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## SAFETY DATA SHEET

Section 1- IDENTIFICATION		
COMPOSITION <b>BaF2</b>		PRODUCT NAME <b>Barium Fluoride</b>
SUPPLIER: <b>Plasmaterials, Inc. 2268 Research Drive Livermore, CA 94550 Ph: 925-447-4030</b>	RECOMMENDED USE: <b>Laboratory Chemicals Scientific Research</b>	EMERGENCY TELEPHONE NUMBERS <b>US: 001-800-424-9300 Europe: 001-703-527-3887</b>

Section 2- HAZARD(S) IDENTIFICATION	
<b>HEALTH HAZARDS:</b> <b>Acute Toxicity (Oral):</b> Category 3 <b>Acute Toxicity (Inhalation):</b> Category 4 <b>Physical Hazards:</b> Not Classified <b>Environmental Hazards:</b> Not Classified <b>OSHA Defined Hazards:</b> Not Classified	<b>LABEL ELEMENTS:</b> <b>Signal Word: Danger</b>
<b>Hazard Statements:</b> Toxic if swallowed. Harmful if swallowed. Causes serious eye irritation. Harmful if inhaled. May cause respiratory irritation. Suspected of damaging fertility of the unborn child. Causes damage to organs (respiratory system) through prolonged or repeated exposure.	
	
<b>PRECAUTIONARY STATEMENTS</b> <b>Prevention:</b> -Obtain special instructions before use -Do not handle until all safety precautions have been read and understood -Use personal protective equipment as required -Do not breathe dust/fume/gas/mist/vapors/spray -Wash thoroughly after handling. Do not eat, drink or smoke when using this product. -Use only outdoors or in a well-ventilated area <b>Response:</b> -If swallowed: Immediately call a poison center/doctor. -If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. <b>Storage:</b> -Store locked up. -Store in a well-ventilated place. Keep container tightly closed <b>Disposal:</b> -Dispose of contents/container to an approved waste disposal plant in accordance with local, regional, national, and international regulations. <b>Hazards not otherwise classified (HNOC):</b> -None identified.	

### Section 3- COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS-No	Weight%
Barium Fluoride	7787-32-8	100

### Section 4- FIRST AID MEASURES

**GENERAL ADVICE:** In case of shortness of breath, give oxygen. In the case of accident or if you feel unwell, seek medical advice immediately. If exposed or concerned, get medical advice/attention. 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. Keep victim under observation. Keep victim warm.

**INHALATION:** Remove victim from exposure to fresh air and keep at rest in a position comfortable for breathing. Give oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Call a physician or poison control center immediately.

**SKIN CONTACT:** Remove and isolate contaminated clothing and shoes. Wash skin immediately with soap and plenty of water. Get medical attention if irritation develops or persists. Wash clothing separately before reuse.

**EYE CONTACT:** Do not rub eyes. Immediately flush eyes with plenty of water, lifting upper and lower lids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists.

**INGESTION:** Call a physician or poison control center immediately. Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content does not get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one way valve or other proper respiratory medical device.

**MOST IMPORTANT SYMPTOMS/EFFECTS:** Irritation of eyes and mucous membranes. Prolonged exposure may cause chronic effects.

**NOTES TO PHYSICIAN:** Provide general supportive measures and treat symptomatically. Oxygen, if needed. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

### Section 5- FIREFIGHTING MEASURES

**Suitable Extinguishing Media:**

Water Fog, Foam, Dry Chemical Powder, Carbon Dioxide (CO<sub>2</sub>)

**Unsuitable Extinguishing Media:**

No Information Available

**Flash Point:** No Information Available

**Method:** No Information Available

**Auto Ignition Temperature:** No Information Available

**Explosion Limits:**

**Upper:** No Data Available

**Lower:** No Data Available

**Sensitivity to Mechanical Impact:** No Information Available

**Sensitivity to Static Discharge:** No Information Available

**Specific Hazards Arising from the Chemical:**

During fire, gases hazardous to health may be found.

**Fire Fighting Equipment/Instructions:**

Use water spray to cool unopened containers.

**Protective Equipment & Precautions for Firefighters:**

As in any fire, Firefighters must wear full face, self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective clothing to prevent contact with skin and eyes.

## Section 6- ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Immediately evacuate personnel to safe areas. Keep unnecessary personnel away and away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Do not touch damaged containers or spilled materials unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see Section 8.

**Environmental Precautions:** Do not contaminate water. Avoid discharge into drains, water courses and onto the ground.

**Methods for Containment & Clean Up:** Avoid dispersal of the dust in the air. Stop the flow of material, if this is without risk. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place in containers.

-Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

-Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

-Never return spills to original containers for re-use. For waste disposal, see Section 13.

## Section 7- HANDLING AND STORAGE

**Handling:** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Avoid breathing dust. Avoid contact during pregnancy/while nursing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Wear appropriate personal protection equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

**Storage:** Store locked up. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10)

## Section 8- EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Guidelines:

Component	CAS-No	OSHA PEL
Barium Fluoride	7787-32-8	TWA: 2.5 mg/m <sup>3</sup> (Form: Dust)

### Control Parameters:

Follow standard monitoring procedures.

### Personal Protective Equipment:

**Eye/Face Protection:** Wear appropriate protective eyeglasses or chemical safety goggles with side shields.

**Skin and Body Protection:** Wear appropriate chemical resistant gloves to prevent skin exposure. Suitable gloves can be recommended by the glove supplier. Wear chemical protective equipment that is specifically recommended by the manufacturer. Use of an impervious apron is recommended. It may provide little or no thermal protection. Wear appropriate thermal protective clothing, when necessary.

**Respiratory Protection:** In case of insufficient ventilation, wear suitable respiratory equipment. Chemical respirator with organic vapor cartridge.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety practice. Keep away from food and drink. Wash thoroughly after handling and before eating, drinking and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## Section 9- PHYSICAL AND CHEMICAL PROPERTIES

**Physical State:** Solid

**Appearance:** Not Available

**Odor:** Not Applicable

**Odor Threshold:** No information available

**pH:** No information available

**Melting Point/Range:** No information available  
**Boiling Point/Range:** Not Applicable  
**Flash Point:** No information available  
**Evaporation Rate:** No information available  
**Flammability (solid,gas):** No information available  
**Flammability or Exposure Limits:**  
     **Upper:** No data available  
     **Lower:** No data available  
**Vapor Pressure:** <0.0000001 kPa @ 25°C  
**Vapor Density:** No information available  
**Relative Density:** No information available  
**Solubility:** No information available  
**Partition coefficient; n-octanol/water:** No information available  
**Auto Ignition Temperature:** Not Applicable  
**Decomposition Temperature:** No information available  
**Viscosity:** No information available  
**Molecular Formula:** BaF2  
**Molecular Weight:** 175.32 g/mol

## Section 10- STABILITY AND REACTIVITY

**Reactive Hazard:** The product is stable and non-reactive under normal conditions of use, storage and transport.

**Stability:** Stable under normal conditions.

**Conditions to Avoid:** Contact with incompatible products.

**Incompatible Materials:** None Known

**Hazardous Decomposition Products:** No hazardous decomposition products are known

**Hazardous Reactions:** No dangerous reaction known under conditions of normal use

## Section 11- TOXICOLOGICAL INFORMATION

### Information on likely Routes of Exposure:

**Inhalation:** Harmful if inhaled.

**Skin Contact:** Due to lack of data the classification is not possible

**Eye Contact:** Causes serious eye irritation

**Ingestion:** Toxic if swallowed

### Information on Toxicological Effects:

**Acute Toxicity:** In high concentrations, vapors are anesthetic and may cause headache, fatigue, dizziness and central nervous system effects. Toxic if swallowed. Harmful if inhaled. May respiratory irritation.

**Skin Corrosion/Irritation:** No information available

**Serious Eye Damage/Eye Irritation:** Causes serious eye irritation

**Respiratory Sensitization:** No information available

**Skin Sensitization:** No information available

### Carcinogenicity:

Component	CAS-No	IARC	NTP	ACGIH	OSHA
Barium Fluoride	7440-36-0	Not Listed	Not Listed	Not Listed	Not Listed

**Mutagenic Effects:** No information available

**Reproductive Effects:** Suspected of damaging fertility or the unborn child.

**STOT – single exposure:** Respiratory tract irritation

**STOT – repeated exposure:** Causes damage to organs through prolonged or repeated exposure

**Aspiration Hazard:** No information available

**Chronic Effects:** Causes damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful.

## Section 12- ECOLOGICAL INFORMATION

**Ecotoxicity:** Contains a substance which causes risk of hazardous effects to the environment

**Persistence and Degradability:** No data available

**Bioaccumulation/Accumulation:** No data available

**Mobility:** No data available

**Other Adverse Effects:** No other adverse environmental effects are expected from this component.

## Section 13- DISPOSAL CONSIDERATIONS

**Waste Disposal Methods:** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. Do not allow this material to drain into sewers/water supplies. Dispose of contents/containers in accordance with local, regional, national and international hazardous waste regulations.

## Section 14- TRANSPORT INFORMATION

### DOT:

**UN-No:** UN1564

**Proper Shipping Name:** Barium Compounds, n.o.s.

**Hazard Class:** 6.1

**Packing Group:** III

**Special Precautions for User:** Read safety instructions, SDS and emergency procedures before handling.

**Special Provisions:** IB8, IP3, T1, TP33

**Packaging Exceptions:** 153

**Packaging Non Bulk:** 213

**Packaging Bulk:** 240



### IATA:

**UN-No:** UN1564

**Proper Shipping Name:** Barium compounds, n.o.s.

**Hazard Class:** 6.1

**Packing Group:** III

**Environmental Hazards:** No

**Special Precautions for User:** Read safety instructions, SDS and emergency procedures before handling.

**Passenger & Cargo Aircraft:** Forbidden

**Cargo Aircraft Only:** Forbidden



### IMDG:

**UN-No:** UN1564

**Proper Shipping Name:** Barium compounds, n.o.s.

**Hazard Class:** 6.1

**Packing Group:** III

**Environmental Hazards:** No

**Marine Pollutant:** No

**EmS:** Not Available

**Special Precautions for User:** Read safety instructions, SDS and emergency procedures before handling.



## Section 15- REGULATORY INFORMATION

**US Federal Regulations:** All components are on the U.S. EPA TSCA Inventory List. This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Section 12(b):** Not regulated

**U.S. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):** Not Listed

**SARA 302 Extremely Hazardous Substance:** Not Listed

**SARA 313 (TRI reporting):**

Component	CAS-No	% by Weight
Barium Fluoride	7787-32-8	100

**SARA 311/312 Hazardous Chemical:** Yes

**SARA Hazard Categories:**

**Immediate Hazard:** Yes

**Delayed Hazard:** No

**Fire Hazard:** No

**Pressure Hazard:** No

**Reactive Hazard:** No

**Safe Drinking Water Act (SWDA):** Not regulated

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List:** Not regulated

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):** Not regulated

**CERCLA Hazardous Substance List (40 CFR 302.4):** Listed

**US California Proposition 65:** California Safe Drinking Water and Toxic Enforcement Act of 1986: This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**US California Controlled Substances. CA Dept of Justice (California Health & Safety Code Section 11100):** Not Listed

**US Massachusetts RTK – Substance List:** Not regulated

**US New Jersey Worker & Community Right-to-Know Act:** Barium Fluoride (CAS 7787-32-8)

**US Pennsylvania RTK – Hazardous Substances:** Barium Fluoride (CAS 7787-32-8)

**US Pennsylvania Worker & Community Right-to-Know Law:** Barium Fluoride (CAS 7787-32-8)

**US Rhode Island RTK:** Barium Fluoride (CAS 7787-32-8)

## Section 16- OTHER INFORMATION

The above information is accurate to the best of our knowledge. However, since data, safety standards and government regulations are subject to change, the conditions of handling and use, or misuse are beyond our control, Plasmaterials, Inc. makes no warranty, either expressed or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. Users should satisfy themselves that they have all current data relevant to their particular use.

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The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

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