



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)

Mercaptobenzothiazole (MBT)

SECTION 1: Identification

1.1 Product Identifiers - Product Name: Mercaptobenzothiazole - Product Number: MBT-CAS149304-202802 - Brand: SIGALD - CAS-No.: 149-30-4 - Synonyms: MBT; 2-Mercapto-1,3-benzothiazole; 2-Benzothiazolethiol - Chemical Family: Benzothiazole Derivative

1.2 Details of the supplier of the safety data sheet

- Company : NEWAY SINOPHC TECH. LIMITED
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- Telephone : +86-021-50350029
- Fax : +86-021-50350029

1.3 Emergency telephone

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

1.4 Uses & Restrictions - Identified Uses: Rubber vulcanization accelerator; metal corrosion inhibitor (cooling water systems, metal plating); lubricating oil additive; pesticide intermediate; dye and pigment intermediate; analytical reagent. - Uses Advised Against: Direct food contact; medical application; use in strong oxidizing environments beyond product limits; mixing with strong acids/bases without proper protection.

SECTION 2: Hazards Identification

2.1 GHS Classification: Skin irritation (Category 2); Eye irritation (Category 2A); Skin sensitization (Category 1); Respiratory tract irritation (Category 3); Aquatic hazard (Category 1)

2.2 GHS Label Elements - Hazard Pictogram: (Irritant) + (Aquatic hazard) + (Skin sensitizer) - Signal Word: WARNING - Hazard Statements: H315 (Causes skin irritation); H317 (May cause an allergic skin reaction); H319 (Causes serious eye irritation); H335 (May cause respiratory irritation); H410 (Very toxic to aquatic life with long-lasting effects) - Precautionary Statements: P261, P264, P270, P271, P273, P280, P302+P352, P304+P340+P310, P305+P351+P338+P310, P310, P333+P313, P337+P313, P391, P501

2.3 Physical/Chemical Hazards: Combustible solid (flash point 240°C); incompatible with strong oxidants (e.g., hydrogen peroxide, potassium permanganate), strong acids (e.g., hydrochloric acid) and strong bases (e.g., sodium hydroxide); decomposes at temperatures >300°C to release toxic fumes (sulfur oxides, nitrogen oxides, benzene derivatives).

2.4 Health Hazards: Skin irritation (redness, itching, dryness) and sensitization (allergic dermatitis, rash); severe eye irritation (redness, tearing, corneal damage); inhalation of dust may cause respiratory tract irritation (coughing, sore throat, shortness of breath); ingestion may cause gastrointestinal upset (nausea, vomiting, abdominal pain); long-term exposure may cause liver and kidney damage.

2.5 Environmental Hazards: Very toxic to aquatic organisms (fish, daphnia, algae); persistent in water bodies; high bioaccumulation in aquatic organisms (BCF >500); long-lasting toxic effects on aquatic ecosystems; may contaminate soil and groundwater.

SECTION 3: Composition/Information on Ingredients



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Substance/Mixture: Substance (main component $\geq 99.0\%$)

Component	Content (w/w)	CAS-No.	Hazard Classification
Mercaptobenzothiazole	$\geq 99.0\%$	149-30-4	Skin Irrit. 2; Skin Sens. 1; Eye Irrit. 2A; Resp. Irrit. 3; Aquatic Toxicity 1
Moisture	$\leq 0.5\%$	7732-18-5	Non-hazardous
Ash (Inorganic Impurities)	$\leq 0.3\%$	-	Non-hazardous

SECTION 4: First Aid Measures

- Inhaled: Remove to fresh air immediately; keep the affected person at rest in a comfortable position; if breathing is difficult, provide oxygen by a qualified person; seek medical attention immediately if irritation persists or allergic reactions occur. - Skin Contact: Remove contaminated clothing and shoes immediately; rinse skin thoroughly with plenty of running water for at least 15 minutes (pay attention to skin folds); avoid using organic solvents; apply anti-irritant cream if needed; seek medical help if redness, itching, rash, or blistering occurs (allergic reaction risk). - Eye Contact: Hold eyelids open; rinse eyes continuously with clean water or normal saline for at least 20 minutes (flush from inner to outer corner); do not rub eyes; seek emergency medical help immediately (corneal damage risk). - Swallowed: Do not induce vomiting (risk of aspiration); rinse mouth with water (do not swallow); give small amounts of water to dilute (only if the person is conscious and able to swallow); seek emergency medical attention with this MSDS.

SECTION 5: Firefighting Measures

- Suitable Extinguishing Media: Water spray, foam, CO₂, dry powder, sand. - Unsuitable Media: High-pressure water jet (may disperse solid and spread fire; may cause dust explosion in confined spaces). - Special Hazards: Combustible solid (flash point 240°C); decomposes at high temperature (>300°C) to release toxic fumes (sulfur oxides, nitrogen oxides, benzene derivatives); dust cloud may be explosive in confined spaces with high concentration. - Firefighter Advice: Wear full firefighting protective equipment (including self-contained breathing apparatus, fire-resistant suit, and face shield); keep a safe distance; cool containers with water spray; avoid inhalation of decomposition fumes; use dust suppression measures; do not enter confined spaces without proper ventilation.

SECTION 6: Accidental Release Measures

- Personal Precautions: Wear dust mask (N95 or equivalent), chemical-resistant gloves (nitrile or rubber), safety goggles, and dust-proof protective clothing; avoid direct contact with spilled powder and dust; use respiratory protection in confined spaces or high-dust concentrations. - Environmental Precautions: Prevent powder from entering sewers, rivers, lakes, or other water bodies; use absorbent materials to block leakage (e.g., sand, vermiculite); notify local environmental authorities if contamination occurs; isolate the spilled area to avoid spread to aquatic ecosystems. - Cleanup: Small spill - collect powder with a clean shovel or vacuum cleaner (equipped with dust filter), place in a sealed container for disposal; large spill - dike



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the area with sand or soil, collect all powder into sealed corrosion-resistant drums, and treat by professional hazardous waste disposal institutions; clean the area with water (avoid washing into water bodies) and neutralize if necessary.

SECTION 7: Handling and Storage

- Handling: Operate in well-ventilated area; use dust-collecting equipment to suppress dust generation; avoid creating dust clouds; wear full personal protective equipment (especially skin and respiratory protection); do not mix with strong oxidants, strong acids, and strong bases; avoid splashing and spillage; wash hands and face thoroughly after handling. - Storage: Store in cool, dry, well-ventilated warehouse (5-35°C); keep container tightly closed to prevent moisture absorption, dust contamination, and caking; avoid direct sunlight and high temperature (>50°C); store separately from strong oxidants, strong acids, strong bases, food-grade materials, and combustible materials; stack containers stably (no more than 3 layers) to prevent tipping; label clearly with hazard warnings (skin sensitizer, aquatic toxin). - Shelf Life: 24 months (unopened, specified conditions); use promptly after opening, seal tightly after each use; do not use if caking, discoloration (turning dark brown), or moisture absorption occurs. - Compatibility: Incompatible with strong oxidants (H₂O₂, KMnO₄), strong acids (HCl, H₂SO₄), strong bases (NaOH, KOH), and heavy metal salts (Pb(NO₃)₂, CuSO₄).

SECTION 8: Exposure Controls/Personal Protection

- Engineering Controls: Install local exhaust ventilation to remove dust and vapors; maintain good general ventilation in the workplace; use dust-collecting equipment (bag filters) during handling; install emergency eyewash stations and safety showers nearby the workplace. - PPE: Respiratory protection: Use dust mask (N95/P100) when dust is generated or in confined spaces; Hand protection: Chemical-resistant gloves (nitrile or rubber, thickness ≥ 0.4 mm); Eye/Face protection: Safety goggles and face shield (dust-proof); Body protection: Dust-proof protective clothing and cap (anti-sensitization material). - Hygiene Measures: Do not eat, drink, or smoke in the workplace; do not touch eyes, face, or mouth with contaminated hands; remove contaminated clothing and shoes immediately after contact; wash contaminated clothing separately before reuse; provide washing facilities (soap, water) near the workplace; avoid skin contact for sensitive individuals.

SECTION 9: Physical and Chemical Properties

Physical State: Solid (crystalline powder); Color: Pale yellow to light brown; Odor: Slight characteristic odor (faint sulfur smell) pH (25°C, 1% Aqueous Suspension): 5.0-7.0; Melting Point: 163-167°C; Boiling Point: Decomposes at >300°C Flash Point: 240°C (closed cup); Autoignition Temperature: 420°C Density (25°C, solid): 1.42 g/cm³; Solubility: Slightly soluble in water (0.01 g/100 mL at 25°C), easily soluble in ethanol (≥10 g/100 mL), acetone, benzene, and chloroform Vapor Pressure (25°C): <0.001 hPa; Partition Coefficient (log P): 2.8 (estimated); Viscosity: Not applicable (solid)

SECTION 10: Stability and Reactivity

- Stability: Stable under normal storage and handling conditions; maintains vulcanization acceleration and corrosion inhibition performance within the shelf life; stable in neutral and slightly acidic/alkaline environments; gradual decomposition in strong oxidizing environments and at temperatures >300°C. - Incompatibilities: Strong oxidants which may oxidize mercapto group (-SH) to disulfide; strong acids which may release hydrogen sulfide gas; strong bases which may cause hydrolysis; heavy metal salts which may form insoluble complexes. -



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Hazardous Decomposition Products: At temperatures >300°C, decomposes to release sulfur dioxide (SO₂), nitrogen oxides (NO_x), benzene, and benzothiazole derivatives (toxic).

SECTION 11: Toxicological Information

- Acute Toxicity: Oral (Rat, LD₅₀): 100-200 mg/kg; Dermal (Rabbit, LD₅₀): >2000 mg/kg; Inhalation (Rat, LC₅₀): >5 mg/m³ (4-hour exposure, dust). - Skin/Eye Irritation: Moderate skin irritation (Category 2); severe eye irritation (Category 2A) with potential corneal damage; skin sensitization (Category 1) - may cause allergic dermatitis in sensitive individuals. - Respiratory Toxicity: Inhalation of dust causes respiratory tract irritation (Category 3); may lead to coughing, sore throat, and bronchitis in severe cases. - Other Toxicity: No mutagenic or carcinogenic effects reported (per OECD test guidelines); long-term oral exposure may cause liver and kidney damage in animals; no teratogenic effects reported.

SECTION 12: Ecological Information

- Fish (Zebrafish, LC₅₀): 0.5 mg/L (96-hour exposure) - Daphnia (EC₅₀): 0.1 mg/L (48-hour exposure) - Algae (Growth Inhibition, EC₅₀): 0.2 mg/L (72-hour exposure) - Biodegradability: Poorly biodegradable (BOD₅/COD < 0.1); persistent in water bodies for 60-90 days. - Environmental Fate: Resistant to hydrolysis and photodegradation; in natural water bodies, exists in suspended and dissolved states; high bioaccumulation in aquatic organisms (BCF: 500-1000 in fish); may contaminate soil and groundwater through leaching.

SECTION 13: Disposal Considerations

- Product Waste: Collect waste product in a sealed container; do not mix with other wastes; dispose of via licensed hazardous waste treatment facilities in accordance with local regulations (incineration or landfill after stabilization); do not discharge into water bodies or sewers. - Packaging Waste: Rinse packaging containers thoroughly with ethanol (collect rinse water for treatment); neutralize the rinse water if necessary; dispose of the container as hazardous waste if contaminated, or as general solid waste if no residual product remains; recycle packaging materials only if permitted and after thorough cleaning. - Special Disposal Notes: Incineration must be conducted in professional facilities equipped with sulfur oxides and nitrogen oxides removal systems; do not landfill without prior stabilization (risk of soil and groundwater contamination); comply with local environmental protection regulations for hazardous waste disposal.

SECTION 14: Transport Information

- UN Number: ADR/RID: UN 3077; IMDG: UN 3077; IATA-DGR: UN 3077 - UN Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s. (Mercaptobenzothiazole) - Transport Class: 9 (Miscellaneous Dangerous Substances); Packaging Group: III; Environmental Hazards: Yes (Marine Pollutant) - Special Precautions: Transport in sealed, dust-proof packaging (paper-plastic composite bags with PE liner or iron drums); avoid collision, vibration, and impact to prevent packaging damage and powder leakage; keep away from strong oxidants, strong acids, strong bases, and food-grade goods during transport; store in a cool, ventilated area during transit; do not expose to sunlight or high temperature; transport by qualified hazardous chemical transport vehicles; drivers and handlers must be trained and familiar with hazard characteristics and emergency handling methods.

SECTION 15: Regulatory Information



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- National Regulations (China): Complies with Hazardous Chemical Safety Management Regulation; meets GB/T 11407-2013 (Mercaptobenzothiazole) and GB 5085.1-2007 (Hazardous Waste Identification Standards); compliant with rubber additive and metal corrosion inhibitor use standards. - International Regulations: GHS Rev.9 (Skin Irrit. 2, Skin Sens. 1, Eye Irrit. 2A, Resp. Irrit. 3, Aquatic Toxicity 1); REACH (EU, registered); TSCA (US, listed); FDA (US, compliant for industrial use only).

SECTION 16: Other Information

- Revision Date: 20 FEB 2025 - Disclaimer: Based on current scientific knowledge and product testing data; supplier not liable for damage caused by improper use, storage, handling, or non-compliance with regulations; the information in this MSDS is accurate to the best of our knowledge at the time of revision.

