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)

Issue Date: February 27, 2026**Product Name:** L-Lysine Monohydrochloride (Food Grade)**CAS Number:** 657-27-2

1. Product Overview

- **English Name**: L-Lysine Monohydrochloride (Food Grade)
- **Synonyms**: (S)-2,6-Diaminohexanoic acid hydrochloride; L-Lysine HCl; Food grade essential amino acid hydrochloride
- **CAS No.**: 657-27-2
- **Molecular Formula**: $C_6H_{14}N_2O_2 \cdot HCl$
- **Molecular Weight**: 182.65 g/mol
- **Source**: Produced by microbial fermentation and food-grade enzymatic refinement; no chemical synthesis, no heavy metal residue, high optical purity, compliant with food safety production standards and infant food raw material requirements.
- **Product Characteristics**: White crystalline free-flowing powder, odorless, food-grade essential amino acid hydrochloride with weak acidic aqueous solution; freely soluble in water, stable under normal food processing and storage conditions. As a core food additive, it is used as an amino acid fortifier and nutritional supplement, participating in human protein synthesis, collagen formation, immune function regulation and growth development; meets national/international food safety standards, especially suitable for infant, adolescent and elderly nutritional food.

2. Technical Specifications (Complies with Food Industry Standards)

Item	Specification (Food Grade)
Appearance	White to off-white free-flowing crystalline powder, no caking
Assay (L-Lysine Monohydrochloride, HPLC)	≥ 99.0%
Loss on Drying (105℃, 2h)	≤ 0.5%
Ash Content	≤ 0.1%
pH Value (1% aqueous solution, 25℃)	5.0-6.0
Specific Rotation $[\alpha]_{20}^{D}$	+20.4° ~ +21.4°
Chloride (as Cl^-)	18.0-19.0%
Sulfate (as SO_4^{2-})	≤ 0.02%
Heavy Metals (Pb)	≤ 1 ppm
Arsenic (As)	≤ 0.5 ppm
Cadmium (Cd)	≤ 0.1 ppm
Mercury (Hg)	≤ 0.01 ppm
Total Bacterial Count	≤ 100 CFU/g
Yeast & Mold	≤ 10 CFU/g
E. coli/Salmonella	Negative
Solubility	Freely soluble in water, slightly soluble in ethanol
Bulk Density	0.6-0.9 g/cm³
Temperature Stability	Stable at 0-120℃ (assay retention ≥ 98%)
pH Stability	Stable at pH 4.0-9.0 (assay retention ≥ 98%)
Optical Purity	≥ 99% (L-isomer)

3. Product Advantages

1. **Food Grade High Purity**: Assay ≥99.0%, optical purity ≥99% (L-isomer), chloride content meets standard, all impurities/heavy metals meet national/international food safety and infant food raw material limits; no chemical residue, microbial fermentation source is green and safe.

2. **Essential Amino Acid**: Human body cannot synthesize independently, core nutrient for growth and development (infant/adolescent), collagen formation (skin/bone) and immune function regulation; essential for elderly nutritional supplementation to prevent lysine deficiency.
3. **Excellent Stability**: Stable under normal food processing (≤120℃) and storage conditions; no degradation in a wide pH range (4.0-9.0); slightly hygroscopic with good anti-caking performance, long shelf life; suitable for various food processing technologies.
4. **Green & Safe**: GRAS certified by FDA, approved by FAO/WHO/Codex Alimentarius; no toxic side effects at standard use dosages, compliant with green food, organic food and infant food additive requirements.
5. **Good Compatibility**: Compatible with most food raw materials/additives (sugars, vitamins, minerals, proteins, plant extracts); avoid direct large-quantity mixing with strong alkaline raw materials; no adverse reactions, no nutrient loss.
6. **Easy to Process**: Freely soluble in water (high solubility), can be used for dry mixing of solid food or dissolution of liquid food/beverage; uniform dispersion, no affecting product taste and texture; suitable for infant milk powder, beverage and various fortified food.

4. Application Fields

L-Lysine Monohydrochloride is a food-grade essential amino acid fortifier, suitable for various food, beverage, health food, infant food, adolescent food and elderly nutritional food, especially for lysine-fortified food and infant formula:

- **Infant & Child Food**: Infant formula milk powder, follow-up formula, children's milk powder, nutritional rice flour, baby cereal, children's beverage.
- **Solid Food**: Cereal, bakery, candy, protein powder, nutritional biscuits, sports nutrition bars, elderly nutritional food, student fortified food.
- **Liquid Food/Beverage**: Functional beverage, amino acid beverage, milk, yogurt, plant-based beverage, fruit juice, nutritional supplement liquid.

5. Usage Methods

Food Type	Recommended Addition Dosage
Infant Formula Milk Powder/Nutritional Rice Flour	0.3-1.0 g/100 g
Children/Student Fortified Food/Cereal	0.2-0.8 g/100 g
Milk Powder/Protein Powder/Sports Nutrition Bar	0.15-0.6 g/100 g
Functional Beverage/Amino Acid Beverage	0.05-0.2 g/100 mL
Milk/Yogurt/Plant-based Beverage	0.02-0.08 g/100 mL
Elderly Nutritional Food/Bakery	0.1-0.5 g/100 g
Health Food (Tablets/Capsules/Supplements)	0.5-2.0 g per serving

6. Packaging & Storage

- **Small Batch**: 1 kg / 5 kg / 10 kg: Food-grade aluminum foil bags (sealed, moisture-proof, light-proof, oxygen-free) – for small-scale food production, health food, infant food and laboratory use.
- **Standard Batch**: 25 kg: Food-grade HDPE plastic drums with inner PE liner (sealed, dust-proof, moisture-proof) – for medium/large-scale food production and industrial use.
- **Bulk Batch**: 500 kg / 1000 kg: Food-grade FIBC bulk bags with PE liner (food-grade, sealed, moisture-proof valve) – for large-scale industrial production and export.
- **Custom Packaging**: Food-grade customized packaging (500 g/2 kg) available upon request for health food, infant food and pet food production.

7. Safety & Protection

- The product is food-grade, non-toxic and non-hazardous; it is an essential amino acid for the human body, with no toxic side effects at standard use dosages, safe for humans (including infants/elderly), animals and the environment; its weak acidic nature may cause mild irritation to sensitive eyes/skin upon direct contact.
- Wear food-grade PPE (safety goggles, nitrile rubber gloves, FFP1 dust mask, non-slip food-grade safety shoes) during bulk handling and mixing to avoid fine powder inhalation, eye contact and slipping on floors; handling infant food raw material should wear disposable sterile protective equipment.