AuSaMicS™ Life Science

Technical Data Sheet (TDS)
ASF-3027
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L-Cysteine Hydrochloride Monohydrate

USP Grade | Sulphur-Containing Amino Acid | Catalogue No. ASF-3027

1. Product Overview

L-Cysteine Hydrochloride Monohydrate is a sulphur-containing amino acid derivative widely used in nutritional formulations, biochemical research, and laboratory applications. It is commonly used as a source of cysteine in defined systems due to its improved stability and solubility relative to free L-cysteine. Supplied as a USP grade crystalline powder, it offers high purity, consistent quality, and predictable handling characteristics suited to applications requiring controlled amino acid content and reproducible performance.

2. Chemical & Physical Information

Product Name	L-Cysteine Hydrochloride Monohydrate
Catalogue Number	ASF-3027
CAS Number	7048-04-6
Chemical Formula	$C_3H_7NO_2S \cdot HCl \cdot H_2O$
Molecular Weight	175.63 g/mol
Grade	USP
Form	Crystalline powder
Appearance	White to off-white crystalline powder
Solubility	Soluble in water
Storage	Store in a cool, dry place; keep container tightly closed; protect from moisture and direct sunlight
HS / AHECC Code	2922.49.00 — Amino acids and their derivatives

3. Key Characteristics

- USP grade purity with defined specifications
- High chemical purity and batch-to-batch consistency
- Free-flowing crystalline powder
- Good aqueous solubility
- Suitable for food, supplement, formulation, and research use
- No added fillers, flavours, or excipients

4. Functional Role

L-Cysteine is involved in normal amino acid metabolism and sulphur balance. In formulation and research contexts, L-cysteine hydrochloride monohydrate is commonly included as part of balanced amino acid profiles and defined nutrient systems. Physiological effects depend on overall formulation design and total dietary intake.

5. Typical Applications

Category	Typical Use
Sports & active nutrition	Ingredient in amino acid blends and compound formulations; component of powders, capsules, and tablets
Food & supplement manufacturing	Raw material for nutritional supplements and functional foods; medical nutrition and specialised dietary formulations
Laboratory & research	Cell culture media supplementation; biochemical and metabolic research; formulation development and validation studies

6. Typical Specifications

Parameter	Typical Specification
Appearance	White crystals or crystalline powder
Identification	Concordant with the reference spectrum (IR)
Specific rotation [α]D25°	+5.7° to +6.8°
Assay (on dried basis)	98.5 – 101.5% wt
Loss on drying	8.0 – 12.0% wt
Sulphate (SO_4)	≤ 0.03% wt
Iron (Fe)	≤ 30 mg/kg
Residue on ignition	≤ 0.4% wt
Single impurity	≤ 0.5% wt
Total impurities	≤ 2.0% wt
Heavy metals	≤ 15 mg/kg

Exact analytical values for a given shipment are provided in the batch-specific Certificate of Analysis.

7. Storage & Stability

- Store in a cool, dry place
- Keep container tightly closed
- Protect from moisture and direct sunlight
- Stable under recommended storage conditions

8. Ingredients

100% pure L-Cysteine Hydrochloride Monohydrate (USP Grade). No added fillers, flavours, or excipients.

9. Intended Use

Supplied as a USP grade amino acid raw material suitable for food, supplement, formulation, and research use where permitted by local regulation. Not intended to diagnose, treat, cure, or prevent any disease. Not a therapeutic good.

10. Literature & References

1. United States Pharmacopeia. USP Monograph: Cysteine Hydrochloride Monohydrate.

2. ISO 7218:2007. Microbiology of food and animal feeding stuffs — General requirements and guidance for microbiological examinations. Geneva: ISO.