

## 1. Product and Company Identification

<b>Material name</b>	<b>BARIUM CHLORIDE DIHYDRATE</b>
<b>Version #</b>	03
<b>Revision date</b>	08-26-2011
<b>CAS #</b>	10326-27-9
<b>Product Codes</b>	<b>J.T.Baker: 0970, 0974</b> <b>Macron: 22505, 3756</b>
<b>Manufacturer</b>	Avantor Performance Materials, Inc.
<b>Address</b>	3477 Corporate Parkway Suite #200 Center Valley, PA 18034 US
<b>Customer Service</b>	855-282-6867
<b>24 Hour Emergency</b>	908-859-2151
<b>Chemtrec</b>	800-424-9300

## 2. Hazards Identification

<b>Emergency overview</b>	<b>WARNING</b>  Harmful if inhaled or swallowed. Causes eye irritation. Can cause cardiovascular effects. Prolonged exposure may cause chronic effects.
<b>OSHA regulatory status</b>	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
<b>Potential health effects</b>	
<b>Routes of exposure</b>	Ingestion. Inhalation. Skin contact. Eye contact.
<b>Eyes</b>	Causes eye irritation.
<b>Skin</b>	Dust or powder may irritate the skin.
<b>Inhalation</b>	Harmful if inhaled. Dust may irritate throat and respiratory system and cause coughing. Can cause cardiovascular effects.
<b>Ingestion</b>	Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Can cause cardiovascular effects.
<b>Target organs</b>	Eyes. Respiratory system. Heart and cardiovascular system. Kidneys. Gastrointestinal tract.
<b>Chronic effects</b>	May cause kidney damage based on animal data.
<b>Potential environmental effects</b>	Harmful to aquatic organisms.

## 3. Composition / Information on Ingredients

Components	CAS #	Percent
BARIUM CHLORIDE DIHYDRATE	10326-27-9	99 - 100

**Composition comments** CAS # 10326-27-9 can be described by the CAS # 10361-37-2.

## 4. First Aid Measures

<b>First aid procedures</b>	
<b>Eye contact</b>	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
<b>Skin contact</b>	Wash skin thoroughly with soap and water. Get medical attention if irritation develops or persists.
<b>Inhalation</b>	Move to fresh air. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration. Get medical attention immediately.

**Ingestion**

Call a physician or poison control center immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.

**Notes to physician**

Symptoms may be delayed. Treat symptomatically. Keep victim under observation.

**General advice**

In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

## 5. Fire Fighting Measures

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**Flammable properties**

The product is not flammable. No unusual fire or explosion hazards noted.

**Extinguishing media****Suitable extinguishing media**

Water spray. Carbon dioxide (CO<sub>2</sub>). Dry chemical powder. Foam.

**Unsuitable extinguishing media**

None known.

**Protection of firefighters****Specific hazards arising from the chemical**

Fire may produce irritating, corrosive and/or toxic gases.

**Protective equipment and precautions for firefighters**

Use water spray to cool unopened containers. Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Cool containers exposed to flames with water until well after the fire is out.

**Special protective equipment for fire-fighters**

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode when fighting fires.

**Specific methods**

In the event of fire and/or explosion do not breathe fumes.

## 6. Accidental Release Measures

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**Personal precautions**

Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

**Methods for cleaning up**

Avoid dust formation.

Large Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.

Small Spills: Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use. Clean up in accordance with all applicable regulations. Collect in a non-combustible container for prompt disposal.

## 7. Handling and Storage

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**Handling**

Wear appropriate personal protective equipment. Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Wash thoroughly after handling. Do not eat, drink or smoke when using the product. See Section 8 of the MSDS for Personal Protective Equipment.

**Storage**

Keep containers tightly closed. Keep container in a well-ventilated place.

## 8. Exposure Controls / Personal Protection

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**ACGIH****Material****Type****Value**

BARIUM CHLORIDE DIHYDRATE (10326-27-9)

TWA

0.5000 mg/m<sup>3</sup>

## Occupational exposure limits

### U.S. - OSHA

Material	Type	Value
BARIUM CHLORIDE DIHYDRATE (10326-27-9)	PEL	0.5000 mg/m <sup>3</sup>

## Engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

## Personal protective equipment

### Eye / face protection

Wear safety glasses with side shields (or goggles).

### Skin protection

Wear appropriate chemical resistant clothing. Wear appropriate chemical resistant gloves.

### Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: High-efficiency particulate respirator with full facepiece.

### General hygiene considerations

Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

### General

Wear chemical protective equipment that is specifically recommended by the manufacturer. Launder contaminated clothing before reuse.

## 9. Physical & Chemical Properties

Appearance	Solid.
Color	White.
Odor	Odorless.
Odor threshold	Not available.
Physical state	Solid.
Form	Solid.
pH	Not available.
Boiling point	2840 °F (1560 °C)
Flash point	Not available.
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor density	Not available.
Specific gravity	3.9
Relative density	Not available.
Solubility (water)	380 g/l
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available.
Molecular weight	244.27 g/mol
Molecular formula	BaCl <sub>2</sub> · 2H <sub>2</sub> O

## 10. Chemical Stability & Reactivity Information

Chemical stability	Stable under normal temperature conditions.
Conditions to avoid	Incompatible materials.

<b>Incompatible materials</b>	Oxidizing agents. Acids.
<b>Hazardous decomposition products</b>	Barium oxide. Hydrogen chloride.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.

## 11. Toxicological Information

### Toxicological data

Product	Test Results
BARIUM CHLORIDE DIHYDRATE (10326-27-9)	Acute Oral LD50 Rat: 118 mg/kg
<b>Sensitization</b>	Not a skin sensitizer.
<b>Acute effects</b>	Harmful if inhaled or swallowed. Can cause cardiovascular effects.
<b>Local effects</b>	Causes eye irritation.
<b>Chronic effects</b>	May cause kidney damage based on animal data.
<b>Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
<b>ACGIH Carcinogens</b>	
BARIUM CHLORIDE DIHYDRATE (CAS 10326-27-9)	A4 Not classifiable as a human carcinogen.
<b>Skin corrosion/irritation</b>	Not applicable.
<b>Epidemiology</b>	No epidemiological data is available for this product.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Reproductive effects</b>	Contains no ingredient listed as toxic to reproduction
<b>Teratogenicity</b>	No data available to indicate product or any components present at greater than 0.1% may cause birth defects.
<b>Symptoms and target organs</b>	Irritant effects. Circulatory collapse. Cough.
<b>Further information</b>	Symptoms may be delayed.

## 12. Ecological Information

### Ecotoxicological data

Product	Test Results
BARIUM CHLORIDE DIHYDRATE (10326-27-9)	EC50 Water flea (Daphnia magna): 14.5 mg/l 48.00 hours LC50 Mummichog (Fundulus heteroclitus): > 1000 mg/l 96.00 hours
<b>Ecotoxicity</b>	Harmful to aquatic life.
<b>Persistence and degradability</b>	Expected to be readily biodegradable.
<b>Partition coefficient (n-octanol/water)</b>	Not available

## 13. Disposal Considerations

<b>Waste codes</b>	D005: Waste Barium
<b>Disposal instructions</b>	Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. All wastes must be handled in accordance with local, state and federal regulations.
<b>Contaminated packaging</b>	Since emptied containers retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities.

## 14. Transport Information

### DOT

**Basic shipping requirements:**

UN number	UN1564
Proper shipping name	Barium compound, n.o.s. (BARIUM CHLORIDE)
Hazard class	6.1
Packing group	III

**Additional information:**

Special provisions IB8, IP3, T1, TP33

**Basic shipping requirements:**

Labels required 6.1

**Additional information:**

Packaging exceptions	153
Packaging non bulk	213
Packaging bulk	240
ERG number	154

### IATA

**Basic shipping requirements:**

UN number	1564
Proper shipping name	Barium compound, n.o.s. (BARIUM CHLORIDE)
Hazard class	6.1
Packing group	III

**Additional information:**

ERG code 6L

### IMDG

**Basic shipping requirements:**

UN number	1564
Proper shipping name	BARIUM COMPOUND, N.O.S. (BARIUM CHLORIDE)
Hazard class	6.1
Packing group	III



DOT



IATA



IMDG

## 15. Regulatory Information

### US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

This product is not listed on the U.S. EPA TSCA Inventory. Under TSCA, hydrates are considered mixtures of their anhydrous salt and water. Accordingly, the anhydrous form is subject to TSCA reporting requirements.

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration**

BARIUM CHLORIDE DIHYDRATE (CAS 10326-27-9) 1.0 % N040

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance**

BARIUM CHLORIDE DIHYDRATE (CAS 10326-27-9) Listed. N040

**CERCLA (Superfund) reportable quantity**

None

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**  
 Immediate Hazard - Yes  
 Delayed Hazard - Yes  
 Fire Hazard - No  
 Pressure Hazard - No  
 Reactivity Hazard - No

**Section 311 hazardous chemical**  
 Yes

**Safe Drinking Water Act (SDWA)**  
 2 mg/l

**Inventory status**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances SARA List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**State regulations** This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**US - New Jersey Community RTK (EHS Survey): Reportable threshold**

BARIUM CHLORIDE DIHYDRATE (CAS 10326-27-9) 500 LBS

**Saf-T-Data**  
 Health: 3 - Severe (Poison)  
 Flammability: 0 - None  
 Reactivity: 1 - Slight  
 Contact: 2 - Moderate  
 Lab Protective Equip: B - GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES  
 Storage Color Code: B - Blue (Health)

**16. Labeling Info**

<b>Label Hazard Warning</b>	<p>WARNING</p> <p>Harmful if inhaled or swallowed. Causes eye irritation. Can cause cardiovascular effects. Prolonged exposure may cause chronic effects.</p>
<b>Label Precautions</b>	Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.
<b>Label First Aid</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Flush skin thoroughly with water. If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. Get medical attention immediately. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not use mouth-to-mouth method if victim ingested the substance. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

## 17. Other Information

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**NFPA ratings**

Health: 3  
Flammability: 0  
Instability: 0

**Disclaimer**

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