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

Technical Data Sheet (TDS)

- Aminomix-BCAA (Food Grade)
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1. Product Overview

- **Product Name**: Aminomix-BCAA (Food Grade)
- **CAS Number**: N/A (Composite); L-Leu 61-90-5, L-Ile 73-32-5, L-Val 72-18-4
- **Formula**: L-Leucine : L-Isoleucine : L-Valine = 2:1:1 (food-grade branched-chain amino acid blend, natural L-isomers)
- **Molecular Weight**: L-Leucine 131.17 Da, L-Isoleucine 131.17 Da, L-Valine 117.15 Da
- **Product Characteristics**: High-purity food-grade BCAA mixture prepared by microbial fermentation and refined purification (non-GMO, no chemical synthesis). White free-flowing crystalline powder with slight amino acid odor, high water solubility (clear solution), stable under normal food processing and storage conditions. As an essential amino acid supplement, it cannot be synthesized by the human body and is a core food additive for **nutrient fortification, muscle protein synthesis and energy supplementation**. Non-toxic, environmentally friendly, fully biodegradable, compliant with GB 2760/FDA/EC/CAC food additive standards, suitable for various food and nutritional supplement production.

2. Technical Specifications (Compliant with National Food Additive Standards)

Item	Standard Requirement
Appearance	White crystalline powder; free-flowing, no caking
Odor	Slight characteristic amino acid odor; no off-flavor
Total BCAA Content	≥ 98.5%
L-Leucine Content	48.0-52.0%
L-Isoleucine Content	23.0-27.0%
L-Valine Content	23.0-27.0%
Moisture Content	≤ 0.5%
Ash Content	≤ 0.1%
pH Value (5% aqueous, 25℃)	5.5-7.0
Heavy Metals (as Pb)	≤ 1 ppm
Heavy Metals (As)	≤ 0.5 ppm
Cadmium (Cd)	≤ 0.05 ppm
Mercury (Hg)	≤ 0.01 ppm
Total Bacterial Count	≤ 100 CFU/g
E. coli	Negative
Salmonella	Negative in 25g
Water Solubility (25℃)	≥ 200 g/L (clear aqueous solution)
Bulk Density	0.65-0.85 g/cm³
Temperature Stability	Stable at 0-100℃ (short time); ≥98% activity retention at ≤80℃
pH Stability	Stable at pH 4.0-8.0 (≥98% activity retention)
Storage Stability	36 months unopened (≤25℃, ≤60% RH)

3. Product Advantages

1. **High Purity & Standard Ratio**: Total BCAA content ≥98.5%, classic 2:1:1 L-leucine/isoleucine/valine ratio, consistent with human nutritional needs, high bioavailability (100% absorption and utilization).
2. **Natural & Safe**: Microbial fermentation (non-GMO) and refined purification, no chemical additives, heavy metal content far lower than national standards; food-grade/FDA GRAS certified, safe for all population groups (excluding amino acid metabolic disorders).

4. Application Fields & Recommended Dosage

(Adjust dosage according to food type, nutritional fortification requirement and target population; all dosages are **w/w** based on food raw materials, *high-dose for sports nutrition*)

Application Field	Typical Products	Recommended Dosage	Core Effect
Sports Nutrition Food	Protein powder, BCAA beverage, energy bar, fitness meal replacement	5.0-20.0%	Muscle synthesis, anti-fatigue, post-exercise recovery
Nutritional Beverage	Amino acid drink, sports drink, nutrient fortified milk	1.0-5.0%	Amino acid supplementation, energy boost, taste improvement
Meal Replacement	Meal replacement powder/bar, slimming food, nutritional porridge	2.0-8.0%	Balanced amino acid, satiety enhancement, nutritional fortification
Dairy Products	Fortified milk, yogurt, cheese, milk powder	0.5-2.0%	Amino acid fortification, improve protein quality, no flavor impact
Bakery & Cereal	Nutritional bread, cake, oatmeal, cereal bars	0.3-1.5%	Balanced amino acid, fortify cereal nutrition, improve texture
Health Food	Amino acid tablets/capsules, nutritional supplements	80.0-100.0%	Pure BCAA supplementation, targeted nutritional support
Infant Complementary Food	Nutrient fortified rice flour, baby cereal (auxiliary)	0.1-0.5%	Essential amino acid supplementation, promote growth and development

5. Usage Methods & Formulation Guidelines

1. **Premixing Recommended**: For **solid food systems** (protein powder, bakery flour, meal replacement powder), premix Aminomix-BCAA with other dry ingredients (sugar, starch, milk powder) at a ratio of 1:10-1:20 to ensure uniform dispersion; no dust generation with proper mixing.
2. **Dissolution Method**: For **liquid food systems** (beverage, milk, amino acid oral liquid), dissolve Aminomix-BCAA in deionized water/liquid raw materials (20-40℃) with stirring (can be prepared as 50% stock solution); stir evenly to form a clear solution, then add to the food system (no precipitation).
3. **Processing Timing**: Add at **any stage** of food processing (early/middle/late); for high-temperature sterilization (≤121℃), add before sterilization (no activity loss for short-time high temperature); for long-term heating (>80℃), add in the late stage to avoid minor racemization.

6. Packaging, Storage & Transportation

- Small Packaging: 1 kg/5 kg food-grade aluminum foil bags (inner PE liner, vacuum sealed; for small food factories/laboratory use)
- Standard Packaging: 25 kg food-grade HDPE plastic drums (sealed, with inner PE bag; for industrial batch production)
- Bulk Packaging: 500 kg/1000 kg food-grade jumbo bags (sealed, dust-proof, moisture-proof; for large food factories/bulk purchase)
- Custom Packaging: Available upon request (100g/500g small packaging for health food, specific weight for sports nutrition products).

7. Quality Assurance & Technical Support

1. **Production Standards**: Manufactured in a GMP/HACCP-compliant food-grade production workshop; comply with ISO 9001 (Quality Management System) and ISO 22000 (Food Safety Management System); microbial fermentation process is green, no chemical pollution, non-GMO raw materials.
2. **Batch Testing**: Every batch of Aminomix-BCAA is subject to **strict multi-index testing** (physical, chemical, microbiological, purity, ratio); a detailed Certificate of Analysis (COA) is provided with each shipment to ensure compliance with national/international food additive standards.
3. **Third-Party Validation**: Accepts testing by international authoritative food inspection laboratories (SGS, Intertek, BV); test reports (compliance with FDA/EC/CAC standards) are available upon customer request; all heavy metal and purity indicators meet pharmaceutical grade standards.