**Section 1 - PRODUCT AND COMPANY IDENTIFICATION**

**Material Name:** BARIUM FLUORIDE

**Manufacturer Information**
BASSTECH INTERNATIONAL LLC
400 Kelby St.
Fort Lee, NJ 07024
Phone: (201) 569-8686
Fax: (201) 569-7511
Emergency #: CHEMTREC: 800-424-9300
Email: info@basstechintl.com

**Chemical Family**
inorganic, salt

**Synonyms**
BARIUM DIFLUORIDE; BARIUM FLUORIDE (BAF2); BAF2; RTECS: CQ9100000

**Section 2 - HAZARDS IDENTIFICATION**

**EMERGENCY OVERVIEW**
- **Color:** colorless to white
- **Physical Form:** crystalline powder
- **Odor:** odorless
- **Health Hazards:** harmful if swallowed

**POTENTIAL HEALTH EFFECTS**

**Inhalation**
- **Short Term:** same as effects reported in other routes of exposure, irritation (possibly severe), nausea, difficulty breathing, asthma, lung congestion
- **Long Term:** same as effects reported in long term ingestion, lung damage

**Skin**
- **Short Term:** same as effects reported in short term ingestion, irritation (possibly severe)
- **Long Term:** same as effects reported in short term exposure

**Eye**
- **Short Term:** irritation (possibly severe)
- **Long Term:** same as effects reported in short term exposure

**Ingestion**
- **Short Term:** burns, rash, metallic taste, ringing in the ears, digestive disorders, difficulty breathing, irregular heartbeat, headache, drowsiness, dizziness, tingling sensation, visual disturbances, dilated pupils, bluish skin color, kidney damage, paralysis, convulsions, coma
- **Long Term:** no information on significant adverse effects

**Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS**
** **Section 4 - FIRST AID MEASURES** **

**Inhalation**
If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

**Skin**
Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

**Eyes**
Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

**Ingestion**
If a large amount is swallowed, get medical attention.

**Antidote**
calcium gluconate, intravenous; milk of magnesia. sodium sulfate solution, oral, gastric tube; potassium.

** **Section 5 - FIRE FIGHTING MEASURES** **

See Section 9 for Flammability Properties

**NFPA Ratings: Health: 2 Fire: 0 Reactivity: 0**

**Flammable Properties**
Negligible fire hazard.

**Extinguishing Media**
Use extinguishing agents appropriate for surrounding fire.

**Fire Fighting Measures**
Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

** **Section 6 - ACCIDENTAL RELEASE MEASURES** **

**Occupational spill/release**
Collect spilled material in appropriate container for disposal.

** **Section 7 - HANDLING AND STORAGE** **

**Handling Procedures**
Use methods to minimize dust.
Material Name: BARIUM FLUORIDE

**Storage Procedures**

Store and handle in accordance with all current regulations and standards. Store in a tightly closed container. Store in a cool, dry place. Store in a well-ventilated area. Keep separated from incompatible substances.

**Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Component Exposure Limits**

<table>
<thead>
<tr>
<th>Component</th>
<th>Exposure Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>BARIUM FLUORIDE</td>
<td></td>
</tr>
<tr>
<td>ACGIH:</td>
<td>2.5 mg/m$^3$ TWA (as F, related to Fluorides)</td>
</tr>
<tr>
<td>OSHA:</td>
<td>2.5 mg/m$^3$ TWA (as F); 2.5 mg/m$^3$ TWA (dust, related to Fluorides)</td>
</tr>
<tr>
<td>OSHA (Vacated):</td>
<td>2.5 mg/m$^3$ TWA (related to Fluorides)</td>
</tr>
</tbody>
</table>

**Biological Limit Values**

Biological Limit Values have not developed for any of component(s) of this material.

**IDLH**

250 mg/m$^3$ 1100 %2U%

**Ventilation**

Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

**PERSONAL PROTECTIVE EQUIPMENT**

**Eyes/Face**

Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

**Protective Clothing**

Wear appropriate chemical resistant clothing.

**Glove Recommendations**

Wear appropriate chemical resistant gloves.

**Respiratory Protection**

Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.

**Measurement Element:**

Barium (Ba)

5 mg/m$^3$

Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100 or P100.

Any supplied-air respirator.

12.5 mg/m$^3$

Any supplied-air respirator operated in a continuous-flow mode.

Any powered, air-purifying respirator with a high-efficiency particulate filter.

25 mg/m$^3$

Any air-purifying, full-facepiece respirator equipped with an N100, R100, or P100 filter.

Any supplied-air respirator with a tight-fitting facepiece that is operated in a continuous-flow mode.
Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter.
Any self-contained breathing apparatus with a full facepiece.
Any supplied-air respirator with a full facepiece.
50 mg/m³
Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode.
Emergency or planned entry into unknown concentrations or IDLH conditions -
Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.
Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.
Escape -
Any air-purifying, full-facepiece respirator equipped with an N100, R100, or P100 filter.
Any appropriate escape-type, self-contained breathing apparatus.

For Unknown Concentrations or Immediately Dangerous to Life or Health -
Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.
Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

** *Section 9 - PHYSICAL AND CHEMICAL PROPERTIES* **

<table>
<thead>
<tr>
<th>Physical State:</th>
<th>Solid</th>
<th>Appearance:</th>
<th>Not available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color:</td>
<td>colorless to white</td>
<td>Physical Form:</td>
<td>crystalline powder</td>
</tr>
<tr>
<td>Odor:</td>
<td>odorless</td>
<td>Odor Threshold:</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting Point:</td>
<td>1280 - 1355 °C</td>
<td>Boiling Point:</td>
<td>2137 °C</td>
</tr>
<tr>
<td>Vapor Pressure:</td>
<td>Not applicable</td>
<td>Vapor Density (air = 1):</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Density:</td>
<td>Not available</td>
<td>Specific Gravity (water = 1):</td>
<td>4.89</td>
</tr>
<tr>
<td>Water Solubility:</td>
<td>0.12 %</td>
<td>Coeff. Water/Oil Dist:</td>
<td>Not available</td>
</tr>
<tr>
<td>Molecular Weight:</td>
<td>175.32</td>
<td>Molecular Formula:</td>
<td>BA-F₂</td>
</tr>
</tbody>
</table>

Solvent Solubility

Soluble: hydrochloric acid, nitric acid, hydrofluoric acid, ammonium chloride solutions, ammonium chloride solutions

** *Section 10 - STABILITY AND REACTIVITY* **

Chemical Stability

Stable at normal temperatures and pressure.

Conditions to Avoid

None reported.
Materials to Avoid
- acids, oxidizing materials

Decomposition Products
- acid halides, oxides of barium

Possibility of Hazardous Reactions
- Will not polymerize.

***Section 11 - TOXICOLOGICAL INFORMATION***

Component Analysis - LD50/LC50
The components of this material have been reviewed in various sources and no selected endpoints have been identified.

RTECS Acute Toxicity (selected)
The components of this material have been reviewed, and RTECS publishes the following endpoints:

**BARIUM FLUORIDE (7787-32-8)**
- Oral: 250 mg/kg Oral Rat LD50; 250 mg/kg Oral Rat LD50

Acute Toxicity Level
- **BARIUM FLUORIDE (7787-32-8)**
  - Toxic: ingestion

Component Carcinogenicity
- **BARIUM FLUORIDE (7787-32-8)**
  - ACGIH: A4 - Not Classifiable as a Human Carcinogen (related to Fluorides)

RTECS Irritation
The components of this material have been reviewed and RTECS publishes no data as of the date on this document.

Medical Conditions Aggravated by Exposure
- central nervous system disorders, bone, joint or tooth disorders, eye disorders, kidney disorders, respiratory disorders, skin disorders and allergies

RTECS Tumorigenic
No data available.

RTECS Mutagenic
No data available.

RTECS Reproductive Effects
The components of this material have been reviewed, and RTECS publishes the following endpoints:

**BARIUM FLUORIDE (7787-32-8)**
- 656 mg/kg Intraperitoneal Mouse TDLo (pregnant 1-21 day(s)); 525 mg/kg Intraperitoneal Mouse TDLo (pregnant 1-21 day(s)); 5660 ug/m3 Inhalation Rat TCLo (24 hour, pregnant 1-21 day(s))

Additional Data
- May cross the placenta. May be excreted in breast milk.
**Section 12 - ECOLOGICAL INFORMATION**

Component Analysis - Aquatic Toxicity
No LOLI ecotoxicity data are available for this product's components.

**Section 13 - DISPOSAL CONSIDERATIONS**

Disposal Methods
Dispose in accordance with all applicable regulations. Hazardous Waste Number(s): D005. Dispose of in accordance with U.S. EPA 40 CFR 262 for concentrations at or above the Regulatory level. Regulatory level-100.0 mg/L.

Component Waste Numbers
The U.S. EPA has not published waste numbers for this product's components.

**Section 14 - TRANSPORT INFORMATION**

US DOT Information
No Classification assigned.

TDG Information
No Classification assigned.

ADR Information
No Classification assigned.

RID Information
No Classification assigned.

IATA Information
No Classification assigned.

ICAO Information
No Classification assigned.

IMDG Information
No Classification assigned.

**Section 15 - REGULATORY INFORMATION**

U.S. Federal Regulations
This material contains one or more of the following chemicals required to be identified under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

BARIUM FLUORIDE (7787-32-8)

SARA 313: 1.0 % de minimis concentration (does not include Barium sulfate CAS 7727-43-7, Chemical Category N040, related to Barium compounds, n.o.s.)

SARA 311/312
Acute Health: Yes Chronic Health: Yes Fire: No Pressure: No Reactive: No
U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>CA</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>BARIUM FLUORIDE ('related to: Fluorides)</td>
<td>7787-32-8</td>
<td>Yes¹</td>
<td>No</td>
<td>Yes¹</td>
<td>Yes¹</td>
<td>Yes¹</td>
</tr>
</tbody>
</table>

Not regulated under California Proposition 65

Canadian Regulations

Canadian WHMIS Ingredient Disclosure List (IDL)

Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which fall under WHMIS criteria specified in the Controlled Products Regulations and present above the threshold limits listed on the IDL.

BARIUM FLUORIDE (7787-32-8)

1%

EU Marking and Labelling

Symbols

Xn Harmful

Risk Phrases

R20/22 Harmful by inhalation and if swallowed.

Safety Phrases

S2 Keep out of the reach of children.
S13 Keep away from food, drink and animal feedingstuffs.
S24 Avoid contact with skin.
S36 Wear suitable protective clothing.
S46 If swallowed, seek medical advice immediately and show this container or label.

Germany Water Classification

BARIUM FLUORIDE (7787-32-8)

ID Number 4092, hazard class 1 - low hazard to waters

Component Analysis - Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>US</th>
<th>CA</th>
<th>EU</th>
<th>AU</th>
<th>PH</th>
<th>JP</th>
<th>KR</th>
<th>CN</th>
<th>NZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>BARIUM FLUORIDE</td>
<td>7787-32-8</td>
<td>Yes</td>
<td>DSL</td>
<td>EIN</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
**Section 16 - OTHER INFORMATION**

**Key / Legend**

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

**Component Analysis**

R20/22 Harmful by inhalation and if swallowed.

**Other Information**

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End of Sheet BTI02400