MATERIAL SAFETY DATA SHEET

Section 1- PRODUCT IDENTIFICATION

<table>
<thead>
<tr>
<th>COMPOSITION</th>
<th>PRODUCT NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>CeF³</td>
<td>Cerium Fluoride, Ceros Fluoride &amp; Cerium Tri-Fluoride</td>
</tr>
</tbody>
</table>

Section 2- HAZARDOUS INGREDIENTS

Note: Products under normal conditions do not represent an inhalation, ingestion or contact health hazard.

<table>
<thead>
<tr>
<th>MATERIAL OR COMPONENT</th>
<th>CAS NUMBER</th>
<th>WT%</th>
<th>OSHA PEL (Mg/M³)</th>
<th>ACGIH TLV (MG/M³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CeF³</td>
<td>7758-88-5</td>
<td>100%</td>
<td>2.5mg/m³ (as F)</td>
<td>2.5mg/m³ (as F)</td>
</tr>
</tbody>
</table>

Section 3- PHYSICAL DATA

<table>
<thead>
<tr>
<th>MATERIAL IS (AT NORMAL CONDITIONS)</th>
<th>APPERANCE AND ODOR</th>
<th>MELTING POINT (BASE METAL)</th>
<th>SPECIFIC GRAVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Liquid □ Solid □ Gas □ Other</td>
<td>White hexagonal crystals. Odorless.</td>
<td>1460°C</td>
<td>6.16gm/cc</td>
</tr>
</tbody>
</table>

Section 4- FIRE AND EXPLOSION

<table>
<thead>
<tr>
<th>Flash Point (Method Used)</th>
<th>Flammable Limits</th>
<th>LEL</th>
<th>UEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>Non Flammable</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

EXTINGUISHING MEDIA

Dry chemical- (Co²)

SPECIAL FIRED FIGHTING PROCEDURES

Wear a self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes.

UNUSUAL FIRE AND EXPLOSION HAZARDS

When heated to decomposition it emits toxic fumes of F.

Section 5- REACTIVITY DATA

<table>
<thead>
<tr>
<th>STABILITY</th>
<th>INCOMPATABILITY (MATERIALS TO AVOID)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable</td>
<td>None</td>
</tr>
</tbody>
</table>

CONDITIONS TO AVOID

Heat and flame

HAZARDOUS DECOMPOSITION PRODUCTS

May emit highly toxic fumes of F; if comes in contact with strong acids or it is heated to decomposition.
Section 6- HEALTH HAZARD GUIDE

MAJOR EXPOSURE HAZARD
☐ Inhalation  ☐ Skin  ☐ Skin Absorption  ☐ Eye Contact  ☐ Ingestion

EFFECTS OF OVEREXPOSURE

INHALATION: Inhalation of CeF³ may be irritation to the respiratory tract. Inorganic fluorides are generally highly irritating and toxic. Inhalation may cause irritation to the mucous membrane and respiratory tract.

DERMAL/EYE CONTACT: CeF³ may be mechanically irritation the skin and eyes. It may cause redness and watering of the eyes.

OTHER: Acute effects resulting from exposure to fluorine compounds are due to the hydrogen fluorine. Chronic exposure may cause “fluorosis”, which consists of sclerosis of the bones, caused by fixation of the calcium by fluorine. There may also be some calcification of the ligaments. It may cause osteosclerosis and osteomalacia. Large doses can cause very severe vomiting, nausea, diarrhea, abdominal burning and cramp like pains. It can cause or aggravate attacks of asthma; can cause severe bone changes, making normal movement more painful. Some signs of pulmonary fibrosis are noted. Also, loss of weight, anorexia, anemia, waiting and cachexia, and dental defects are common in fluorine poisoning. Symptoms of intoxication include gastric, intestinal, circulatory, respiratory, nervous complaints and skin rashes.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Respiratory disorders

EMERGENCY & FIRST AID PROCEDURES

INHALATION: Remove from exposed area to fresh air immediately and give oxygen if breathing is difficult. Seek medical attention.

EYE CONTACT: Wash eyes immediately with water occasionally lifting upper and lower lids.

INGESTION: Give 1-2 glasses of milk or water to induce vomiting.

SKIN CONTACT: Brush off skin and wash area with soap and water.

Section 7- SPILL OR LEAK PROCEDURES

SPILL OR LEAK PROCEDURES

Wear a self-contained breathing apparatus and full protective clothing. Isolate the area of the spill and insure proper ventilation. Vacuum up spill using high efficiency unit and place in container for proper disposal. Do not raise dust during clean up.

WASTE DISPOSAL METHODS

Dispose of in accordance with applicable Federal, State & Local regulations.

Section 8- SPECIAL PROTECTION

RESPIRATORY

Wear NIOSH-approved dust-mist-fume cartridge respirator.

VENTILATION

Local exhaust: maintain exposure below TLV level for F. Mechanical ventilation recommended. Handle in a controlled environment.

EYE PROTECTION & PROTECTIVE CLOTHING

Wear safety glasses, neoprene gloves and protective clothing to prevent contamination of skin and clothes.

Section 9- SPECIAL PRECAUTIONS

Store in tightly closed containers in a cool, dry place. Wash hands and face thoroughly after handling and before eating.

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