# Material Safety Data Sheet

## Section I. Product Identification and Uses

**Product name:** BARIUM HYDROXIDE  
**Chemical formula:** $\text{Ba(OH)}_2 \cdot 8\text{H}_2\text{O}$  
**Synonyms:** Barium hydroxide octahydrate, AC-0944, AC-0944T, 09614, 09660  
**Supplier:** Anachemia Canada.  
255 Norman.  
Lachine (Montreal), Que  
H8R 1A3  
**Material uses:** For laboratory use only.

### WHMIS

- **WHMIS CLASS:** D-1B E  
- **Protective Clothing:**  
- **TDG CLASS:** 6.1  
- **PIN:** UN1564 PG: III  

### Section II. Ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS #</th>
<th>%</th>
<th>TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) BARIUM HYDROXIDE</td>
<td>12230-71-6</td>
<td>98-100</td>
<td>Exposure limits: ACGIH (Soluble barium compounds (as Ba)) TWA 0.5 mg/(Ba)/m3</td>
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</tbody>
</table>

### Toxicity values of the hazardous ingredients

- **BARIUM HYDROXIDE:**  
  - LD50: Not available.  
  - LC50: Not available.
**Section III. Physical Data**

| Physical state and appearance / Odor | Colorless crystals or white powder. Odorless. |
| pH (1% soln/water) | Not available. |
| Odor threshold | Not available. |
| Percent volatile | Not applicable. |
| Freezing point | 78°C |
| Boiling point | Decomposes. |
| Specific gravity | 2.2 @ 16°C (Water = 1) |
| Vapor density | Not applicable. |
| Vapor pressure | Not applicable. |
| Water/oil dist. coeff. | Not available. |
| Evaporation rate | Not applicable. |
| Solubility | Soluble in cold water. |

**Section IV. Fire and Explosion Data**

| Flash point | Not applicable. |
| Flammable limits | Not applicable. |
| Auto-ignition temperature | Not applicable. |
| Fire degradation products | Oxides of barium. |
| Fire extinguishing procedures | Use DRY chemical, carbon dioxide, or water spray. Wear adequate personal protection to prevent contact with material or its combustion products. Self contained breathing apparatus with a full facepiece operated in a pressure demand or other positive pressure mode. Cool containing vessels with flooding quantities of water. Move containing vessels from fire if without risk. |
| Fire and Explosion Hazards | The sensitivity to impact is not available. The sensitivity to static discharge is not applicable. Emits toxic and corrosive fumes under fire conditions. |

**Section V. Toxicological Properties**

| Routes of entry | Inhalation and ingestion. Skin contact. Eye contact. |
| Effects of Acute Exposure | May be fatal by ingestion, inhalation or skin absorption. Corrosive. Target organs: heart, blood, central nervous system, liver, kidneys, spleen, cardiovascular system, gastrointestinal system, nerves, bone marrow. |
| Eye | Cause severe burns and loss of vision. May cause permanent damage. |
| Skin | Causes severe burns. Skin contact may cause dermatitis. |
| Inhalation | Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract. Coughing, shortness of breath, headache, nausea, vomiting, arhythmia. May cause respiratory tract damage. See ingestion. |
| Ingestion | Highly toxic. Burns in mouth, pharynx and gastrointestinal tract. May cause excessive salivation, nausea, vomiting, abdominal pain, diarrhea, bloody stools, dyspnea, weakness, gastrointestinal hemorrhage, slow and often irregular pulse, dilated pupils, hypokalemia, hypertension, confusion, muscle twitching progressing to convulsions and/or paralysis, failure of the cardiac or respiratory system, and possibly death. Can cause damage to the heart, liver, kidney, bone marrow, muscular system, nervous system, spleen, cardiovascular system, gastrointestinal system, respiratory system. Estimated lethal dose is 1-15 grams. |
### Section V. Toxicological Properties

**Effects of Chronic Overexposure**
May cause varying degrees of paralysis in the extremities. May cause vomiting, diarrhea, abdominal pain, cardiac arrhythmia, central nervous system, liver, spleen and bone marrow damage. Repeated or prolonged contact may cause dermatitis and conjunctivitis. Medical conditions which may be aggravated: Individuals with preexisting diseases of the skin, eye, or respiratory system may be more susceptible to the toxicity of overexposure to this product. Carcinogenic effects: Not available. Mutagenic effects: Not available. Teratogenic effects: Not available. To the best of our knowledge, the chemical, physical, and toxicity of this substance has not been fully investigated.

### Section VI. First Aid Measures

**Eye contact**
Immediate first aid is needed to prevent eye damage. Immediately flush eyes with copious quantities of water for at least 15 minutes holding lids apart to ensure flushing of the entire surface. Seek immediate medical attention.

**Skin contact**
Immediately flush skin with plenty of water and soap for at least 15 minutes while removing contaminated clothing and shoes. Seek immediate medical attention. Wash contaminated clothing before reusing. Discard contaminated leather articles such as shoes and belt.

**Inhalation**
Remove patient to fresh air. Administer approved oxygen supply if breathing is difficult. Administer artificial respiration or CPR if breathing has ceased. Seek immediate medical attention.

**Ingestion**
Induce vomiting. Seek immediate medical attention. Never give anything by mouth to an unconscious or convulsing person.

### Section VII. Reactivity Data

**Stability**
Unstable. Absorbs carbon dioxide from air. Conditions to avoid: High temperatures, sparks, open flames and all other sources of ignition, contamination.

**Hazardous decomp. products**
Not available.

**Incompatibility**

**Reaction Products**
Corrosive to metals. Hazardous polymerization will not occur.
Section VIII. Preventive Measures

Protective Clothing in case of spill and leak

- Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves. Wear disposable coveralls and discard them after use.

Spill and leak

- Evacuate the area. Sweep up and place in container for disposal. Avoid raising dust. Ventilate area and wash spill site after material pick up is complete. DO NOT empty into drains. DO NOT touch spilled material. Avoid contact with a combustible material (wood, paper, oil, clothing...).

Waste disposal

- According to all applicable regulations.

Storage and Handling

- Do not store near organic substances. Do not store near flammable substances. Keep at temperature not exceeding 78°C. Store in a well ventilated area. Store away from incompatible materials. Do not add any other material to the container. Do not wash down the drain. Do not breathe dust. Keep away from combustible material. Keep container tightly closed and dry. Manipulate under an adequate fume hood. Avoid raising dust. Empty containers may contain a hazardous residue. Handle and open container with care. Minimize dust generation and exposure - use dust mask or appropriate protection. Do not get in eyes, on skin, or on clothing. Wash well after use. In accordance with good storage and handling practices. Do not allow smoking and food consumption while handling. If you feel unwell, seek medical advice (show the label when possible.). May corrode metallic surfaces and glass. Store in a polyethylene container.

Section IX. Protective Measures

Protective clothing

- Face shield and splash goggles. Impervious PVC gloves, apron, coveralls, and/or other resistant protective clothing. Sufficient to protect skin. A OSHA/MSHA jointly approved respirator is advised in the absence of proper environmental controls. If more than TLV, do not breathe vapor. Wear self-contained breathing apparatus. Do not wear contact lenses. Make eye bath and emergency shower available. Ensure that eyewash station and safety shower is proximal to the work-station location.

Engineering controls

- Use only in a chemical fume hood to keep airborne levels below recommended exposure limits. Do not use in unventilated spaces.

Section X. Other Information

Special Precautions or comments

- Corrosive! Highly toxic! Causes severe burns! Do not breathe dust. Avoid all contact with the product. Avoid prolonged or repeated exposure. Use only in a chemical fume hood. Handle and open container with care. Container should be opened only by a technically qualified person. Harmful to aquatic life at low concentrations. Can be dangerous if allowed to enter drinking water intakes. Do not contaminate domestic or irrigation water supplies, lakes, streams, ponds, or rivers.

Prepared by MSDS Department/Département de F.S.
Validated 12-Sep-2001

Telephone# (514) 489-5711

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