Technical Data Sheet (TDS)

1. Product Overview

- Product Name: 二甲基二硫代氨基甲酸钠 - English Name: Sodium Dimethyldithiocarbamate - CAS Number: 128-04-1 - Formula: $C_3H_6NNaS_2$ - Molecular Weight: 143.21 g/mol - Product Characteristics: High-purity dithiocarbamate salt, white to pale yellow crystalline powder, slight ammonia-like odor, highly soluble in water; excellent heavy metal chelating performance, can quickly react with Cu, Pb, Cd, Hg and other heavy metal ions to form insoluble complexes; good bactericidal and algicidal effects for industrial circulating water; stable chemical properties under normal conditions, widely used as rubber vulcanization accelerator and pharmaceutical/pesticide intermediate; industrial-grade product meets national and international industrial standards, reliable performance.

2. Technical Specifications (Complies with GB/T 23943-2020)

Item	Specification
Appearance	White to pale yellow crystalline powder, slight
Purity (HPLC)	≥ 98.0%
Melting Point (℃)	240-245 (decomposition)
Moisture Content	≤ 1.0%
Ash Content	≤ 0.5%
Heavy Metals (Pb) Content	≤ 0.0005%
Chloride (Cl^-) Content	≤ 0.02%
pH (1% Aqueous Solution, 25℃)	9.0-11.0
Heavy Metal Chelation Rate	≥ 99.0%

3. Product Advantages

1. Efficient Heavy Metal Chelation: Strong chelating ability with Cu, Pb, Cd, Hg, Ni and other heavy metal ions; chelation rate ≥99% for Cu^{2+} within 30 minutes at 25℃; forms insoluble, stable complexes that are easy to separate and remove, reducing heavy metal content in water to meet national discharge standards (≤0.5 mg/L). 2. Excellent Bactericidal & Algicidal Performance: Effective against bacteria (E. coli, Pseudomonas aeruginosa) and algae (blue-green algae, green algae) in industrial circulating water; bactericidal rate ≥99% at recommended dosage; prevents biofouling and microbial corrosion of pipelines and equipment. 3. High Purity & Stable Quality: Purity ≥98.0%, low impurity content (heavy metals ≤0.0005%, chloride ≤0.02%); no harmful substances to water systems and equipment; stable performance batch-to-batch, meets strict industrial quality requirements; stable chemical properties under normal storage and processing conditions. 4. Wide Application Range: Effective at 10-80℃ and pH 7.0-11.0; suitable for various water quality (industrial wastewater, circulating water, mining wastewater); compatible with other water treatment agents (flocculants, corrosion inhibitors) without mutual interference; also applicable to rubber processing and mineral flotation scenarios. 5. Easy to Use: Solid crystalline powder, convenient for storage and transportation; highly soluble in water, can be prepared into aqueous solution for dosing; simple operation, reducing labor and transportation costs; adjustable dosage according to actual application needs. 6. Cost-Effective: High chelating and bactericidal efficiency, low recommended dosage (water treatment: 5-50 mg/L); lower production cost than similar imported products; reduces enterprise operation costs while ensuring treatment effect.

4. Application Fields

- Water Treatment Industry: Heavy metal chelating agent for industrial wastewater (electroplating wastewater, printing and dyeing wastewater, mining wastewater) to remove heavy metal ions; bactericide and algicide for circulating water systems (power plants,

chemical plants, steel plants) to prevent biofouling and microbial corrosion; heavy metal remover for drinking water pretreatment (meets national drinking water standards). - Rubber Industry: Vulcanization accelerator for natural rubber and synthetic rubber (styrene-butadiene rubber, nitrile rubber); accelerates vulcanization rate, improves rubber hardness, tensile strength and wear resistance; antioxidant for rubber products, extending service life by 30-50%. - Pharmaceutical & Pesticide Industry: Intermediate for synthesis of pharmaceuticals (antibacterial drugs, antiviral drugs) and pesticides (insecticides, fungicides, herbicides); raw material for synthesis of dithiocarbamate derivatives (disinfectants, preservatives).

5. Usage Methods

- Dosage (Recommended): - Heavy Metal Chelation (Wastewater Treatment): 5-50 mg/L (based on heavy metal content; adjust dosage according to actual water quality test results); - Circulating Water Bactericide/Algicide: 2-10 mg/L (add once every 3-7 days, intermittent dosing); - Rubber Vulcanization Accelerator: 0.5-2.0 phr (parts per hundred rubber, based on rubber weight); - Mineral Flotation: 100-500 g/ton ore (adjust according to ore type and grade). - Usage: 1. For water treatment: Dissolve the product in water (10-20% aqueous solution) at room temperature, stir evenly, then add to water system continuously or intermittently; 2. For rubber processing: Mix with rubber and other additives (fillers, plasticizers) evenly, then vulcanize at 140-180℃; 3. For mineral flotation: Prepare 5-10% aqueous solution, add to flotation cell during the flotation process, stir evenly. - Optimal Conditions: Use at temperature 10-80℃ and pH 7.0-11.0; higher temperature accelerates chelation and bactericidal reactions; avoid using in strong acidic environment (pH <5.0) to prevent decomposition and release of toxic dimethylamine gas.

6. Packaging & Storage

- Packaging Specifications: 25 kg kraft paper bags with PE inner liner (sealed, dust-proof, moisture-proof); 200 L steel drums with PE inner liner (corrosion-resistant, sealed); custom packaging available upon request. - Storage Conditions: Store in a cool, dry, well-ventilated warehouse (temperature 5-30℃, relative humidity ≤70%); keep container tightly closed and upright; avoid direct sunlight, heat sources (e.g., heaters, stoves) and moisture; store separately from strong oxidants, strong acids, nitrites and food-grade materials; stack bags/drums stably (no more than 3 layers for bags, no more than 2 layers for drums) to prevent tipping and leakage; install dust collection equipment and fire-fighting facilities. - Shelf Life: 24 months (unopened, specified conditions); use promptly after opening, seal tightly after each use; do not use if discoloration (dark yellow/brown), caking, moisture absorption or strong ammonia odor occurs.

7. Safety & Protection

- The product is a white to pale yellow crystalline powder, causes skin irritation and severe eye irritation; inhalation of dust or vapor may cause respiratory tract discomfort; oral ingestion may cause gastrointestinal discomfort and liver/kidney damage; very toxic to aquatic organisms. - Operators must wear full personal protective equipment: dust mask (N95 or above) or respirator, chemical safety goggles, face shield, nitrile gloves (thickness ≥0.8 mm) and dust-proof protective clothing/boots.

8. Quality Assurance

- Manufactured in accordance with ISO 9001 quality management system standards; strictly controls raw materials (dimethylamine, carbon disulfide, sodium hydroxide), production processes (synthesis, crystallization, purification, drying) and finished product testing; complies with national standards (GB/T 23943-2020) and industrial technical requirements. - Each batch of product is strictly tested with a Certificate of Analysis (COA), covering purity, appearance, melting point, moisture, ash content, heavy metals, pH value and heavy metal chelation rate; ensures product quality is stable and meets customer requirements. - Provide professional technical support: customize usage schemes based on application scenarios (water treatment, rubber processing, mineral flotation); provide on-site guidance for dosing, operation and safety protection; solve user application problems in a timely manner; provide after-sales service and technical consultation (24-hour technical hotline).