

Material Safety Data Sheet

Barium chloride dihydrate

ACC# 02371

Section 1 - Chemical Product and Company Identification

MSDS Name: Barium chloride dihydrate
Catalog Numbers: AC203130000, AC203130010, AC203135000, AC423450000, AC423450050, AC423455000, S71245, S71248R
Synonyms: Barium dichloride dihydrate.
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
10326-27-9	Barium chloride dihydrate	> 99	unlisted

Hazard Symbols: T
Risk Phrases: 25 20

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white solid. **Warning!** Harmful if swallowed. Causes eye and skin irritation. Causes severe respiratory tract irritation. May cause cardiac disturbances. May cause kidney damage. May cause lung damage.
Target Organs: Kidneys, heart, respiratory system, muscles, cardiovascular system.

Potential Health Effects

Eye: Contact produces irritation, tearing, and burning pain. May cause conjunctivitis.
Skin: Causes skin irritation. Prolonged contact with the skin, especially if the skin is wet or moist, causes necrosis.
Ingestion: Harmful if swallowed. May cause kidney damage. 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. Barium chloride affects the muscles (especially the smooth muscles of the cardiovascular and respiratory systems), causes salivation, tingling of the mouth or face, convulsions, numbness, muscle paralysis, respiratory failure, slow pulse rate, pulmonary edema, irregular heart beat, potassium deficiency in the blood.

Inhalation: Causes respiratory tract irritation. May cause effects similar to those described for ingestion.

Chronic: Chronic exposure may cause effects similar to those of acute exposure.

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: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

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. Do NOT use mouth-to-mouth resuscitation.

Notes to Physician: Do NOT use mouth-to-mouth resuscitation.

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.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 2; Flammability: 0; Instability: 0

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. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Wash hands before eating. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and

clothing. Do not ingest or inhale.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

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 general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Barium chloride dihydrate	none listed	none listed	none listed
Barium chloride anhydrous	none listed	0.5 mg/m ³ TWA (as Ba)	none listed

OSHA Vacated PELs: Barium chloride dihydrate: No OSHA Vacated PELs are listed for this chemical. Barium chloride anhydrous: 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 appropriate protective 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: Solid

Appearance: white

Odor: odorless

pH: 5-8 (5% soln)

Vapor Pressure: Negligible.

Vapor Density: Not applicable.

Evaporation Rate: Negligible.

Viscosity: Not available.

Boiling Point: 1560 deg C

Freezing/Melting Point: 962 deg C

Decomposition Temperature: Not available.

Solubility: 59% @ 100°C

Specific Gravity/Density: 3.86

Molecular Formula: BaCl₂·2H₂O

Molecular Weight: 244.28

Section 10 - Stability and Reactivity

Chemical Stability: Stable.

Conditions to Avoid: Dust generation, excess heat.

Incompatibilities with Other Materials: Incompatible with bromine trifluoride and 2-furan

percarboxylic acid (explodes at room temperature). Reacts violently with sulfuric acid.

Hazardous Decomposition Products: Hydrogen chloride, chlorine.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 10326-27-9: CQ8751000

CAS# 10361-37-2: CQ8750000

LD50/LC50:

Not available.

CAS# 10361-37-2:

Oral, mouse: LD50 = 150 mg/kg;

Oral, rat: LD50 = 118 mg/kg;

Oral, rat: LD50 = 397 mg/kg;

Carcinogenicity:

CAS# 10326-27-9: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA. CAS# 10361-37-2: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology: No information found.

Teratogenicity: No information found.

Reproductive Effects: No information found.

Neurotoxicity: No information found.

Mutagenicity: No information found.

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

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.

Environmental: Barium chloride accumulates in plants when it exceeds calcium and magnesium levels in soil.

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

Shipping Name:	BARIUM COMPOUNDS, N.O.S.	BARIUM COMPOUNDS NOS (BARIUM CHLORIDE DIHYDRATE)
Hazard Class:	6.1	6.1
UN Number:	UN1564	UN1564
Packing Group:	III	III

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 10326-27-9 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form is on the inventory (40CFR720.3(u)(2)).

CAS# 10361-37-2 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 # 10326-27-9: acute, chronic. CAS # 10361-37-2: acute, chronic.

Section 313

This material contains Barium chloride dihydrate (listed as Barium), 99%, (CAS# 10326-27-9) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373. This chemical is not at a high enough concentration to be reportable under Section 313.

Clean Air Act:

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

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# 10326-27-9 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

CAS# 10361-37-2 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

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:**

T

Risk Phrases:

R 25 Toxic if swallowed.

R 20 Harmful by inhalation.

Safety Phrases:

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 10326-27-9: 1

CAS# 10361-37-2: 1

Canada - DSL/NDSL

CAS# 10361-37-2 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D1B.

Canadian Ingredient Disclosure List

CAS# 10326-27-9 is not listed on the Canadian Ingredient Disclosure List.

CAS# 10361-37-2 is listed on the Canadian Ingredient Disclosure List.

Exposure Limits

CAS# 10326-27-9: OEL-AUSTRALIA:TWA 0.5 mg(Ba)/m³ OEL-AUSTRIA:TWA 0.5 mg(Ba)/m³ OEL-BELGIUM:TWA 0.5 mg(Ba)/m³ OEL-DENMARK:TWA 0.5 mg(Ba)/m³ OEL-FINLAND:TWA 0.5 mg(Ba)/m³ OEL-GERMANY:TWA 0.5 mg(Ba)/m³ (total dust) OEL-HUNGARY:STEL 0.5 mg(Ba)/m³ OEL-THE NETHERLANDS:TWA 0.5 mg(Ba)/m³ OEL-THE PHILIPPINES:TWA 0.5 mg(Ba)/m³ OEL-POLAND:TWA 0.5 mg(Ba)/m³;STEL 1.5 mg(Ba)/m³ OEL-SWITZERLAND:TWA 0.5 mg(Ba)/m³;STEL 1 mg(Ba)/m OEL-TURKEY:TWA 0.5 mg(Ba)/m³ OEL-UNITED KINGDOM:TWA 0.5 mg(Ba)/m³ OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

CAS# 10361-37-2: OEL-AUSTRALIA:TWA 0.5 mg(Ba)/m³ OEL-AUSTRIA:TWA 0.5 mg(Ba)/m³ OEL-BELGIUM:TWA 0.5 mg(Ba)/m³ OEL-DENMARK:TWA 0.5 mg(Ba)/m³ OEL-FINLAND:TWA 0.5 mg(Ba)/m³ OEL-GERMANY:TWA 0.5 mg(Ba)/m³ (total dust) OEL-HUNGARY:STEL 0.5 mg(Ba)/m³ OEL-THE NETHERLANDS:TWA 0.5 mg(Ba)/m³ OEL-THE PHILIPPINES:TWA 0.5 mg(Ba)/m³ OEL-POLAND:TWA 0.5 mg(Ba)/m³;STEL 1.5 mg(Ba)/m³ OEL-RUSSIA:STEL 0.3 mg/m³ OEL-SWITZERLAND:TWA 0.5 mg(Ba)/m³;STEL 1 mg(Ba)/m OEL-TURKEY:TWA 0.5 mg(Ba)/m³ OEL-UNITED KINGDOM:TWA 0.5 mg(Ba)/m³ OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

Section 16 - Additional Information
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MSDS Creation Date: 4/23/1999**Revision #5 Date:** 3/04/2004

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.