



NEWAY SINOPHC TECH. LIMITED

ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
Email:marketing01@newayphc.com; Phone:+86-021-50350029 <https://www.newayphc.com>

Safety Data Sheet (MSDS)

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

SECTION 1: Identification

1.1 Product Identifiers

- Product Name: Barium Carbonate
- Product Number: BC-20260216
- Brand: SIGALD
- CAS-No.: 513-77-9

Synonyms: Barium carbonate precipitated; Carbonic acid barium salt

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:** Ceramic glaze raw material, glass clarifier, electronic ceramic component, barium salt synthesis, pigment filler
- **Uses Advised Against:** Oral ingestion; use in food/cosmetic products without special treatment; mixing with strong acids in unventilated areas; use as a feed additive

SECTION 2: Hazards Identification

2.1 GHS Classification: Acute toxicity (oral, Category 3); Skin irritation (Category 2); Serious eye irritation (Category 2A); Acute aquatic toxicity (Category 1)

- Hazard Pictogram: GHS06 (Toxic), GHS07 (Exclamation mark), GHS09 (Environment)
- Signal Word: **Danger**
- Hazard Statements: H301 (Toxic if swallowed), H315 (Causes skin irritation), H319 (Causes serious eye irritation), H400 (Very toxic to aquatic life)
- Precautionary Statements: P264, P270, P280, P301+P310, P302+P352, P305+P351+P338, P332+P313, P337+P313, P273, P391
- 2.3 Physical/Chemical Hazards: Non-combustible; non-explosive; reacts with strong acids (HCl, H₂SO₄) to release large amounts of CO₂ gas and soluble toxic barium salts; decomposes at >982°C to barium oxide and CO₂ gas; no other hazardous physical/chemical properties
- 2.4 Health Hazards: Toxic if swallowed (barium ion poisoning causes muscle weakness, gastrointestinal disturbance, cardiovascular damage); mild skin irritation with prolonged contact; serious eye irritation; dust inhalation causes respiratory tract irritation/cough
- 2.5 Environmental Hazards: Very toxic to aquatic life; barium



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ions accumulate in aquatic organisms; low mobility in soil (binds to organic matter); no biodegradation potential

SECTION 3: Composition/Information on Ingredients

- **Substance/Mixture:** Pure Substance
- **Main Component:** Barium Carbonate (99.2%, CAS:513-77-9)
- **Formula:** BaCO₃
- **Molecular Weight:** 197.34 g/mol
- **Hazardous Ingredients:** Barium Carbonate (toxic oral, aquatic toxic)

SECTION 4: First Aid Measures

- **Inhaled:** Move to fresh air immediately; keep respiratory tract open. If coughing or shortness of breath occurs, give oxygen and consult a physician immediately.
- **Skin Contact:** Rinse skin with plenty of running water for 10 minutes; remove contaminated clothing and wash with soap before reuse. Consult a physician if irritation/redness persists.
- **Eye Contact:** Hold eyelids open and rinse thoroughly with running water for 15-20 minutes; remove contact lenses if worn. Consult an ophthalmologist **immediately** even if no irritation is felt.
- **Swallowed:** Rinse mouth with water; **do not induce vomiting**. Call a poison control center or physician **immediately**; provide product information to the physician (barium carbonate toxicity).

SECTION 5: Firefighting Measures

- **Suitable Extinguishing Media:** Water spray, foam, CO₂, dry powder
- **Special Hazards:** Non-combustible; no hazardous combustion products; decomposes at >982°C to barium oxide and CO₂ gas; reacts with acid fire extinguishers to release toxic barium salts and CO₂ gas
- **Firefighter Protection:** Wear standard fire-fighting gear + N95 dust mask; avoid contact with fire -extinguishing acid agents; cool containers with water spray to prevent thermal decomposition

SECTION 6: Accidental Release Measures

- **Personal Precautions:** Wear chemical splash goggles, nitrile gloves, N95 dust mask and lab coat for all spills; ensure good ventilation; avoid dust inhalation, skin/eye contact and oral ingestion.
- **Containment & Cleanup:** Sweep up powder with inert material (sand/vermiculite) and transfer to **sealed labeled HDPE containers** for hazardous waste disposal; wipe small spills with damp cloth (avoid dust); **do not flush to sewer or waterways**.
- **Environmental Precautions:** Contain all spills to prevent entry into waterways/soil; use booms for aquatic spills; dispose of contaminated cleanup materials as hazardous waste (aquatic toxic).

SECTION 7: Handling and Storage

- **Handling:** Operate in well-ventilated area with local exhaust ventilation; use plastic/glass equipment (no metal contact with acid); wear full PPE for all handling; avoid dust generation; no eating/drinking/smoking in work area.
- **Storage Conditions:** Cool, dry, well-ventilated warehouse ($\leq 25^{\circ}\text{C}$); store in sealed HDPE drums/coated woven bags; avoid direct sunlight and high humidity; keep away from strong acids, food, feed and cosmetics; store in a dedicated hazardous chemical area.
- **Incompatibilities:** Strong mineral acids (HCl, H_2SO_4 , HNO_3), acidic salts, water with high acid content
- **Shelf Life:** 36 months (unopened, under specified storage conditions); 12 months after opening (seal tightly)

SECTION 8: Exposure Controls/Personal Protection

- **Occupational Exposure Limits:** OSHA TWA (Ba): 0.5 mg/m^3 (inhalable dust); ACGIH TWA (Ba): 0.5 mg/m^3
- **Engineering Controls:** Local exhaust ventilation (≥ 15 air changes/hour); dust collection system for bulk processing; closed transfer system for powder handling
- **PPE:**
 - Eye/Face: Chemical splash goggles + face shield (mandatory for all handling)
 - Skin: Chemical-resistant nitrile gloves + full protective suit + safety shoes
 - Respiratory: N95 dust mask (routine handling); powered air-purifying respirator (PAPR) for bulk processing/spills
 - Other: Dust-proof cap + chemical resistant apron

SECTION 9: Physical and Chemical Properties

- Physical State: White crystalline powder (25°C)
- Odor: Odorless
- Solubility: Insoluble in water (0.002 g/100mL , 20°C); soluble in dilute acids (reacts); insoluble in ethanol/ether
- pH (25°C): Neutral (6.5-7.5, water suspension)
- Density: 4.43 g/cm^3 (25°C)
- Melting Point: 811°C
- Decomposition Temperature: 982°C (decomposes to BaO and CO_2)
- Boiling Point: N/A (decomposition)
- Flammability: Non-combustible
- Hygroscopy: Non-hygroscopic
- Bulk Density: $1.5\text{-}2.0 \text{ g/cm}^3$
- Particle Size (D50): 2-5 μm (industrial grade)
- Viscosity: N/A (solid)

SECTION 10: Stability and Reactivity



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- **Stability:** Chemically stable under normal storage and use conditions ($\leq 25^{\circ}\text{C}$, sealed); non-hygroscopic with no degradation
- **Hazardous Reactions:** Reacts vigorously with strong acids to release toxic soluble barium salts and CO_2 gas; no other hazardous reactions under normal use
- **Decomposition Products:** Barium oxide (BaO), carbon dioxide (CO_2) (at $>982^{\circ}\text{C}$)
- **Conditions to Avoid:** High temperature ($>982^{\circ}\text{C}$), contact with strong acids, dust generation, oral ingestion

SECTION 11: Toxicological Information

- Oral LD_{50} (Rat): 418 mg/kg (Category 3, acute oral toxicity)
- Dermal LD_{50} (Rabbit): >5000 mg/kg (mild skin irritation only)
- Inhalation LC_{50} (Rat): 10 mg/m³/4h (dust, respiratory irritation)
- Skin Irritation: Category 2 (mild reversible irritation; Rabbit, 4h exposure)
- Eye Irritation: Category 2A (serious reversible irritation; Rabbit, 24h exposure)
- Acute Toxicity (Human): Oral ingestion of >500 mg causes barium poisoning (muscle weakness, vomiting, cardiac arrhythmia)
- Carcinogenicity: IARC Group 3 (Unclassifiable); no mutagenic/reproductive toxic effects

SECTION 12: Ecological Information

- Aquatic Toxicity (Zebrafish LC_{50}): 2.5 mg/L/96h (Category 1, very toxic)
- Aquatic Toxicity (Daphnia EC_{50}): 1.8 mg/L/48h (very toxic)
- Persistence: Non-biodegradable (inorganic salt)
- Bioaccumulative Potential: High (log K_{oc}: 3.2; barium ions accumulate in aquatic organisms/soil)
- Environmental Fate: Insoluble in water; low mobility in soil (binds to organic matter/clay); barium ions release in acidic water/soil and cause aquatic toxicity

SECTION 13: Disposal Considerations

- **Product Waste:** Dispose only via **licensed hazardous waste treatment facilities**; incineration or solid waste landfilling (in dedicated hazardous waste sites); **do not discharge to water/soil.**
- **Packaging Waste:** Rinse thoroughly with water (contaminated rinse water to hazardous waste); dispose of packaging as hazardous waste if contaminated; recycle only if fully decontaminated.
- **Contaminated Material:** All absorbents/cleanup materials are hazardous (aquatic toxic); seal and dispose via licensed hazardous waste facilities.

SECTION 14: Transport Information

- UN Number: 1564
- Transport Class: 6.1 (Toxic substance)
- Packaging Group: II
- Marine Pollutant: Yes (H400, very toxic to aquatic life)



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- **Precautions:** Transport in sealed, labeled HDPE drums/coated woven bags; use dedicated hazardous chemical transport vehicles; avoid direct sunlight/high temperature; separate from strong acids, food, feed and cosmetics; comply with IMDG/IATA/ADR transport regulations.

SECTION 15: Regulatory Information

- Complies with GHS, REACH, TSCA, GB 13690-2009 (China, Category 6.1 Toxic)
- EU SVHC: Not listed; classified as toxic oral/aquatic toxic under EU CLP
- Labeling: Mandatory GHS06/GHS07/GHS09 pictograms; **Danger** signal word and full hazard statements; clear "Toxic if swallowed" and "Very toxic to aquatic life" labels.

SECTION 16: Other Information

- **Revision Date:** 16 FEB 2026
- **Notes:** Mandatory PPE for all handling; regular medical check-up for long-term operators (barium ion accumulation); avoid all contact with strong acids; store in a dedicated hazardous chemical warehouse; dispose of all waste as hazardous waste; no environmental release.



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