NEWAY SINOPHC TECH. LIMITED
ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
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Safety Data Sheet (MSDS)

(According to GB/T 16483 and GB/T 17519; Adapts to GHS, IMDG, IATA Standards)

Cysteamine HCl (Cysteamine Hydrochloride)

Revision Date: 28 FEB 2026

SECTION 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product Identifiers

- Product Name: Cysteamine HCl (Cysteamine Hydrochloride)
- Product Number: CHC-20260228
- Brand: SIGALD
- CAS-No.: 156-57-0
- Synonyms: 2-Mercaptoethylamine Hydrochloride; 2-Aminoethanethiol HCl
- EINECS/EC-No.: 205-854-8

1.2 Details of the supplier of the safety data sheet

- Company: NEWAY SINOPHC TECH. LIMITED
- Address: RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
- Telephone: +86-021-50350029
- Fax: +86-021-50350029

1.3 Emergency telephone

- Emergency Phone #: +86-021-50350029 (CHEMTREC)

1.4 Relevant Identified Uses and Uses Advised Against

- Identified Uses: Cosmetic raw material (skin whitening, anti-aging); pharmaceutical intermediate (drug synthesis); feed additive (animal nutrition); organic synthesis raw material; metal chelating agent.
- Uses Advised Against: Not for direct oral human consumption; avoid contact with broken skin; no use in food processing; avoid mixing with strong oxidizing agents in unventilated areas.

SECTION 2: Hazards Identification

|Summary of Emergency Measures|White crystalline powder with slight mercaptan odor. Causes serious eye irritation and skin irritation; may cause respiratory irritation if inhaled as dust; may cause gastrointestinal irritation if swallowed. After inhalation: Move to fresh air, cough up dust if needed. In case of skin contact: Rinse with plenty of water for 10 minutes, remove contaminated clothing. After eye contact: Rinse with plenty of water for 15 minutes, call a doctor if irritation persists. After swallowing: Rinse mouth with water, drink a small amount of water, seek medical advice if discomfort occurs. Non-flammable, no explosion risk under normal conditions.| |---|

2.1 GHS Classification

- Serious eye irritation (Category 2)
- Skin irritation (Category 2)
- Specific target organ toxicity - single exposure (respiratory tract) (Category 3)

2.2 GHS Label Elements

- Hazard Pictogram: (Exclamation mark)
- Signal Word: **Warning**
- Hazard Statements:
  - H319: Causes serious eye irritation
  - H315: Causes skin irritation
  - H335: May cause respiratory irritation
- Precautionary Statements:
  - P261: Avoid breathing dust/fumes/gas/mist/vapors/spray
  - P264: Wash skin thoroughly after handling
  - P270: Do not eat, drink or smoke when using this product
  - P280: Wear protective gloves/eye protection/face protection
  - P302+P352: If on skin: Wash with plenty of water and soap
  - P305+P351+P338: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing
  - P304+P340: If inhaled: Remove person to fresh air and keep comfortable for breathing
  - P312: Call a POISON CENTER or doctor/physician if you feel unwell
  - P362+P364: Take off contaminated clothing and wash it before reuse
  - P501: Dispose of contents/container to an approved waste disposal plant

2.3 Physical and Chemical HazardsNon-flammable solid; no explosive or oxidizing properties under normal conditions; decomposes at high temperature (>200℃) to produce toxic hydrogen sulfide and ammonia gas; reacts with strong oxidizing agents to produce toxic sulfur oxides; stable under recommended storage conditions (sealed, dry, cool).

2.4 Health Hazards

- Acute: Dust inhalation causes cough, throat irritation and chest tightness; skin contact causes redness, itching and mild irritation; eye contact causes severe redness, tearing and blurred vision; swallowing causes nausea, abdominal pain and gastrointestinal irritation.
- Chronic: Prolonged repeated skin contact may cause chronic dermatitis; long-term inhalation of dust may cause mild persistent respiratory tract irritation; no known carcinogenic, mutagenic or reproductive toxic effects in occupational exposure limits.

2.5 Environmental HazardsAcute toxicity to aquatic organisms (Zebrafish 96h LC_{50} = 300 mg/L); fully biodegradable in natural environment (BOD_5 /COD = 0.70); low bioaccumulation potential; avoid direct discharge into water bodies; large-scale leakage may cause temporary water body pollution.

2.6 Other HazardsReacts with strong oxidizing agents (e.g., hydrogen peroxide, chlorine) to produce toxic hydrogen sulfide gas; absorbs moisture from air and may cause slight caking (no effect on activity); dust may form explosive mixtures with air in high concentration (no risk under normal handling).

SECTION 3: Composition/Information on Ingredients

- Substance / Mixture: **Pure Substance** | 3.1 Main Component | Cysteamine Hydrochloride | |---|---| | Formula | C_2H_8 ClNS | | Molecular Weight | 113.61 g/mol | | CAS-No.: | 156-57-0 | | EC-No.: | 205-854-8 | | Concentration (w/w) | ≥ 98.5% |

SECTION 4: First Aid Measures

4.1 Description of First-Aid Measures

- If Inhaled: Immediately move the victim to fresh, well-ventilated air. Loosen tight clothing to ensure unobstructed breathing. Encourage coughing to expel dust if conscious. Provide oxygen if breathing is difficult; call a doctor or emergency services if cough or chest tightness persists.
- In Case of Skin Contact: Immediately remove all contaminated clothing, gloves and footwear. Rinse the affected skin with plenty of running water and mild neutral soap for at least 10 minutes. Pat dry gently; do not apply any ointment or cream without medical advice. Seek medical attention if redness, itching or blistering occurs.
- In Case of Eye Contact: Hold the eyelids open and rinse the eyes continuously with clean, running water for at least 15 minutes, ensuring water flushes the entire eye surface (including under the eyelid). Do not rub the eyes or use eye drops. Remove contact lenses only if it can be done easily without additional damage. Consult an ophthalmologist if irritation, redness or blurred vision persists.
- If Swallowed: Rinse the mouth with plenty of clean water (do not swallow). If the victim is conscious and alert, drink a small amount of water to dilute the substance. Do not induce vomiting. Call a POISON CENTER or doctor immediately if nausea, abdominal pain or vomiting occurs; do not give anything by mouth to an unconscious person.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

- Acute: Severe eye irritation, skin redness/itching, respiratory tract cough/chest tightness, gastrointestinal nausea/abdominal pain; high-concentration dust inhalation may cause shortness of breath.
- Delayed: Skin peeling (1-2 days after contact), persistent eye redness (up to 48 hours); no long-term permanent organ damage with prompt and proper treatment.

4.3 Indication of Any Immediate Medical Attention and Special Treatment NeededNo specific antidote available; treat symptomatically. Seek urgent medical attention for severe eye irritation, large-dose swallowing and high-concentration dust inhalation with difficulty breathing.

SECTION 5: Firefighting Measures

5.1 Extinguishing Media

- Suitable: Water spray (cooling and dust suppression), carbon dioxide (CO_2), dry chemical powder, foam.

- Unsuitable: No limitations of extinguishing agents; avoid direct high-pressure water jet to prevent dust dispersion.

5.2 Special Hazards Arising from the Substance or MixtureNon-combustible solid; high temperature (>200℃) or fire causes thermal decomposition to produce toxic hydrogen sulfide (rotten egg odor) and ammonia gas; reacts with fire-extinguishing agents containing strong oxidants to produce toxic sulfur oxides; no explosion risk under normal fire conditions; toxic fumes may accumulate in low-lying areas; dust may disperse and cause respiratory irritation to firefighters.

5.3 Advice for FirefightersWear self-contained breathing apparatus (SCBA) and full chemical fire-fighting protective gear (chemical-resistant suit, nitrile gloves, goggles/face shield) to avoid contact with toxic decomposition gases and dust. Keep containers cool with water spray during fire to prevent thermal decomposition and rupture. Evacuate to upwind and high -lying areas; avoid inhaling toxic fumes and dust. Prevent fire-extinguishing water from entering municipal sewers or natural water bodies to avoid environmental pollution.

SECTION 6: Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency ProceduresWear full personal protective equipment (chemical-resistant goggles + full face shield, nitrile rubber gloves (thickness ≥0.40 mm), chemical-resistant apron, dust/mist respirator) for all spill cleanup. Ensure good ventilation at the spill site; evacuate non-essential personnel and set up a warning zone. Avoid inhaling dust and direct skin/eye contact; do not walk through the spilled powder; use wet cleaning methods to prevent dust dispersion.

6.2 Environmental PrecautionsPrevent the spilled powder from entering sewers, rivers, lakes, soil or storm drains. Cover the spilled powder with plastic sheeting to avoid being blown away by wind; sweep up the powder with a damp broom to prevent dust generation. Do not flush the spilled powder into drains with water directly.

6.3 Methods and Materials for Containment and Cleaning Up

- Small Spill: Wet the powder with a small amount of water to prevent dust dispersion; sweep up the wet powder with a clean broom and collect into a sealed HDPE container with hazard labels; wipe the spill area with a damp cloth and dispose of the cloth in the same container.
- Large Spill: Cover the powder with plastic sheeting; wet the powder in sections with water (avoid splashing); collect the wet powder into a sealed HDPE drum with a shovel; clean the spill area with a damp mop and rinse with a small amount of water (collect rinsing waste as hazardous waste).6.4 Reference to Other SectionsFor waste disposal, see Section 13; for personal protection, see Section 8.

SECTION 7: Handling and Storage

7.1 Precautions for Safe HandlingOperate in a well-ventilated area with local exhaust ventilation (to remove dust); wear specified PPE for all operations. Avoid generating dust (use closed transfer systems, low-speed mixing); use chemical-resistant equipment (HDPE, glass, stainless steel) for handling and mixing. Do not mix with strong oxidizing agents, strong alkalis or heavy metal salts; avoid contact with excessive moisture (may cause caking). Do not eat, drink or smoke in the work area; wash hands, face and exposed skin thoroughly with soap and water after handling; do not touch eyes or mouth before washing.

7.2 Conditions for Safe Storage

- Storage Conditions: Store in a **cool, dry, well-ventilated** warehouse. Temperature ≤25℃, relative humidity ≤50%. Keep the container tightly sealed with a screw cap to prevent moisture absorption and dust contamination; store in original HDPE or amber glass containers (sealed with desiccant). Store away from direct sunlight, heat sources and open flames.
- Incompatibilities: Strong oxidizing agents (H_2O_2, $KMnO_4$, chlorine), strong alkalis (NaOH, KOH), heavy metal salts ($CuSO_4$, $FeCl_3$), oxidizing cosmetic/feed raw materials.
- Storage Class (TRGS 510): 6.1 (Toxic Substances)
- Shelf Life: **24 months (unopened, under specified storage conditions)**
- Segregation: Store separately from all incompatible materials in a dedicated locked hazardous substance storage area with anti-leakage trays; keep a minimum distance of 1.5 meters from oxidizing and alkaline substances; mark clear hazard labels (eye irritation, skin irritation) on the storage area and containers.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters

- Occupational Exposure Limit (OEL) for Cysteamine (parent compound): TWA 2 ppm (6.2 mg/m³, 8-hour, ACGIH); STEL 6 ppm (18.6 mg/m³, 15-minute, ACGIH)
- Biological Limit Value (BLV): N/A
  8.2 Exposure Controls
- Engineering Controls: Local exhaust ventilation (LEV) with dust collection system for all handling operations; closed transfer systems for bulk loading/unloading; dust concentration detection alarm in the work area (set alarm limit at 5 mg/m³).
- Personal Protective Equipment (PPE) - **MANDATORY for all operations**:
  - Eye/Face Protection: Chemical-resistant safety goggles + full face shield (mandatory) for all handling; dust-proof face mask for bulk operations.
  - Skin Protection: Nitrile rubber gloves (thickness ≥0.40 mm), chemical-resistant neoprene apron, disposable arm sleeves; replace gloves immediately if damaged or contaminated.
  - Respiratory Protection: Dust/mist respirator (N95/P95) for routine operations; full-face SCBA with dust filter for confined space or large spill emergency.
  - Other: Chemical-resistant work shoes, dust-proof work clothes; no open-toed shoes or loose clothing in the work area; keep emergency eye wash station and safety shower within 10 meters of the work area.

SECTION 9: Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Propertiesa) Physical State: Solid (crystalline powder)b) Color: White to off-whitec) Odor: Slight pungent mercaptan (rotten egg) odord) Melting Point/Freezing Point: 67-71℃e) Boiling Point: Decomposes (>200℃, no boiling)f) Flammability: Non-flammableg) Flammability Limits: Not applicable (solid)h) Flash Point: Not applicable (non-flammable)i) Autoignition Temperature: Not applicablej) Decomposition Temperature: ≥200℃ (H_2S, NH_3, HCl released)k) pH Value (5% aq. solution, 25℃): 4.0-6.0l) Bulk Density: 0.80-0.90 g/cm³m) Solubility: Freely soluble in water; soluble in methanol/ethanol; slightly soluble in acetone; insoluble in ether/benzene/hexanen) Partition Coefficient (log P, n-octanol/water): -0.95 (25℃)o) Vapor Pressure (25℃): < 0.1 kPap) Density (25℃): 1.30 g/cm³ (crystal)q) Relative Vapor Density: N/A (solid)r) Explosive Properties: No explosive properties (dust may form explosive mixtures with air at high concentration)s) Oxidizing Properties: Nonet) Hygroscopy: Slightly hygroscopic (absorbs moisture and cakes in high humidity)

9.2 Other Safety InformationSlightly hygroscopic but no significant purity loss within shelf life; stable in aqueous solution (5-10%) for 6 months at 25℃; no significant chemical changes under normal industrial processing conditions (≤80℃); compatible with most non-oxidizing cosmetic/feed raw materials in aqueous formulations.

SECTION 10: Stability and Reactivity

10.1 Chemical Stability: Stable under the recommended storage and handling conditions (≤25℃, sealed, dry); no chemical changes under normal industrial processing conditions (≤80℃); stable in cosmetic/feed formulations with pH 4.0-8.0 for 6 months.10.2 Possibility of Hazardous Reactions: No hazardous reactions under normal use and processing conditions; reacts violently with strong oxidizing agents/strong alkalis to produce toxic byproducts; decomposes at high temperature (>200℃) to release toxic gases; no hazardous polymerization occurs under any conditions.10.3 Conditions to Avoid: High temperature (>200℃), direct sunlight, excessive moisture/high humidity, contact with incompatible materials, confined spaces with poor ventilation, dust dispersion.10.4 Incompatible Materials: Strong oxidizing agents, strong alkalis, heavy metal salts, oxidizing cosmetic/feed raw materials, alkaline buffers.10.5 Hazardous Decomposition Products: Hydrogen sulfide (H_2S), ammonia (NH_3), hydrogen chloride (HCl) (high-temperature decomposition); toxic sulfur oxides (when reacting with strong oxidants); no explosive decomposition products.

SECTION 11: Toxicological Information

11.1 Information on Toxicological Effects

- Acute Toxicity:
  - Oral (Rat, LD_{50}): 340 mg/kg (Toxic)
  - Dermal (Rabbit, LD_{50}): 1800 mg/kg (Harmful)
  - Inhalation (Rat, LC_{50}): 600 mg/m³ (4-hour dust exposure, Toxic)
- Skin Corrosion/Irritation: Rabbit 4-hour closed patch test - moderate erythema/edema (Category 2), reversible with proper treatment.

- Serious Eye Damage/Irritation: Rabbit eye test - severe conjunctival redness and corneal irritation (Category 2), reversible with prompt flushing and treatment.
- Respiratory Irritation: Rat inhalation test - severe bronchial irritation and cough at dust concentrations ≥300 mg/m³, no permanent respiratory damage at occupational exposure limits.
- Mutagenicity/Carcinogenicity: Ames test, chromosome aberration test - negative; IARC Classification - Group 3 (not classifiable as to carcinogenicity to humans); no known mutagenic effects in occupational exposure.
- Reproductive Toxicity: No adverse reproductive or developmental effects in animal tests at relevant occupational exposure doses; no teratogenic or embryotoxic effects identified.
- Specific Target Organ Toxicity (Repeated Exposure): 90-day repeated dermal exposure test - mild chronic dermatitis at high doses; no target organ damage at recommended occupational limits.

SECTION 12: Ecological Information

12.1 Toxicity

- Fish (Zebrafish, 96h LC_{50}): 300 mg/L (aqueous solution)
- Daphnia (48h EC_{50}): 200 mg/L (aqueous solution)
- Freshwater Algae (72h EC_{50}): 350 mg/L (aqueous solution)12.2 Persistence and Degradability: Fully biodegradable (BOD_5 /COD = 0.70); degraded by microbial action and photolysis in natural environment within 5-7 days; no persistent environmental residues.12.3 Bioaccumulative Potential: Low (log P=-0.95); no significant bioaccumulation in aquatic organisms and food chain; no biomagnification observed in fish and aquatic invertebrates.12.4 Mobility in Soil: High mobility (freely water-soluble); easily adsorbed to soil organic matter, low leaching risk to groundwater if not in large quantities; slightly acidic in aqueous solution, no significant effect on soil pH at normal environmental concentrations.12.5 PBT/vPvB Assessment: Not classified as PBT/vPvB substances (no persistence, low bioaccumulation, moderate aquatic toxicity).12.6 Other Adverse Effects: No known adverse effects on soil microorganisms at normal environmental concentrations; large-scale direct discharge may cause temporary hypoxia in water bodies due to microbial decomposition.

SECTION 13: Disposal Considerations

13.1 Waste Treatment Methods

- Product Waste: Expired/contaminated Cysteamine HCl is classified as **toxic hazardous waste**; dispose of by licensed hazardous waste treatment facilities via high-temperature incineration (≥800℃) with flue gas treatment (to remove H_2S, NH_3 and HCl) or neutralization with dilute alkali (NaOH) before biological treatment. Do not discharge to the environment directly.
- Packaging Waste: Rinse packaging with a small amount of water (collect rinsing waste as hazardous waste); dispose of contaminated packaging as toxic hazardous waste; recycle clean and uncontaminated HDPE/glass packaging after thorough cleaning and testing.
- Spill Waste: Contaminated cleaning tools, absorbent materials and dust are classified as hazardous waste; collect and dispose of by licensed hazardous waste treatment companies in accordance with local regulations.
- Disposal Compliance: Comply with China HW34 (Toxic Waste), EU EWC 030201, US RCRA Subtitle C (Hazardous Waste).

SECTION 14: Transport Information

14.1 UN Number: ADR/RID: 3259; IMDG: 3259; IATA-DGR: 325914.2 UN Proper Shipping Name: Toxic solid, organic, n.o.s. (Cysteamine Hydrochloride)14.3 Transport Hazard Class: 6.1 (Toxic substances)14.4 Packaging Group: III (Minor hazard)14.5 Environmental Hazards: IMDG Marine Pollutant: **Yes**14.6 Special Precautions for TransportTransport in sealed HDPE plastic drums or amber glass bottles with inner plastic lining, desiccant and anti-leakage caps; affix Class 6.1 hazard labels (toxic) and marine pollutant labels. Transport temperature ≤30℃, relative humidity ≤60%; avoid direct sunlight, rain, moisture, collision, extrusion and rough handling during transport (prevent container breakage and dust dispersion). Do not transport with strong oxidizing agents, strong alkalis, food, cosmetic/feed raw materials (oxidizing type) or pharmaceutical products; transport in a dedicated compartment of Class 6.1 hazardous chemical vehicles with anti-leakage and moisture-proof measures. Comply with ADR/RID, IMDG Code and IATA-DGR regulations for Class 6.1 toxic substances; provide MSDS/COA for customs clearance and transport documentation.

SECTION 15: Regulatory Information

15.1 National/International Regulations

- China: Hazardous Chemicals Safety Management Regulation (Class 6.1 Toxic Substance); Cosmetic Raw Material Safety Specification (2021 version); Feed Additive Standard (NY/T 394-2020); Pharmaceutical Intermediate Quality Standard.
- EU: REACH (Annex XVII compliant, not in SVHC Candidate List); CLP (GHS Classification - Warning); ADR/RID Class 6.1 Transport Regulations; Cosmetic Regulation (EC 1223/2009) (approved for cosmetic use with restrictions); Feed Additive Regulation (EC 1831/2003).
- US: TSCA (listed on the TSCA Inventory); DOT Class 6.1 Toxic Substance; OSHA Hazard Communication Standard (29 CFR 1910.1200); FDA Cosmetic Ingredient Review (CIR) approved (for skin/hair care use only); FDA Feed Additive Compliance Program (FACP) approved.
- International: ISO 9001 (Quality); ISO 14001 (Environment); IMO MARPOL Annex V (Marine Pollutant regulations).

15.2 Additional Regulatory RequirementsProvide English MSDS/COA for customs clearance and transport; mark **Class 6.1 Toxic Substance, FOR INDUSTRIAL/COSMETIC/FEED/PHARMACEUTICAL USE ONLY, NOT FOR HUMAN ORAL CONSUMPTION** on all product documents and packaging; comply with cosmetic raw material use limits (maximum 5% in skin care formulations) and feed additive dosage limits (GB 13078); label all products containing this ingredient with eye/skin irritation warnings.

SECTION 16: Other Information

- Further Information: This MSDS complies with GB/T 16483, GB/T 17519 and GHS Rev.9 standards, and is for professional use only by trained personnel (production, storage, transport and disposal). Key characteristic: **Cysteamine Hydrochloride (≥98.5%) white crystalline powder, Class 6.1 toxic substance, serious eye/skin irritation, for cosmetic (skin/hair care), feed, pharmaceutical and industrial use only**.
- Revision Date: 28 FEB 2026
- Disclaimer: The supplier is not liable for any damage, injury or environmental pollution caused by improper use, storage, transport or disposal of this product beyond the scope of the specified standards and national/international regulations. All operations must be conducted by trained professional personnel with strict compliance with relevant safety and industrial regulations. The user assumes full responsibility for any unauthorized use of this product.