

# Material Safety Data Sheet

## Barium nitrate

ACC# 02440

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** Barium nitrate**Catalog Numbers:** AC203150000, AC203150050, AC203155000, S71300, S71301, S75050, B53-500**Synonyms:** Barium Dinitrate; Nitric Acid Barium Salt.**Company Identification:**

Fisher Scientific  
 1 Reagent Lane  
 Fair Lawn, NJ 07410

**For information, call:** 201-796-7100**Emergency Number:** 201-796-7100**For CHEMTREC assistance, call:** 800-424-9300**For International CHEMTREC assistance, call:** 703-527-3887

### Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
10022-31-8	Barium nitrate	100	233-020-5

**Hazard Symbols:** XN O**Risk Phrases:** 20/22 8

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: white crystals. **Danger!** May cause central nervous system effects. May cause kidney damage. May cause cardiac disturbances. Strong oxidizer. Contact with other material may cause a fire. Harmful if inhaled or swallowed. May cause eye, skin, and respiratory tract irritation.  
**Target Organs:** Kidneys, central nervous system, muscles, cardiovascular system.

#### Potential Health Effects

**Eye:** May cause moderate eye irritation.**Skin:** May cause skin irritation. May be harmful if absorbed through the skin.

**Ingestion:** Harmful if swallowed. May cause kidney damage. Ingestion of nitrate containing compounds can lead to methemoglobinemia. The barium ion is a muscle poison causing stimulation and then paralysis. Initial symptoms are gastrointestinal, including nausea, vomiting, colic, and diarrhea, followed by myocardial and general muscular stimulation with tingling in the extremities. The barium ion is a muscle poison causing stimulation and then paralysis. Initial symptoms are gastrointestinal, including nausea, vomiting, colic, and diarrhea, followed by myocardial and general muscular stimulation with tingling in the extremities. The barium ion is a muscle poison causing stimulation and then paralysis. Initial symptoms are gastrointestinal, including nausea, vomiting, colic, and diarrhea, followed by myocardial and general muscular stimulation with tingling

in the extremities. The barium ion stimulates cardiac, smooth and striated muscle. Various motor disturbances including stiffness, cramps, weakness or paralysis of the musculature may be seen with exposure to soluble barium salts. Central nervous system stimulation may be seen followed by depression.

**Inhalation:** Harmful if inhaled. May cause respiratory tract irritation. Inhalation at high concentrations may cause CNS depression and asphyxiation.

**Chronic:** May cause kidney damage. May cause kidney damage.

## Section 4 - First Aid Measures

**Eyes:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

**Skin:** Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

**Ingestion:** Call a poison control center. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

**Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

**Notes to Physician:** For methemoglobinemia, administer oxygen alone or with Methylene Blue depending on the methemoglobin concentration in the blood. Institute cardiac monitoring for all significant ingestions of soluble barium salts. Institute cardiac monitoring for all significant ingestions of soluble barium salts.

## Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Strong oxidizer. Contact with combustible materials may cause a fire.

**Extinguishing Media:** Use water spray to cool fire-exposed containers. Contact professional firefighters immediately. For small fires, do NOT use dry chemicals, carbon dioxide, halon or foams. USE WATER ONLY. For large fires, flood fire area with water from a distance.

**Flash Point:** Not applicable.

**Autoignition Temperature:** Not applicable.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 2; Flammability: 1; Instability: 1; Special Hazard: OX

## Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation. Do not use combustible materials such as paper towels to clean up spill.

## Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Avoid contact with clothing and other combustible materials. Do not get on skin or in eyes. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

**Storage:** Keep away from heat, sparks, and flame. Do not store near combustible materials. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from reducing agents.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Barium nitrate	none listed	0.5 mg/m <sup>3</sup> TWA (as Ba)	none listed

**OSHA Vacated PELs:** Barium nitrate: No OSHA Vacated PELs are listed for this chemical.

### Personal Protective Equipment

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate gloves to prevent skin exposure.

**Clothing:** Wear a chemical apron. Wear appropriate clothing to prevent skin exposure.

**Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

## Section 9 - Physical and Chemical Properties

**Physical State:** Crystals

**Appearance:** white

**Odor:** odorless

**pH:** 5.0-8.0, 5% Aq. soln.

**Vapor Pressure:** Negligible.

**Vapor Density:** 9.0

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Boiling Point:** Decomposes.

**Freezing/Melting Point:** 592 deg C

**Decomposition Temperature:** > 592 deg C

**Solubility:** moderate

**Specific Gravity/Density:** 3.24 @23C

**Molecular Formula:** Ba(NO<sub>3</sub>)<sub>2</sub>

**Molecular Weight:** 261.3398

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable under normal temperatures and pressures.

**Conditions to Avoid:** Dust generation.

**Incompatibilities with Other Materials:** Combustible and flammable materials (e.g. alkyl resins, asphalt, gasoline, grease, methyl acetone, polystyrene, polyurethane), reducing agents, zinc, magnesium, phosphorus, aluminum, hydroxylamine, esters (e.g. butyl acetate, ethyl acetate, propyl formate), tin chloride, acids, acid anhydrides, bases.

**Hazardous Decomposition Products:** Nitrogen oxides, barium oxide.

**Hazardous Polymerization:** Has not been reported.

## Section 11 - Toxicological Information

**RTECS#:**

**CAS#** 10022-31-8: CQ9625000

**LD50/LC50:**

CAS# 10022-31-8:

Draize test, rabbit, eye: 100 mg/24H Moderate;

Draize test, rabbit, skin: 500 mg/24H Mild;

Oral, mouse: LD50 = 266 mg/kg;

Oral, rat: LD50 = 355 mg/kg;

Oral, rat: LD50 = 390 mg/kg;

**Carcinogenicity:**

CAS# 10022-31-8: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

**Epidemiology:** No information available.

**Teratogenicity:** No information available.

**Reproductive Effects:** No information available.

**Neurotoxicity:** No information available.

**Mutagenicity:** No information available.

**Other Studies:** See actual entry in RTECS for complete information.

## Section 12 - Ecological Information

**Ecotoxicity:** No data available. No information available.

**Environmental:** Terrestrial: Increases the mobility of other elements in the soil. Has a high bioconcentration potential.

**Physical:** No information available.

**Other:** No information available.

## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

## Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
<b>Shipping Name:</b>	BARIUM NITRATE				BARIUM NITRATE
<b>Hazard Class:</b>	5.1				5.1(6.1)
<b>UN Number:</b>	UN1446				UN1446
<b>Packing Group:</b>	II				II

## Section 15 - Regulatory Information

### US FEDERAL

#### TSCA

CAS# 10022-31-8 is listed on the TSCA inventory.

#### Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

#### Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

#### Section 12b

None of the chemicals are listed under TSCA Section 12b.

#### TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

#### SARA

#### CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

#### SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

#### SARA Codes

CAS # 10022-31-8: acute, flammable.

#### Section 313

This material contains Barium nitrate (listed as Barium), 100%, (CAS# 10022-31-8) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

#### Clean Air Act:

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

#### Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

#### OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

#### STATE

CAS# 10022-31-8 can be found on the following state right to know lists: New Jersey, Pennsylvania, Massachusetts.

California No Significant Risk Level: None of the chemicals in this product are listed.

**European/International Regulations**  
**European Labeling in Accordance with EC Directives**  
**Hazard Symbols:**

XN O

**Risk Phrases:**

R 20/22 Harmful by inhalation and if swallowed.  
 R 8 Contact with combustible material may cause fire.

**Safety Phrases:**

S 28 After contact with skin, wash immediately with...

**WGK (Water Danger/Protection)**

CAS# 10022-31-8: 1

**Canada - DSL/NDSL**

CAS# 10022-31-8 is listed on Canada's DSL List.

**Canada - WHMIS**

This product has a WHMIS classification of C, D1B, D2B.

**Canadian Ingredient Disclosure List**

CAS# 10022-31-8 is listed on the Canadian Ingredient Disclosure List.

**Exposure Limits**

CAS# 10022-31-8: OEL-AUSTRALIA:TWA 0.5 mg(Ba)/m<sup>3</sup> OEL-AUSTRIA:TWA 0.5 mg(Ba)/m<sup>3</sup> OEL-BELGIUM:TWA 0.5 mg(Ba)/m<sup>3</sup> OEL-DENMARK:TWA 0.5 mg(Ba)/m<sup>3</sup> OEL-FINLAND:TWA 0.5 mg(Ba)/m<sup>3</sup> OEL-GERMANY:TWA 0.5 mg(Ba)/m<sup>3</sup> (total dust) OEL-HUNGARY:STEL 0.5 mg(Ba)/m<sup>3</sup> OEL-THE NETHERLANDS:TWA 0.5 mg(Ba)/m<sup>3</sup> OEL-THE PHILIPPINES:TWA 0.5 mg(Ba)/m<sup>3</sup> OEL-POLAND:TWA 0.5 mg(Ba)/m<sup>3</sup>;STEL 1.5 mg(Ba)/m<sup>3</sup> OEL-RUSSIA:STEL 0.5 mg/m<sup>3</sup> OEL-SWITZERLAND:TWA 0.5 mg(Ba)/m<sup>3</sup>;STEL 1 mg(Ba)/m OEL-TURKEY:TWA 0.5 mg(Ba)/m<sup>3</sup> OEL-UNITED KINGDOM:TWA 0.5 mg(Ba)/m<sup>3</sup> OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGIH TLV

**Section 16 - Additional Information**

**MSDS Creation Date:** 9/14/1998

**Revision #3 Date:** 11/12/2003

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