

Barium Nitrate Solution 0.1M

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Barium Nitrate Solution 0.1M

Synonyms/Generic Names: None

SDS Number: 85.20

Product Use: For Educational Use Only

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Contact: Ward's Science
5100 West Henrietta Rd.
PO Box 92912-9012
Rochester, NY 14692
(800) 962-2660 (Monday-Friday 7:30-7:00 Eastern Time)

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Oxidizer, Toxic by ingestion, Toxic by inhalation, Irritant

Target Organs: Kidney, Liver, Blood, Heart, Gastrointestinal system, Bone marrow, Spleen, Nerves

Signal Words: Warning

Pictograms:



GHS Classification:

| | |
|----------------------------|-------------|
| Oxidizing liquid | Category 3 |
| Acute toxicity, Oral | Category 4 |
| Acute toxicity, Inhalation | Category 4 |
| Skin irritation | Category 3 |
| Eye irritation | Category 2A |

GHS Label Elements, including precautionary statements:

Hazard Statements:

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|-----------|---|
| H272 | May intensify fire; oxidizer. |
| H302+H332 | Harmful if swallowed or in contact with skin. |
| H316 | Causes mild skin irritation. |
| H319 | Causes serious eye irritation. |

Precautionary Statements:

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| P220 | Keep/store away from clothing/combustible materials. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing. |

Potential Health Effects

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|-------------------|--|
| Eyes | Causes eye irritation. |
| Inhalation | Toxic if inhaled. Causes respiratory tract irritation. |
| Skin | May be harmful if absorbed through skin. Causes skin irritation. |
| Ingestion | Toxic if swallowed. |

NFPA Ratings

| | |
|------------------------|-----|
| Health | 2 |
| Flammability | 0 |
| Reactivity | 0 |
| Specific hazard | N/A |

HMIS Ratings

| | |
|-------------------|---|
| Health | 2 |
| Fire | 0 |
| Reactivity | 0 |
| Personal | E |

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | Weight % | CAS # | EINECS# / ELINCS# | Formula | Molecular Weight |
|----------------|----------|------------|-------------------|-----------------------------------|------------------|
| Barium Nitrate | 2-3 | 10022-31-8 | 233-020-5 | Ba(NO ₃) ₂ | 261.34 g/mol |
| Water | Balance | 7732-18-5 | 231-791-2 | H ₂ O | 18.00 g/mol |

4. FIRST-AID MEASURES

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|-------------------|--|
| Eyes | Rinse with plenty of water for at least 15 minutes and seek medical attention. |
| Inhalation | Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention. |
| Skin | Flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention. |
| Ingestion | Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention. |

5. FIRE-FIGHTING MEASURES

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| Suitable (and unsuitable) extinguishing media | Product is not flammable. Use appropriate media for adjacent fire. Cool containers with water. |
| Special protective equipment and precautions for firefighters | Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots. |
| Specific hazards arising from the chemical | Emits toxic fumes (barium oxides, nitrogen oxides) under fire conditions. (See also Stability and Reactivity section). |

6. ACCIDENTAL RELEASE MEASURES

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| Personal precautions, protective equipment and emergency procedures | See section 8 for recommendations on the use of personal protective equipment. |
| Environmental precautions | Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements. |

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| Methods and materials for containment and cleaning up | Absorb spill with noncombustible absorbent material, then place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations. |
|--|---|

7. HANDLING AND STORAGE

Precautions for safe handling

See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of aerosols.

Conditions for safe storage, including any incompatibilities

Store in cool, dry well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls:

| Component | Exposure Limits | Basis | Entity |
|---|-----------------------|-------|--------|
| Barium (7440-39-3) and soluble compounds, as Ba | 0.5 mg/m ³ | TLV | ACGIH |
| | 0.5 mg/m ³ | PEL | OSHA |
| | 0.5 mg/m ³ | REL | NIOSH |

TWA: Time Weighted Average over 8 hours of work.
 TLV: Threshold Limit Value over 8 hours of work.
 REL: Recommended Exposure Limit
 PEL: Permissible Exposure Limit
 STEL: Short Term Exposure Limit during x minutes.
 IDLH: Immediately Dangerous to Life or Health
 WEEL: Workplace Environmental Exposure Levels

Personal Protection

| | |
|-------------------|---|
| Eyes | Wear chemical safety glasses or goggles. |
| Inhalation | Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator. |
| Skin | Wear nitrile or rubber gloves, apron or lab coat. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. |
| Other | Not Available |

Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

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|--|--------------------------|
| Appearance (physical state, color, etc.) | Clear, colorless liquid. |
| Odor | Odorless.. |
| Odor threshold | Not Available |
| pH | Not Available |
| Melting point/freezing point | 590°C (1,094°F) |
| Initial boiling point and boiling range | Decomposes |
| Flash point | Not Flammable |

| | |
|---|------------------------------------|
| Evaporation rate | Not Available |
| Flammability (solid, gas) | Not Flammable |
| Upper/lower flammability or explosive limit | Not Flammable |
| Vapor pressure | Not Available |
| Vapor density | Not Available |
| Relative density | 1.02 g/cm ³ (water = 1) |
| Solubility (ies) | Partially soluble. |
| Partition coefficient: n-octanol/water | Not Available |
| Auto-ignition temperature | Not Available |
| Decomposition temperature | Not Available |

10. STABILITY AND REACTIVITY

| | |
|---|---|
| Chemical Stability | Stable |
| Possibility of Hazardous Reactions | Will not occur. |
| Conditions to Avoid | Not Available |
| Incompatible Materials | Acid anhydrides, acids, bases, reducing agents, organics and combustible materials. |
| Hazardous Decomposition Products | Nitrogen oxides, barium oxide. |

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

| | |
|--------------------|---------------|
| Skin | Not Available |
| Eyes | Not Available |
| Respiratory | Not Available |
| Ingestion | Not Available |

Carcinogenicity

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|--------------|--|
| IARC | No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. |
| ACGIH | No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. |
| NTP | No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. |
| OSHA | No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. |

Signs & Symptoms of Exposure

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|--------------------|---|
| Skin | Redness, itching |
| Eyes | Redness, tearing, itching, burning, conjunctivitis |
| Respiratory | Irritation of mucous membranes, coughing, wheezing, shortness of breath, |
| Ingestion | Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. |

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|---------------------------------------|---------------|
| Chronic Toxicity | Not Available |
| Teratogenicity | Not Available |
| Mutagenicity | Not Available |
| Embryotoxicity | Not Available |
| Specific Target Organ Toxicity | Not Available |
| Reproductive Toxicity | Not Available |
| Respiratory/Skin Sensitization | Not Available |

12. ECOLOGICAL INFORMATION

Ecotoxicity

| | |
|-----------------------------|---------------|
| Aquatic Vertebrate | Not Available |
| Aquatic Invertebrate | Not Available |
| Terrestrial | Not Available |

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|--------------------------------------|---------------|
| Persistence and Degradability | Not Available |
| Bioaccumulative Potential | Not Available |
| Mobility in Soil | Not Available |
| PBT and vPvB Assessment | Not Available |
| Other Adverse Effects | Not Available |

13. DISPOSAL CONSIDERATIONS

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|---------------------------|--|
| Waste Residues | Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residues. |
| Product Containers | Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product containers. |

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

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|------------------|---------------------|
| US DOT | Not Dangerous Goods |
| TDG | Not Dangerous Goods |
| IMDG | Not Dangerous Goods |
| Marine Pollutant | No |
| IATA/ICAO | Not Dangerous Goods |

15. REGULATORY INFORMATION

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|---------------------------|---|
| TSCA Inventory Status | All ingredients are listed on the TSCA inventory. |
| DSCL (EEC) | All ingredients are listed on the DSCL inventory. |
| California Proposition 65 | Not Listed |
| SARA 302 | Not Listed |
| SARA 304 | Not Listed |
| SARA 311 | Barium Nitrate |
| SARA 312 | Barium Nitrate |
| SARA 313 | Listed: Barium Nitrate |
| WHMIS Canada | Not Listed |

16. OTHER INFORMATION

| Revision | Date |
|------------|------------|
| Revision 1 | 01/08/2013 |
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