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## SAFETY DATA SHEET

Section 1- IDENTIFICATION		
COMPOSITION <b>MgF2</b>		PRODUCT NAME <b>Magnesium 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>Classification:</b> This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)	
<b>Skin Irritation:</b> Category 2 (H315)	<b>Eye Irritation:</b> Category 2A (H319)
<b>Specific Target Organ Toxicity, Single Exposure:</b> Category 3 (H335)	
<b>LABEL ELEMENTS:</b>	
<b>Signal Word:</b> Warning	
<b>Hazard Symbol:</b>	
	
<b>HAZARD STATEMENTS</b>	
-H315: Causes skin irritation	
-H319: Causes serious eye irritation	
-H335: May causes respiratory irritation	
<b>PRECAUTIONARY STATEMENTS</b>	
-P261: Avoid breathing dust, fume, gas, mist, vapors, spray	
-P264: Wash face, hands and any exposed skin thoroughly after handling	
-P270: Do not eat, drink or smoke when using this product	
-P280: Wear protective gloves, protective clothing, eye protection, face protection	
-P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing	
-P305+P351+P338: IF IM EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.	
-P405: Store locked up	
-P420: Store away from other materials	
-P501: Dispose of contents/container to an approved waste disposal plant	
<b>Hazards not otherwise classified (HNOC):</b>	
-None identified.	

Section 3- COMPOSITION/INFORMATION ON INGREDIENTS		
<b>COMPONENT</b>	<b>CAS-No</b>	<b>Molecular Weight</b>
<b>Magnesium Fluoride</b>	<b>7783-40-6</b>	<b>62.30 g/mol</b>

## Section 4- FIRST AID MEASURES

**Inhalation:** Remove victim from exposure to fresh air. Give oxygen if breathing is difficult. If not breathing, give artificial respiration. Consult a physician.

**Skin Contact:** First treatment with calcium gluconate paste. Wash off with soap and plenty of water while removing all contaminated clothes and shoes. Consult a physician.

**Eye Contact:** Do not rub eyes. Flush eyes with lukewarm water, lifting upper and lower lids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Consult a physician if irritation develops or persists.

**Ingestion:** Rinse mouth with water. Never give anything by mouth to an unconscious person. Consult a physician if irritation develops or persists.

**Most Important Symptoms/Effects:** The most important known symptoms and effects are described in the labeling (see section 2) and/or in section 11.

**General Advice:** Hydrofluoric (HF) acid burns require immediate and specialized first aid and medical treatment. Symptoms may be delayed up to 24 hours depending on the concentration of HF. After decontamination with water, further damage can occur due to penetration/absorption of the fluoride ion. Treatment should be directed toward binding the fluoride ion as well as the effects of exposure. Skin exposures can be treated with a 2.5% calcium gluconate gel/paste repeated until burning ceases. More serious skin exposures may require subcutaneous calcium gluconate except for digital areas unless the physician is experienced in this technique, due to potential for tissue injury from increased pressure. Absorption can readily occur through the subungual areas and should be considered when undergoing decontamination. Prevention of absorption of the fluoride ion in cases of ingestion can be obtained by giving milk, chewable calcium carbonate tablets or Milk of Magnesia to conscious victims. Conditions such as hypocalcemia, hypomagnesemia and cardiac arrhythmias should be monitored for, since they can occur after exposure. Consult a physician. Show this safety data sheet to the doctor in attendance.

## Section 5- FIREFIGHTING MEASURES

### Suitable Extinguishing Media:

Water Spray, Alcohol-Resistant Foam, Dry Chemical, Carbon Dioxide (CO<sub>2</sub>)

### Unsuitable Extinguishing Media:

No Data Available

### Specific Hazards Arising from the Chemical:

If this product is involved in a fire, the following can be released: Hydrogen Fluoride (HF)

### General Fire Hazards:

No unusual fire or explosion hazards noted.

### 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.

### Specific Methods:

Use water spray to cool unopened containers. Use standard firefighting procedures and consider the hazards of other involved materials.

## Section 6- ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Avoid dust formation. Avoid breathing vapors, mist or gas. Avoid breathing dust. Wear appropriate protective equipment and clothing during clean-up. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. For personnel protection see Section 8.

**Environmental Precautions:** Do not let product enter drains.

**Methods for Containment & Clean Up:** Avoid the generation of dusts during clean-up. Stop the flow of material, if this is without risk. Sweep up and shovel spillage. Collect in suitable container for disposal according to local regulations. Never return spills to original containers for re-use. For waste disposal see Section 13.

## Section 7- HANDLING AND STORAGE

**Handling:** Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed. Avoid prolonged exposure. Observe good industrial hygiene practices. Use care in handling and storage.

**Storage:** Store in original tightly closed container. Store in a dry and well-ventilated place. Store away from incompatible materials.

## Section 8- EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Guidelines:

#### Occupational Exposure Limits/Components with Workplace Control Parameters:

Component	CAS-No.	Value	Control Parameters	Basis
Magnesium Fluoride	7783-40-6	TWA	2.500000 mg/m3	USA. Occupational Exposure Limits (OSHA) Table Z-1 Limits for Air Contaminants
		TWA	2.500000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Bone Damage Fluorosis Substances for which there is a biological exposure index of indices Not classifiable as a human carcinogen Varies		
		PEL	2.5 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

### Biological Occupational Exposure Limits:

Component	CAS-No.	Parameters	Value	Biological Specimen	Basis
Magnesium Fluoride	7783-40-6	Fluoride	3.000mg/m	In Urine	ACGIH-Biological Exposure Indices (BEI)
	Remarks	Prior to shift (16 hours after exposure ceases)			
		Fluoride	10.0000mg/m	In Urine	ACGIH-Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			
		Fluoride	2 mg/l	Urine	ACGIH-Biological Exposure Indices (BEI)
	Remarks	Prior to shift (16 hours after exposure ceases)			
		Fluoride	3 mg/l	Urine	ACGIH-Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			

**Engineering Controls:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### Personal Protective Equipment:

**Eye/Face Protection:** Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

**Skin Protection:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Body Protection:** Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific workplace. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory Protection:** Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday. Routinely wash work clothing and protective equipment to remove contaminants.

## Section 9- PHYSICAL AND CHEMICAL PROPERTIES

**Physical State:** Solid

**Color:** Off-White

**Odor:** No information available

**Odor Threshold:** No information available

**pH:** No information available

**Melting Point/Range:** 1,261°C (2,302°F)

**Boiling Point/Range:** 2,239°C (4,062°F)

**Flash Point:** No information available

**Evaporation Rate:** No information available

**Flammability (solid,gas):** No information available

**Flammability or Explosive Limits:**

**Upper:** No data available

**Lower:** No data available

**Vapor Pressure:** No information available

**Vapor Density:** No information available

**Relative Density:** 3.15 g/mL at 25°C (77°F)

**Solubility:** No information available

**Partition coefficient; n-octanol/water:** No information available

**Auto Ignition Temperature:** No information available

**Decomposition Temperature:** No information available

**Viscosity:** No information available

**Explosive Properties:** No information available

**Oxidizing Properties:** No information available

## Section 10- STABILITY AND REACTIVITY

**Reactive Hazard:** No information available

**Stability:** Stable under recommended storage conditions.

**Conditions to Avoid:** Contact with incompatible materials

**Incompatible Materials:** Oxidizing agents

**Hazardous Decomposition Products:**

Hazardous decomposition products formed under fire conditions – Hydrogen Fluoride, Magnesium Oxide

Other decomposition products - No data available

**Hazardous Polymerization:** No information available

**Hazardous Reactions:** No information available

## Section 11- TOXICOLOGICAL INFORMATION

**Information on Toxicological Effects:**

**Acute Toxicity:** No information available

**LD50 Oral – Rat – 2,330 mg/kg**

**Inhalation:** No information available

**Dermal:** No information available

**Skin Corrosion/Irritation:** Causes skin irritation.

**Serious eye damage/irritation:** Causes serious eye irritation

**Respiratory or Skin Sensitization:** No information available

**Carcinogenicity:** This product is not considered to be a carcinogen by IARC, ACGIH, NTP, OSHA or EPA classification.

-**IARC:** No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen.

-**NTP:** No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen.

-**OSHA:** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen.

**Germ Cell Mutagenicity:** No information available

**Reproductive Effects:** No information available  
**Development Effects:** No information available  
**Specific Target Organ Toxicity – single exposure:** May cause respiratory irritation  
**Specific Target Organ Toxicity – repeated exposure:** No information available  
**Aspiration Hazard:** No information available  
**Additional Information:** RTECS: OM3325000  
 -Fluorides may cause salivation, nausea, vomiting, diarrhea and abdominal pain, followed by weakness, tremors, shallow respiration, convulsions and coma. May cause brain and kidney damage. Chronic fluoride poisoning can cause severe bone changes, loss of weight, anorexia and dental defects.  
 -Inhalation of magnesium compounds may cause metal fume fever.  
 -Metallic magnesium which perforates the skin may cause local lesions. Some magnesium salts have produced muscle weakness, cardiac arrhythmias, respiratory effects and changes in blood chemistry following ingestion.  
**-To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.**

### Section 12- ECOLOGICAL INFORMATION

**Toxicity:** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.  
**Persistence and Degradability:** No information available  
**Bioaccumulation/Accumulation:** No information available  
**Mobility in Soil:** No information available  
**Results of PBT & vPvB assessment:** PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.  
**Other Adverse Effects:** No information available.

### Section 13- DISPOSAL CONSIDERATIONS

**Waste Disposal Methods:** Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dispose of contaminated packaging as unused product. Dispose in accordance with all applicable regulations.

### Section 14- TRANSPORT INFORMATION

**DOT:** Not regulated as dangerous goods  
**IATA:** Not regulated as dangerous goods  
**IMDG/IMO:** Not regulated as dangerous goods

### Section 15- REGULATORY INFORMATION

**US Federal Regulations:** All products of this product are listed in the US Environmental Protection Agency Toxic Substances Control Act Chemical Substances Inventory.  
**SARA 302 Extremely Hazardous Substance:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302  
**SARA 313 (TRI Reporting):** This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313  
**SARA 311/312 Hazardous Chemical:** No  
**US California Proposition 65:** This product does not contain any chemicals known to the State of California to cause cancer, birth defects or any other reproductive harm.  
**US New Jersey Right-to-Know Components:**

Component	CAS No.	Revision Date
Magnesium Fluoride	7783-40-6	2008-06-01

**US Pennsylvania Right-to-Know Components:**

Component	CAS No.	Revision Date
Magnesium Fluoride	7783-40-6	2008-06-01

**US Massachusetts Right-to-Know Components:** No components are subject to the Massachusetts Right to Know Act

## **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.

The information in this SDS was obtained from sources, which we believe are reliable. However, the information is provided without any representation or warranty, expressed or implied, regarding the accuracy or correctness.

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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