Material Safety Data Sheet

Section 1- PRODUCT IDENTIFICATION

COMPOSITION
MgF2

PRODUCT NAME
Magnesium Fluoride; Magnesium Flux; Afluon; irtran 1; Sellaite

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>EXPOSURE LIMITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium Fluoride</td>
<td>7783-40-6</td>
<td>0.0-100.0</td>
<td>2.5mg(F)/m³, 2.5mg(F)/m³</td>
</tr>
</tbody>
</table>

Section 3- PHYSICAL DATA

MATERIAL IS (AT NORMAL CONDITIONS)
- Liquid
- Solid
- Gas
- Other

APPERANCE AND ODOR
White powder or pieces, no odor

MELTING POINT (BASE METAL)
1396.0 °C

SPECIFIC GRAVITY
2.9-3.2gm/cc

Section 4- FIRE AND EXPLOSION

Flash Point (Method Used)
N/A

Flammable Limits
- LEL
- UEL
- Non Flammable
- N.A.
- N.A.

EXTINGUISHING MEDIA
Use suitable extinguishing media for surrounding materials and type of fire.

SPECIAL FIRED FIGHTING PROCEDURES
Wear a full face, self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

UNUSUAL FIRE AND EXPLOSION HAZARDS
When heated to decomposition, magnesium fluoride may emit toxic fumes of fluorine and magnesium oxide.
### Section 5- REACTIVITY DATA

<table>
<thead>
<tr>
<th>STABILITY</th>
<th>INCOMPATABILITY (MATERIALS TO AVOID)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable</td>
<td>Strong Acids</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CONDITIONS TO AVOID</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HAZARDOUS DECOMPOSITION PRODUCTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fumes of fluorine and magnesium oxide</td>
</tr>
</tbody>
</table>

### Section 6- HEALTH HAZARD GUIDE

**MAJOR EXPOSURE HAZARD**
- Inhalation  
- Skin  
- Skin Absorption  
- Eye Contact  
- Ingestion

**EFFECTS OF OVEREXPOSURE**

To the best of our knowledge the chemical, physical and toxicological properties of magnesium fluoride have not been thoroughly investigated and recorded.

Magnesium compounds have variable toxicity. There is no evidence that magnesium produces true systemic poisoning. Particles of metallic magnesium or magnesium alloy which perforate the skin or gain entry through cuts and scratches may produce a severe local lesion characterized by the evolution of gas and acute inflammatory reaction, frequently with necrosis. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Inorganic fluorides are generally highly irritating and toxic. Chronic fluorine poisoning, or "fluorosis", occurs among miners of cryolite, and consists of sclerosis of the bones, caused by fixation of the calcium by fluorine. There may also be some calcification of the ligaments. The teeth are mottled, and there is osteosclerosis and osteomalacia. Large doses can cause very severe nausea, vomiting, diarrhea, aggravated attacks of asthma and severe bone changes, making normal movements painful. Some signs of pulmonary fibrosis are noted. Some enzyme system effects are reported. Irritants of the eyes, skin and mucous membranes. Loss of weight, anorexia, anemia, wasting and cachexia and dental defects are among the common findings in chronic fluorine poisoning. There may be an eosinophilia and impairment of growth in young workers. Symptoms of intoxication include gastric, intestinal, circulatory, respiratory and nervous complaints ad rashes. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

**INHALATION:** 
- **ACUTE:** May cause irritation to the respiratory tract and mucous membrane, asthma attacks, excessive salivation, thirst, sweating, vomiting, colic diarrhea and lung granulomas. **CHRONIC:** May cause fluorosis, pulmonary fibrosis and severe bone changes.

**SKIN CONTACT:** 
- **ACUTE:** May cause irritation, rashes and skin granulomas. **CHRONIC:** May cause dermatitis.

**EYE CONTACT:** 
- **ACUTE:** May cause irritation. **CHRONIC:** None recorded

**INGESTION:** 
- **ACUTE:** Moderately toxic by ingestion. May cause gastrointestinal irritation, severe nausea, vomiting, diarrhea, dehydration and thirst, muscle weakness, lethargy, cramp-like pains and central nervous system depression. **CHRONIC:** May affect the circulatory, enzyme and nervous system.

**TARGET ORGANS:** May affect the skeleton, kidneys, central nervous system, respiratory system, skin and eyes.

**CARCINOGENICITY:** NTP? N  IARC Monographs? N  OSHA Regulated? N

**SIGNS AND SYMPTOMS OF EXPOSURE:**

**INHALATION:** May cause coughing, burning sensation, excessive salivation, vomiting, thirst, sweating, colic and diarrhea. Fibrosis may cause: sclerosis of the bones, calcification of ligaments, mottled teeth, osteosclerosis, osteomalacia, loss of weight, anorexia, anemia, wasting, cachexia and dental defects.

**INGESTIONS:** May cause nausea, vomiting, diarrhea, abdominal burning, cramp-like pain, a stiff spine, calcification of ligaments of the ribs and pelvis.
**SKIN:** May cause redness, itching and burning  
**EYE:** May cause redness, itching, burning and watering  
**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:** Can cause or aggravate attacks of asthma.

**EMERGENCY & FIRST AID PROCEDURES**

**INHALATION:** Remove from exposed area to fresh air immediately; keep warm and quiet; give oxygen if breathing is difficult. Seek medical attention.  
**SKIN CONTACT:** Remove contaminated clothing; brush material off skin; wash affected area with soap and large amounts of water until no evidence of the chemical remains. Seek medical attention.  
**EYE CONTACT:** Flush eyes with lukewarm water for fifteen minutes. Seek medical attention.  
**INGESTION:** Give 1-2 cups of milk or water and induce vomiting. Seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

**Section 7- SPILL OR LEAK PROCEDURES**

**SPILL OR LEAK PROCEDURES**

Wear a self-contained breathing apparatus and full protective clothing. Isolate the area where the spill occurred and insure proper ventilation if available. Vacuum up the spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

**WASTE DISPOSAL METHODS**

Observe all federal, state and local regulations when storing or disposing of this substance.

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:**

**Hazard Label Information:** Store in cool, dry area; Store in tightly sealed container; Wash thoroughly after handling.

**Section 8- SPECIAL PROTECTION**

**RESPIRATORY**

Wear NIOSH/MSHA-approved respirator.

**VENTILATION**

Local exhaust: To maintain concentration at or below PEL, TLV. Mechanical (General) recommended.

**EYE PROTECTION & PROTECTIVE CLOTHING**

Wear Safety glasses for eyes. Wear neoprene gloves on hands. Wear protective clothing to prevent contamination of skin and clothes.

**WORK/HYGIENIC/MAINTENANCE PRACTICES**

Implement engineering and work place practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.

**Section 9- SPECIAL PRECAUTIONS**

Some of the chemicals listed herein are research or experimental substances which may be toxic, as defined by various governmental regulations. In accordance with Environmental Protection Agency regulations and the Toxic Substance Control Act (TSCA), these materials should only be handled by, or under the direct supervision of, a “technically qualified individual”, as defined in 40 CFR 710.2(aa).
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