

# Barium Carbonate

## Barium Carbonate

### Material Safety Data Sheet

**Chemical:** Barium Carbonate

NFPA: H=2 F=0 I= 1 S=None

HMIS: H=2 F=0 R=0 PPE= Supplied by user;  
dependent on conditions

**MSDS Number:** barcarb-1003

**Effective Date:** 9 October 2003

**Issued by:** Solvay Chemicals, Inc. Regulatory Affairs Department

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## 1. Company and Product Identification

**1.1 Product Name:** Barium Carbonate

**Chemical Name:** Barium Carbonate

**Synonyms:** Barium salt

**Chemical Formula:** BaCO<sub>3</sub>

**Molecular Weight:** 197.37

**CAS Number:** 513-77-9

**EINECS Number:** 208-167-3

**Grades/Trade Names:** Barium Carbonate Granular, High Purity Grade VL 600 and VL 600S

**1.2 Recommended Uses:** Construction materials, additives, Chemical industry, Pharmaceuticals, Glass industry, Welding and soldering agents, Electrical industry.

**1.3 Supplier:** Solvay Chemicals, Inc.  
PO BOX 27328 Houston, TX 77227-7328  
3333 Richmond Ave. Houston, Texas 77098

**1.4 Emergency Telephone Numbers**

**General:** 1-877-765-8292 (Solvay Chemicals, Inc.,)

**Emergencies (USA):** 1-800-424-9300 (CHEMTREC®)

**Transportation Emergencies (INTERNATIONAL/MARITIME):** 1-703-527-3887 (CHEMTREC®)

**Transportation Emergencies (CANADA):** 1-613-996-6666 (CANUTEC)

**Transportation Emergencies (MEXICO-SETIQ):** 91-800-00-214-00 (MEX. REPUBLIC)  
-0-11-525-559-1588 (elsewhere)



Responsible Care  
Good Chemistry at Work

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Solvay  
Chemicals



Interox, Fluorides & Minerals

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## 2. Composition/Information on Ingredients

### 2.1 Composition/Information on Ingredients (Granular)

INGREDIENTS	FORMULA	WT. PERCENT	CAS #
Barium Carbonate	BaCO <sub>3</sub>	>97.7	513-77-9
Strontium Oxide	SrO	<1.4	1314-11-0

### 2.2 Composition/Information on Ingredients (High Purity)

INGREDIENTS	FORMULA	WT. PERCENT	CAS #
Barium Carbonate	BaCO <sub>3</sub>	>99.5	513-77-9
Strontium Carbonate	SrCO <sub>3</sub>	<0.17	1633-05-2

## 3. Hazards Identification

### Emergency Overview:

- Hazardous product for human health.
- Presents hazards from its ionizing barium action on the neuro muscular system.

**3.1 Route of Entry:** Inhalation: Yes Skin: Yes Ingestion: Yes

### 3.2 Potential Effects of exposure:

- Hazard due to the formation of barium chloride in the presence of hydrochloric acid (stomach).
- Risk of cardiac, nervous and muscular disorders.
- Fatalities have been observed after a single dose of 4 grams or more taken by an adult weighing 70 kg (155 lbs.).

#### Inhalation (Dusts):

- At high concentrations, nose and throat irritation.
- In case of repeated or prolonged exposure: risk of bronchitis.

**Eyes:** Moderate irritation. Risk of temporary eye lesions.

**Skin contact:** May cause irritation with redness and pain.

#### Ingestion:

- Abundant salivation, nausea, vomiting, abdominal cramps and diarrhea.
- Risk of cardiac rhythm alteration.
- Trembling, muscle cramps followed by general weakness and paralysis of the extremities.
- Risk of shock.

**Carcinogenicity:** See section 11.3

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#### 4. First-Aid Measures

##### General Recommendations:

##### 4.1 Inhalation:

- Remove the subject from dusty environment and let him blow his nose.
- Consult with a physician in case of respiratory and nervous symptoms.

##### Eyes:

- Flush eyes with running water for at least 15 minutes, while keeping the eyelids wide open.
- Consult with an ophthalmologist in case of persistent pain.

**Skin:** Wash the affected skin with soap and water for at least 15 minutes and clean clothing.

**Ingestion:** Consult with a physician in all cases and take to the hospital.

##### If the subject is completely conscious:

- Rinse mouth with fresh water. 250 ml of fresh water added with 30 grams of sodium sulfate. If the subject presents nervous, respiratory or cardiovascular disorders: administer oxygen.

##### If the subject is unconscious:

- NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.
- Remove any evidence of the product from the person's mouth.
- Loosen collar and tight clothing, lay the victim on his/her left side.
- Administer oxygen or cardiopulmonary resuscitation if necessary while keeping and patient warm.

##### 4.2 Medical Treatment/Notes to Physician:

- Do not give adrenergic drugs.
- Ingestion: Pulmonary resuscitation (oxygen therapy). If necessary, tracheal intubation. Gastric lavage after administration of 250 ml of water added with 30 grams of sodium sulfate.
- Surveillance of cardiovascular system (heart rate and blood pressure).
- Surveillance of neuro-muscular reactions.
- Surveillance and treatment of hypokalemia.

#### 5. Fire-Fighting Measures

**5.1 Flash point:** Not Applicable.

**5.2 Auto-ignition Temperature:** Not Applicable.

**5.3 Flammability Limits:** Not Applicable.

**5.4 Unusual Fire and Explosion Hazards:** None.

**5.5 Common Extinguishing Methods:** In case of fire in close proximity, all means of extinguishing are acceptable.

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#### 6. Accidental Release Measures

- 6.1 Precautions:** Avoid excessive dust.
- 6.2 Cleanup methods:** Clean up uncontaminated material and recycle into process. Place unusable material into a closed, labeled container compatible with the product.
- 6.3 Precautions for protection of the environment:** Clean up residual material by washing area with water. Do not flush to drain. Prevent material from entering public sewer systems or any waterways. Dispose of waste in accordance with applicable federal, state, and local environmental laws and regulations.

#### 7. Handling and Storage

- 7.1 Handling:** Operate in a well-ventilated area. Keep away from reactive products (see section 10).
- 7.2 Storage:** Store in a dry area away from food, keeping product in original closed packaging.
- 7.3 Specific Uses:** See Section 1.2
- 7.4 Packaging:** Paper and PE.

#### 8. Exposure Controls/Personal Protection

##### 8.1 Exposure Limit Values - Barium Carbonate:

Authorized limit Values	TLV® ACGIH®-USA (2002)	OSHA PEL	NIOSH REL (1994)
Barium Carbonate	0.5 mg/m <sup>3</sup> as Ba, in soluble compounds of Ba	0.5 mg/m <sup>3</sup> as Ba, in soluble compounds of Ba	

ACGIH® and TLV® are registered trademarks of the American Conference of Governmental Industrial Hygienists.

##### 8.2 Occupational Exposure Controls:

###### 8.2.1 Ventilation:

- Premises ventilation.
- Maintain employee exposures to levels below the applicable exposure limits.

###### 8.2.2 Respiratory protection:

- Respiratory protection: Use only respiratory protection that conforms to international/national standards (NIOSH/MSHA approved respiratory protection).
- Full-face supplied air respirator for high or unknown exposures. Cartridge respirators in known concentrations above exposure limits.
- Comply with OSHA respiratory protection requirements.

**8.2.3 Hand protection:** Chemical protective gloves. Recommended materials: PVC, neoprene or rubber.

**8.2.4 Eye protection:** Wear protective goggles for all industrial operations.

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**8.2.5 Skin protection:** Wear boots, apron, long sleeves and other protective clothing suitable for use conditions to prevent contact with the skin.

**8.3 Other information:**

- Chemical protective clothing in dusty areas.
- An eyewash and safety shower should be nearby and ready for use.
- Use good hygiene practices when handling this product including changing work clothes after use.
- Do not eat, drink or smoke in areas where this material is handled.

## 9. Physical and Chemical Properties

**9.1 Appearance:** Powder, pellets

**Color:** White

**Odor:** Odorless

**9.2 Important Health, Safety and Environmental information:**

**pH:** 7 to 8 @ 20°C (68°F) in saturated solution.

**Change of state:**

Melting point: Not Applicable.

Boiling point: Not Applicable.

Decomposition Temperature: > 1400°C (2552°F)

**Flash Point:** Not Applicable.

**Oxidizing Properties:** Oxidizer, See Section 4

**Vapor Pressure:** Not Applicable.

**Relative Density:**

Specific gravity (H<sub>2</sub>O=1): 4.3

**Solubility:**

Water: 0.02 g/l @ 20°C (68°F).

**Partition coefficient:** P (n-octanol/water): Not listed.

**Viscosity:** Not Applicable.

**Vapor Density (air=1):** Not Applicable.

**Evaporation Rate:** Not Applicable.

**9.3 Other Information:** Bulk Density-400-2,000 kg/m<sup>3</sup> (25-125 lbs/ft.<sup>3</sup>)

## 10. Stability and Reactivity

**Stability:** Stable under normal conditions of use.

**10.1 Conditions to avoid:** Heat.

**10.2 Materials and substances to avoid:** Contact with acids liberates CO<sub>2</sub>, sometimes violently.

**10.3 Hazardous decomposition products:** Carbon dioxide and soluble Barium salts (Barium oxide).

**10.4 Hazardous Polymerization:** Not Applicable.

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#### 11. Toxicological Information

##### 11.1 Acute toxicity:

**Oral:** LD<sub>50</sub>, Rat, 418-800 mg/kg.

##### 11.2 Chronic toxicity:

- Inhalation-After repeated exposure, rat, Target Organ-cardiovascular/hematology respiratory system liver: 5.2 mg/m<sup>3</sup>, observed effect.
- Oral -After repeated exposure, rat/mouse, Target Organ - cardiovascular/hematology renal system/adrenal glands, observed effect.

**11.3 Carcinogenic Designation:** Oral (water), after prolonged exposure, rat/mouse, no carcinogenic effect.

**11.4 Comments:** Harmful effect by oral route. The toxicity is mainly linked to the barium ion (nervous, cardiovascular, respiratory and gastrointestinal troubles). Risk of effect on liver, the cardiovascular and hematological system and the adrenals. Irritant effect for the skin and eyes.

#### 12. Ecological Information

**12.1 Acute ecotoxicity:** Fishes, Gambusia affinis, LC 50, 96 hour(s), > 10 g/l. Result: toxicity threshold above hydro-solubility.

**12.2 Chronic ecotoxicity:** No data.

**12.3 Mobility:** Mobility as solid aerosols.

##### 12.4 Degradation

**Abiotic:** Slow ionization and cation precipitation in presence of sulfates or carbonates.

**Biotic:** Not Applicable (inorganic compound).

**12.5 Potential for bioaccumulation:** Bio-concentration-Result: potential accumulation of the cation.

**12.6 Other adverse effects/Comments:** Product is not significantly hazardous for the environment. Persistent product mainly as inert form.

#### 13. Disposal Considerations

**13.1 Waste treatment:** Use a solution of sodium/magnesium sulfate or a dilute solution of sulfuric acid to form a precipitate of sulfate. Spilled product should be disposed of in an EPA approved disposal facility in accordance with applicable national, state and local environmental laws and regulations.

**13.2 Packaging treatment:** Containers that cannot be cleaned must be treated as waste and disposed of in an approved industrial incineration facility.

**13.3 RCRA Hazardous Waste:** May exhibit characteristic of hazardous waste (D005). Results of toxicant extraction test must show waste to contain at least 100 mg/l barium to be considered hazardous waste.

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#### 14. Transport Information

Mode	DOT	IMDG	IATA
UN Number	1564	1564	1564
Class (Subsidiary)	6.1	6.1	6.1
Proper Shipping Name	Barium compounds, n.o.s. (Barium Carbonate)	Barium compounds, n.o.s. (Barium Carbonate)	Barium compounds, n.o.s. (Barium Carbonate)
Hazard label (Subsidiary)	Toxic	Toxic	Toxic
Marine Pollutant	No	No	No
Placard [Subsidiary]	1564	60/1564	1564
Packing Group	III	III	III
Reportable Quantity	No	No	No
MFAG			
Emergency Info	ERG Guide # 154	EmS: 6.1-04	ERG Code 6L
STCC #	28-126-13		

#### 15. Regulatory Information

##### National Regulations (US)

**TSCA Inventory 8(b):** Yes

**SARA Title III Sec. 302/303 Extremely Hazardous Substances (40 CFR355):** No

**SARA Title III Sec. 311/312 (40 CFR 370):**

- Hazard Category
- Acute health hazard; chronic health hazard.
  - Threshold planning quantity - 10,000 lbs

**SARA Title III Sec. 313 Toxic Chemical Emissions Reporting (40 CFR 372):** No

**CERCLA Hazardous Substance (40CFR Part 302)**

Listed Substance: No

##### State Component Listing:

State	Comment
CA	Airborne Contaminants & Emissions Inventory
CN	Hazardous material survey
IL	Toxic substances disclosure to employees Act
IN	Occupational Health and Safety Standards-Air
KY	Occupational Health and Safety Standards-Air
LA	Spill Reporting
MA	Oil and Hazardous materials list
MI	Hazardous substance list
NJ	Right to Know substance list
NC	Right to Know substance list
PA	Right to Know substance list
RI	Hazardous substance list

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**National Regulations (Canada) Canadian DSL Registration:** Yes

**WHMIS Classification:** D-1 Material causing immediate and serious toxic effects

This product has been classified in accordance with the hazard criteria of the **Controlled Products Regulations** and the MSDS contains all the information required by the **Controlled Products Regulations**.

**Labeling according to Directive 1999/45/EC.**

Category

Phrases R 22 Harmful if swallowed  
S 2 Keep out of reach of children.  
24/25 Avoid contact with skin and eyes.

## 16. Other Information

### 16.1 Ratings:

**NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)**

Health = 2 Flammability = 0 Instability = 1 Special = None

**HMIS (HAZARDOUS MATERIAL INFORMATION SYSTEM)**

Health = 2 Fire = 0 Reactivity = 1 PPE = Supplied by User; dependent on local conditions

### 16.2 Other Information:

The previous information is based upon our current knowledge and experience of our product and is not exhaustive. It applies to the product as defined by the specifications. In case of combinations of mixtures, one must confirm that no new hazards are likely to exist. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and integrity of the work environment. (Unless noted to the contrary, the technical information applies only to pure product).

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### 16.3 Reason for revision:

Supersedes edition: Solvay Minerals MSDS # 28 and 28HP dated 06/26/03

Purpose of revision: Change Company name and MSDS format