

Technical Data Sheet (TDS)

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1. Product Overview

- **Product Name:** Ellaplex-C (Cystamine Dimaleate)
- **CAS Number:** 56-17-7
- **Molecular Formula:** C₁₀ H₁₆ N₂O₈ S₂
- **Molecular Weight:** 356.37 g/mol
- **Chemical Source:** Synthetic high-purity biochemical raw material (produced by the reaction of cystamine with maleic acid under mild acidic conditions; purified by recrystallization, filtration and vacuum drying to achieve purity ≥99.0%; low heavy metal content and moisture, meeting industrial/biochemical/cosmetic grade requirements).
- **Product Trait:** White crystalline powder with slight amine odor; non-flammable, good solubility in water and polar organic solvents (ethanol/methanol); stable under normal storage and processing conditions; mild irritation to skin/eyes, no toxic effects on human body at normal use concentrations; compatible with most aqueous and organic formulation systems.
- **Core Properties:** **High-purity cystamine derivative** with purity ≥99.0%, low moisture (≤0.5%) and heavy metal content; excellent water solubility, stable chemical properties, good compatibility with other raw materials; acts as a disulfide bond regulator in biochemical and cosmetic applications; meets industrial, biochemical and cosmetic grade quality standards.
- **Main Application:** Biochemical raw material (disulfide bond research, enzyme modification); organic synthesis intermediate (amino acid and sulfur-containing compound synthesis); pharmaceutical intermediate (antibacterial and anti-inflammatory drug synthesis); cosmetic raw material (hair/skin repair, regulates keratin disulfide bonds).

2. Technical Specifications (High-Purity Grade, Complies with GB/ACGIH/USP Standards)

Item	Specification
Appearance	White crystalline powder, no caking
Assay (Cystamine Dimaleate)	≥ 99.0%
Water Content	≤ 0.5%
pH Value (1% aq., 25°C)	4.0-6.0
Melting Point	120-124°C
Solubility (25°C)	≥50 g/L in water; soluble in ethanol/methanol
Bulk Density (25°C)	0.90-0.95 g/cm ³
Sieve Pass Rate (80 mesh)	≥ 99.0%
Heavy Metals (Pb)	≤ 2 ppm
Heavy Metals (As)	≤ 1 ppm
Total Bacterial Count	≤ 100 CFU/g
E. coli	Negative
Storage Stability (25°C, 12 months)	Purity retention ≥ 98.0%
Decomposition Temperature	≥150°C

3. Product Advantages

1. **Ultra-High Purity & Purity Consistency:** Purity ≥99.0%, low moisture (≤0.5%) and heavy metal content; batch-to-batch purity consistency (CV ≤0.2%), ensuring stable experimental and formulation effects; 24-month shelf life under recommended storage conditions.
2. **Excellent Solubility:** Good solubility in water (≥50 g/L) and polar organic solvents (ethanol/methanol); easy to prepare aqueous and organic formulations; no precipitation or stratification in normal formulation concentration (0.1-5.0%).
3. **Stable Chemical Properties:** Stable under normal storage (≤25°C) and processing (≤80°C) conditions; no decomposition or discoloration; resistant to mild acid/alkali environment (pH 4.0-8.0); suitable for various production processes.



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- Wide Compatibility:** Compatible with most biochemical/chemical/cosmetic raw materials (excluding strong oxidizing agents/strong acids/strong bases); no adverse reaction with water, ethanol, glycerol, amino acids and most polymers; suitable for aqueous and organic formulation systems.
- Multi-Functional Application:** Serves as biochemical research raw material, organic synthesis intermediate, pharmaceutical intermediate and cosmetic repair raw material; one product for multiple industrial/biochemical/cosmetic uses, reducing production and procurement costs.
- Customizable Grades:** Can be customized to **pharmaceutical grade (USP/NF, ≥99.5%)** and **cosmetic grade (≥99.0%)** with additional purification, meeting the strict purity requirements of pharmaceutical manufacturing and cosmetic formulation.

4. Application Fields

4.1 Biochemical Research Field

- Disulfide bond structure research of proteins/enzymes; enzyme modification and activation; cell culture auxiliary raw material (low concentration); biochemical experiment reagent for sulfur-containing compound research.

4.2 Organic Synthesis Industry

- Intermediate for the synthesis of cysteine derivatives and sulfur-containing fine chemicals; raw material for the preparation of amine-based organic intermediates; catalyst auxiliary for mild organic synthesis reactions.

4.3 Pharmaceutical Manufacturing Industry

- Intermediate for the synthesis of antibacterial, anti-inflammatory and cardiovascular drugs; raw material for amino acid-based pharmaceutical preparations; disulfide bond regulator for protein drugs.

5. Usage & Formulation Guidelines

5.1 Recommended Dosage (By Application Field)

Application Field	Dosage (w/w)
Biochemical Research	0.01-0.5% (aqueous solution)
Organic Synthesis (intermediate)	10-50% (reaction system)
Pharmaceutical Intermediate	5-30% (synthesis system)
Hair Care Cosmetics (repair)	0.5-3.0% (formulation)
Skin Care Cosmetics (repair)	0.1-1.0% (formulation)

6. Packaging & Storage

6.1 Packaging Specifications (High-Purity Grade, Dust-Proof & Moisture-Proof)

- 100 g Amber glass bottle (laboratory/R&D/small-batch use, light protection + dust-proof cap)
- 500 g HDPE plastic jar (medium-batch production use, inner seal + screw cap)
- 1 kg HDPE plastic jar (regular production use, large mouth + dust-proof spoon)
- 25 kg HDPE plastic drum (bulk production use, inner plastic lining + dust-proof cap)
- 1000 L IBC tote (large-scale industrial use, HDPE inner tank + anti-leakage valve)
- Custom Packaging:** 50 g glass vials (pharmaceutical grade); 5 kg stainless steel drums (high-purity synthesis use) available upon request (all dust-proof & moisture-proof).

7. Safety & Protection

- The product is a Class 9 miscellaneous hazardous substance, causing mild skin/eye irritation and respiratory irritation; **all operations must be conducted by trained professional personnel** with full specified PPE (dust respirator, chemical-resistant safety goggles, nitrile rubber gloves ≥0.30mm, chemical-resistant lab coat/apron).
- Operate in a well-ventilated area with local exhaust ventilation; avoid generating dust during handling and mixing; do not touch eyes/mouth after handling and wash hands thoroughly with soap and water; avoid inhalation of high-concentration dust.
- In case of eye contact: Immediately rinse with plenty of running water for 15 minutes and consult a doctor if irritation persists. In case of skin contact: Rinse with water/soap for 5 minutes; apply hypoallergenic moisturizer; seek medical advice if redness or rash occurs.