

Technical Data Sheet (TDS)

Issue Date: 20 FEB 2026 Version: V1.0

1. Product Overview

- **Product Name:** Cysteamine Free 30% (Cysteamine Base 30% Aqueous Solution)
- **Chemical Name:** 2-Mercaptoethylamine; 2-Aminoethanethiol (Free Base)
- **CAS Number:** 60-23-1
- **Molecular Formula:** C₂H₇ NS (HSCH₂CH₂NH₂)
- **Molecular Weight:** 77.15 g/mol
- **Product Trait:** Colorless to pale yellow clear alkaline aqueous liquid (30% cysteamine base) with slight mercaptan odor; Class 8 corrosive substance, causes serious eye damage and skin irritation; non-flammable, stable under normal storage conditions; fully miscible with water and polar solvents; core active ingredient with whitening, anti-aging and chelating properties. **FOR INDUSTRIAL, COSMETIC (SKIN/HAIR CARE) AND FEED USE ONLY - NOT FOR HUMAN ORAL CONSUMPTION.**
- **Core Properties:** High assay (30.0±1.0%), stable alkaline pH (10.0-12.0); excellent chelating property for heavy metals; good reducing property; stable in sealed storage for 18 months; meets industrial, cosmetic and feed grade quality standards (compliant with EU/US/FDA/China regulations); low heavy metal content and microbial limit.
- **Main Application:** Cosmetic raw material (skin whitening, anti-aging, hair care); feed additive (animal growth promotion, liver protection); pharmaceutical intermediate (cystine/carnosine synthesis); organic synthesis raw material; metal chelating agent (heavy metal removal in wastewater); electroplating additive (metal surface brightener).

2. Technical Specifications (Industrial/Cosmetic/Feed Grade, Complies with GB/EU/FDA Standards)

Item	Specification (Industrial/Cosmetic/Feed Grade)
Appearance	Colorless to pale yellow clear transparent liquid, no turbidity
Assay (Cysteamine Base)	30.0±1.0%
pH Value (25°C)	10.0-12.0
Density (25°C)	0.98-1.02 g/cm ³
Viscosity (25°C)	8-15 mPa·s
Water Content	69.0-71.0%
Heavy Metals (Pb)	≤ 5 ppm
Heavy Metals (As)	≤ 1 ppm
Iron (Fe)	≤ 10 ppm
Total Bacterial Count	≤ 100 CFU/mL
E. coli	Negative
Decomposition Temperature	≥150°C
Oxidation Stability	Slight oxidation (≤5%) within shelf life (sealed)
Cosmetic Compatibility	Stable with non-oxidizing cosmetic raw materials (pH 8.0-11.0)
Feed Compatibility	Stable with common feed additives (excluding strong oxidants)

3. Product Advantages

1. **Controlled Purity & Stable Quality:** Assay 30.0±1.0% with low heavy metal and microbial content; batch-to-batch consistency (CV ≤0.5%) ensures stable performance in cosmetic/feed/industrial applications; meets EU/FDA cosmetic/feed grade requirements.
2. **Excellent Functional Properties:** Strong heavy metal chelating ability (binds Cu²⁺/Fe³⁺/Zn²⁺); good reducing property and biological activity; in cosmetic use, inhibits melanin production for skin whitening and anti-aging; in feed use, promotes animal growth and liver detoxification.
3. **Good Solubility & Compatibility:** Fully miscible with water, methanol/ethanol/propylene glycol and common cosmetic/feed raw materials; stable in cosmetic/feed formulations with pH 8.0-11.0; compatible with non-oxidizing humectants, thickeners, vitamins and feed minerals.

4. **Stable Storage Performance:** 18-month shelf life (unopened, $\leq 25^{\circ}\text{C}$); no significant decomposition or purity loss when sealed; slight oxidation in air (forms disulfide) with no effect on activity; resistant to light when stored in amber glass containers.

4. Application Fields & Dosage Guide

4.1 Main Application Fields

- **Cosmetic Industry (Skin/Hair Care):** Core raw material for skin whitening serums, anti-aging creams, spot-removal lotions and anti-dandruff shampoos; inhibits tyrosinase activity (melanin synthesis) and repairs skin barrier; chelates heavy metals in hair for anti-dandruff and hair brightening.
- **Feed Industry:** Additive for poultry (chicken/duck), livestock (pig/cattle) and aquatic (fish/shrimp) feed; promotes animal growth, improves feed conversion rate, protects liver function and reduces heavy metal toxicity in animal bodies.

4.2 Recommended Dosage (By Application Field, w/w in formulation/solution)

Application Field	Dosage	Remarks
Cosmetic - Skin Whitening/Anti-aging	1.0-5.0%	Main active ingredient, pH adjust to 8.0-10.0
Cosmetic - Anti-dandruff Hair Care	0.5-2.0%	Chelates heavy metals in hair, mix with non-oxidizing surfactants
Feed - Poultry/Livestock	0.01-0.1%	Dilute with water before adding to feed
Feed - Aquatic Animals (Fish/Shrimp)	0.02-0.15%	Avoid mixing with oxidizing feed additives
Pharmaceutical Synthesis	5.0-40.0%	Depending on reaction type, inert gas protection recommended
Industrial - Heavy Metal Chelation	10.0-30.0%	Wastewater treatment solution, adjust pH to 9.0-11.0
Industrial - Electroplating Brightener	0.05-0.5%	Nickel/copper plating bath, stainless steel equipment only

5. Usage & Formulation Guidelines

- **Cosmetic Formulation (Skin Whitening Serum):** Dilute the product with deionized water to the required concentration (1-5%); adjust the formulation pH to 8.0-10.0 with dilute citric acid/ammonia water; add humectants (glycerol/propylene glycol) and thickeners (xanthan gum) and stir evenly (200-300 rpm, 25°C); **avoid adding oxidizing ingredients (H_2O_2 , vitamin C ester)**. Mix in the aqueous phase only; no high-temperature heating ($\leq 40^{\circ}\text{C}$).
- **Feed Additive Preparation:** Dilute the product with deionized water at a ratio of 1:100; spray the dilute solution evenly on feed pellets under stirring (room temperature); dry the feed at $\leq 60^{\circ}\text{C}$ to avoid decomposition; **do not mix with oxidizing feed additives (e.g., potassium permanganate)**.
- **Industrial Heavy Metal Chelation:** Dilute the product with water to 10-30% concentration; add to wastewater under stirring (100 rpm, $25-40^{\circ}\text{C}$); adjust wastewater pH to 9.0-11.0 with NaOH; stir for 30-60 minutes, then add flocculant (PAC/PAM) for sedimentation and heavy metal removal.

6. Packaging & Storage

- 500 mL Amber glass bottle (cosmetic laboratory/R&D/small-batch use, anti-leakage screw cap + light protection)
- 5 L HDPE plastic drum (cosmetic/feed medium-batch use, inner seal + anti-leakage cap)
- 25 L HDPE plastic drum (industrial/cosmetic/feed bulk use, double anti-leakage cap + handle)
- 200 L HDPE plastic drum (large-scale industrial/feed use, metal frame + anti-leakage valve)
- **Custom Packaging:** 1 L amber glass bottles (cosmetic sample use); 10 L HDPE drums (small-scale industrial use); 1000 L IBC totes (bulk wastewater treatment use) available upon request (all chemical-resistant and anti-leakage, no aluminum/zinc components).

7. Safety & Protection

- The product is a **Class 8 corrosive substance**, causes **serious eye damage, skin irritation and respiratory irritation**; **all operations must be conducted by trained professional personnel** with full specified PPE (full face shield, chemical-resistant safety goggles, nitrile rubber gloves $\geq 0.40\text{mm}$, chemical-resistant apron/neoprene suit, half-face air-purifying respirator with organic vapor/ammonia cartridges).