-amino acids; 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 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 can improve 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 ≤30℃; 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 1886.188-2016 (Food Additive L-Leucine/Isoleucine/Valine); classified as non-hazardous chemical (Hazardous Chemical Safety Management Regulation).
- **EU**: Compliant with EC 1333/2008 (Food Additive Regulation); all components listed in EU Novel Food Catalogue; not listed in SVHC Candidate List (REACH); approved for all food categories including sports nutrition food.
- **US**: TSCA listed (L-Leucine/Isoleucine/Valine); meets FDA GRAS standards (21 CFR Part 172.320); approved for food use and nutritional supplementation.
- **International**: Complies with Codex Alimentarius Commission (CAC) standards for food-grade amino acids; accepted globally for food additive application and sports nutrition supplementation.

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

- **Further Information**: This MSDS is based on current scientific knowledge and complies with GB/T 16483, GB/T 17519 and GHS Rev.9 standards. It is intended for safe handling, storage, transport and disposal of food-grade Aminomix-BCAA. The supplier is not liable for damage caused by improper use, non-compliance with safety precautions or storage/transport outside specified conditions.
- **Revision Date**: 22 FEB 2026
- **Version**: V1.0