Safety Data Sheet: Barium Nitrate

1. Identification

Product	Barium Nitrate; CAS 10022-31-8; EC 233-020-5
Use	Professional ingredient and formulation development.
Company	Hainan Zhongxin Chemical Co., Ltd. (ZXCHEM)
Address	Room 1001, Building A, Caohejing Center, No. 1520 Gumei Road, Xuhui District, Shanghai, China
Telephone / email	+86-21-54265599 / sales@zxchem.com.cn
Emergency contact	ZXCHEM office number above, office hours, China time (UTC+8). For urgent medical assistance contact local emergency services.
Scope	Reference safety information for Barium Nitrate. The reference composition, concentration and supply-grade differences are described in Section 3. This document does not certify the composition or transport status of a specific delivered batch or a different formulation.

2. Hazards Identification

Classification	Oxidizing solid Category 2; acute oral toxicity Category 3; acute inhalation toxicity Category 4; eye irritation Category 2.
Signal word / symbols	Danger; GHS03, GHS06
Hazard statements	H272: may intensify fire; oxidizer. H301: toxic if swallowed. H319: causes serious eye irritation. H332: harmful if inhaled.
Prevention	Use adequate ventilation; avoid inhaling dust. Prevent skin and eye contact. Wear suitable chemical-resistant gloves and eye protection. Wash after handling; keep food and drink out of the work area.
Response	After exposure, stop work and seek medical advice. For severe exposure obtain urgent medical care. Rinse contaminated skin or eyes with water; move an inhalation casualty to fresh air.
Environment	Prevent uncontrolled release to drains, soil or surface water. Collect spills for appropriate disposal.



3. Composition / Information on Ingredients

Reference ingredient	Barium nitrate, CAS 10022-31-8, EC 233-020-5. The selected solid reference lists >95%; commercial supply purity ≥99.5%. No unverified impurity proportion is assigned.
Supply grade	Purity ≥99.5%
Applicability	The cited concentration or purity describes the reference material. It is not a certificate of analysis for the delivered batch; different solvents or dilutions require the matching supplier safety document.

4. First-Aid Measures

General	Protect the rescuer from exposure and show the product information to medical personnel. Obtain medical advice if symptoms occur or exposure is significant. Obtain prompt medical attention; urgent assessment is required after ingestion or breathing difficulty.
Inhalation	Move to fresh air and keep the person comfortable. Seek medical care for breathing difficulty or persistent symptoms. Avoid exposing rescuers to dust. Obtain prompt medical attention; urgent assessment is required after ingestion or breathing difficulty.
Skin	Remove contaminated clothing and rinse skin thoroughly with water. Seek medical advice for persistent irritation. Obtain prompt medical attention; urgent assessment is required after ingestion or breathing difficulty.
Eyes	Rinse gently with clean water for at least 15 minutes. Remove contact lenses when easy and continue rinsing. Seek medical advice if irritation persists. Obtain prompt medical attention; urgent assessment is required after ingestion or breathing difficulty.
Ingestion	Rinse the mouth. Do not induce vomiting. Give nothing by mouth to an unconscious person. Obtain emergency medical attention. Obtain prompt medical attention; urgent assessment is required after ingestion or breathing difficulty.
Effects / treatment	Toxic ingestion and harmful inhalation require immediate medical assessment. Dust may irritate eyes; avoid direct contact and exposure. Treatment is symptomatic and directed by a clinician. Obtain prompt medical attention; urgent assessment is required after ingestion or breathing difficulty.

5. Fire-Fighting Measures

Extinguishing media	The material is noncombustible but intensifies burning of other materials. Use extinguishing media suitable for the surrounding fire and water mist to cool closed packages when safe. Firefighters need full protection and breathing apparatus.
Hazards	Thermal decomposition can release nitrogen oxides and irritating fumes.
Protection	Firefighters require suitable protective clothing and self-contained breathing equipment. Prevent contaminated firefighting water entering drains.

6. Accidental Release Measures

Personal protection	Restrict access and use ventilation and suitable PPE; avoid raising dust.
Containment	Collect carefully into labelled compatible containers. Keep oxidizers away from organic or combustible absorbents and contamination.
Environment	Prevent drainage and uncontrolled release; use an approved disposal route.

7. Handling and Storage

Handling	Use enclosed transfer or suitable local extraction. Wear chemical-resistant gloves, goggles and protective clothing, and fitted particulate respiratory protection when required. Avoid dust inhalation and all ingestion; provide eyewash and emergency-response access.
Storage	Keep locked up in tightly closed packages in a cool, dry, ventilated oxidizer store. Protect against heat and physical damage; segregate from combustibles, organic materials, reducing agents and incompatible chemicals.
Incompatibilities	Combustibles, organic materials, reducing agents, incompatible metals, acids, bases and acid anhydrides; excessive heat.

8. Exposure Controls / Personal Protection

Exposure limits	Reference ACGIH and NIOSH TWA 0.5 mg/m3 for soluble barium exposure. Apply local requirements and effective dust control.
Engineering controls	Use local extraction where dust can be generated. Maintain accessible eyewash and emergency washing facilities.
Personal protection	Wear chemical-resistant gloves selected for the task, suitable protective clothing and splash goggles. Add face protection for splash-prone tasks.
Respiratory protection	Use a properly selected respirator under a respiratory-protection program where engineering controls do not adequately limit airborne exposure.
Hygiene	Wash after handling, remove contaminated clothing promptly and do not eat, drink or smoke in the work area.

9. Physical and Chemical Properties

Appearance	White crystalline solid
Formula / molecular weight	Ba(NO3)2 / 261.34 g/mol
Appearance	White crystalline solid
pH, supply	5–8
Water solubility, reference at 20°C	9 g/100 mL
Thermal decomposition, reference	Above approximately 592°C
Other properties	Product-specific values for odor threshold, vapor pressure, partition coefficient, autoignition temperature and viscosity are not supplied by the selected reference set. No values are inferred.

10. Stability and Reactivity

Stability	Handle and store under the recommended conditions. Prevent contamination and unnecessary heating.
Incompatibilities	Combustibles, organic materials, reducing agents, incompatible metals, acids, bases and acid anhydrides; excessive heat.
Decomposition	Thermal decomposition can release nitrogen oxides and irritating fumes.

11. Toxicological Information

Exposure effects	Toxic ingestion and harmful inhalation require immediate medical assessment. Dust may irritate eyes; avoid direct contact and exposure.
Reference classification	Oxidizing solid Category 2; acute oral toxicity Category 3; acute inhalation toxicity Category 4; eye irritation Category 2.
Data limits	Reference oral rat LD50 interval 50–300 mg/kg and rat inhalation LC50 >1.1 mg/L over 243 minutes. Toxic ingestion and harmful inhalation classifications remain applicable; no delivered-lot chronic study is established.

12. Ecological Information

Environmental effects	Prevent drainage or environmental release. The salt dissolves in water and may be mobile; numerical aquatic, persistence and bioaccumulation endpoints for the supplied grade are not established.
Controls	Prevent uncontrolled release, collect spills and dispose of contaminated material through an authorized route.
Assessment	No product-specific PBT/vPvB assessment is claimed. Absence of data does not establish absence of environmental effects.

13. Disposal Considerations

Product	Collect surplus product and contaminated cleanup material for disposal by an authorized chemical-waste contractor in accordance with local requirements.
Packaging	Containers may retain product residues. Do not reuse contaminated packaging without an approved cleaning process; use an authorized disposal route.

14. Transport Information

Classification	Class 5.1 — Oxidizer; subsidiary risk 6.1
UN number	UN 1446
Shipping name	BARIUM NITRATE
Class / packing group	DOT / TDG, IMDG and IATA: UN 1446, BARIUM NITRATE, Class 5.1 with subsidiary risk 6.1, packing group II for the solid reference. Keep incompatible cargo segregated.
Transport precautions	Protect packaging and closures from damage, secure loads and prevent releases. This reference is not a shipping declaration for a specific consignment.

15. Regulatory Information

Identity	Barium Nitrate; CAS 10022-31-8; EC 233-020-5
HS reference	283429; reference heading rather than a destination customs ruling.
Compliance	Apply applicable workplace, environmental and transport rules. A raw-material listing does not establish authorization for a finished formulation.
Assessment	No ZXCHEM-specific chemical safety assessment or destination registration is asserted.

16. Other Information

Hazard meanings	H272: may intensify fire; oxidizer. H301: toxic if swallowed. H319: causes serious eye irritation. H332: harmful if inhaled.
Limitations	Prepared as reference safety information for the identified material. It is not a batch analytical certificate or safety assessment of a different solvent-containing formulation.
Revision	2026.1; prepared 2026-10-07. Customer-document branding and title corrected; technical safety data retained.
Document scope	Reference safety information for the material and grade described in Sections 1 and 3. Different concentrations, solvents or formulations require the applicable safety information. This is not a batch analytical certificate.

Revision: 2026.1 | Revision date: 2026-10-07