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SAFETY DATA SHEET

Section 1- IDENTIFICATION		
COMPOSITION LaF3		PRODUCT NAME Lanthanum Fluoride
SUPPLIER: Plasmaterials, Inc. 2268 Research Drive Livermore, CA 94550 Ph: 925-447-4030	RECOMMENDED USE: Laboratory Chemicals Scientific Research	EMERGENCY TELEPHONE NUMBERS US: 001-800-424-9300 Europe: 001-703-527-3887

Section 2- HAZARD(S) IDENTIFICATION	
Physical Hazards: Not Classified	Environmental Hazards: Not Classified
Skin Corrosion/Irritation: Category 2 (H315)	OSHA Defined Hazards: Not Classified
Serious Eye Irritation/Eye Damage: Category 2A (H320)	
Specific Target Organ Toxicity – single exposure: Category 3 (H335) Respiratory Tract Irritation	
LABEL ELEMENTS: Signal Word: Warning	
	
<u>HAZARD STATEMENTS</u>	
-H315: Causes skin irritation -H320: Causes eye irritation -H335: May cause respiratory irritation	
<u>PRECAUTIONARY STATEMENTS</u>	
-P202: Do not handle until all safety precautions have been read and understood. -P260: Do not breath dust/fume/gas/mist/vapors/spray -P263: Avoid contact during pregnancy/while nursing -P264: Wash thoroughly after handling -P270: Do not eat, drink, or smoke when using this product -P271: Use only outdoors or in a well-ventilated area -P280: Wear protective gloves/protective clothing/eye protection/face protection -P281: Use personal protective equipment as required -P304+P340+P314: If inhaled: Remove victim to fresh air and keep comfortable for breathing. Get medical advice/attention if you feel unwell. -P308+P313: If exposed or concerned: Get medical advice/attention -P332+P313: If skin irritation occurs: Get medical advice/attention -P337+P313: If eye irritation persists: Get medical advice/attention -P352: Wash hands after handling -P362+P364: Take off contaminated clothing and wash it before reuse -P403+P233: Store in a well-ventilated place. Keep container tightly closed. -P405: Store locked up. -P420: Store away from incompatible materials -P501: Dispose of contents/container in accordance with local/regional/national/international regulations	

Hazards not otherwise classified (HNOC):

-None known

Section 3- COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS-No	Molecular Weight
Lanthanum Fluoride	13709-38-1	195.9 g/mol

Section 4- FIRST AID MEASURES

GENERAL ADVICE: 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.

INHALATION: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Give oxygen if breathing is difficult. If not breathing, give artificial respiration. Call a poison center/doctor if you feel unwell.

SKIN CONTACT: Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing before reuse.

EYE CONTACT: Do not rub eyes. Immediately, 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. Get medical attention if irritation develops and/or persists.

INGESTION: Rinse mouth with water. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

MOST IMPORTANT SYMPTOMS/EFFECTS: Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. May cause respiratory irritation. Skin irritation. May cause redness and pain.

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT

NEEDED: Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

Section 5- FIREFIGHTING MEASURES**Suitable Extinguishing Media:**Water Fog, Foam, Dry Chemical Powder, Carbon Dioxide (CO₂)**Unsuitable Extinguishing Media:**

Do not use water jet as an extinguisher, as this will spread the fire.

Specific Hazards Arising from the Chemical:

During fire, gases hazardous to health may be formed.

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.

Firefighting Instructions/Specific Methods:

Use standard firefighting procedures and consider the hazards of other involved materials. Use fire-extinguishing media appropriate for surrounding materials. Move containers from fire area if you can do so without risk.

General Fire Hazards:

No unusual fire or explosion hazards noted.

Section 6- ACCIDENTAL RELEASE MEASURES

Personal Precautions: Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material 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 of SDS.

Environmental Precautions: Avoid discharge into drains, water courses or onto the ground.

Methods for Containment & Clean Up:

-Large Spills: Stop the flow of material if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand, or earth and place into containers. Following product recovery, flush area

with water.

-Small Spills: 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: Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Wash hands thoroughly after handling. Wash contaminated clothing before reuse.

Storage: Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10).

Section 8- EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

Component	CAS-No.	Value	Control Parameters	Basis
Lanthanum Fluoride	13709-38-1	TWA	2.5 mg/m ³	US ACGIH Threshold Limit Values (TLV)
		TWA	2.5 mg/m ³	US NIOSH Pocket Guide to Chemical Hazards Materials
		TWA	2.5 mg/m ³ (Dust)	US OSHA Table Z-2 (29 CFR 1910.1000)
		PEL	2.5 mg/m ³ (as Fluoride)	US Occupational Exposure Limits (OSHA) Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
		PEL	2.5 mg/m ³	US California Code of Regulations, Title 8, Section 5155, Airborne Contaminants

Biological Limit Values:

Component	CAS-No.	Value	Determinant	Specimen	Basis
Lanthanum Fluoride	13709-38-1	2 mg/l	Fluoride	Urine	USA. ACGIH Biological Exposure Indices (BEI)
	Remarks	Prior to shift (16 hours after exposure ceases)			
		3 mg/l	Fluoride	Urine	USA. ACGIH Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			

Appropriate Engineering Measures: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ensure adequate ventilation, especially in confined areas. Avoid contact with eyes and skin. Provide eyewash station and safety shower.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday. When using do not smoke, eat, or drink. 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. Contaminated work clothing should not be allowed out of the workplace.

Personal Protective Equipment:

Eye/Face Protection: Wear safety glasses with side shields or goggles. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin and Body Protection: Handle with chemical resistant 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.

Wear suitable chemical resistant clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection: In case of insufficient ventilation, wear suitable respiratory equipment. Where protection from nuisance levels of dusts is 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).

Thermal Hazards: Wear appropriate thermal protective clothing when necessary.

Section 9- PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid

Odor: No data available

Odor Threshold: No data available

pH: No data available

Melting Point/Range: No data available

Boiling Point/Range: No data available

Flash Point: No data available

Evaporation Rate: No data available

Flammability (solid,gas): No data available

Flammability or Exposure Limits:

Upper: No data available

Lower: No data available

Vapor Pressure: No data available

Vapor Density: No data available

Relative Density: 5.936 g/cm³

Solubility: No data available

Partition coefficient; n-octanol/water: No data available

Auto Ignition Temperature: No data available

Decomposition Temperature: No data available

Viscosity: No data available

Explosive Properties: No data available

Oxidizing Properties: No data available

Section 10- STABILITY AND REACTIVITY

Reactive Hazard: Stable and non-reactive under normal conditions of use, storage, and transport.

Stability: Stable under normal conditions.

Conditions to Avoid: Keep away from heat, hot surfaces, spark, open flames, and other ignition sources. Contact with incompatible materials

Incompatible Materials: Strong oxidizing agents

Hazardous Decomposition Products: No data available

Hazardous Polymerization: No data available

Hazardous Reactions: No data available

Section 11- TOXICOLOGICAL INFORMATION

Information on likely Routes of Exposure:

Inhalation: May cause irritation to the respiratory system. Prolonged inhalation may be harmful.

Skin Contact: Causes skin irritation

Eye Contact: Causes eye irritation

Ingestion: Expected to be a low ingestion hazard

Symptoms related to the physical, chemical and toxicological characteristics: Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Information on Toxicological Effects:

Acute Toxicity: No information available
Skin Corrosion/Irritation: Causes skin irritation
Serious eye damage/irritation: Causes eye irritation
Respiratory or Skin Sensitization: No information available
Carcinogenicity: This product is not considered to be a carcinogen by IARC, ACGIH, NTP or OSHA
Germ Cell Mutagenicity: No information available
Reproductive Toxicity: 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
Chronic Effects: Prolonged inhalation may be harmful
-To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

Section 12- ECOLOGICAL INFORMATION

Toxicity: 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
Other Adverse Effects: No information available

Section 13- DISPOSAL CONSIDERATIONS

Waste Disposal Methods: Collect and reclaim or dispose in sealed containers to a licensed disposal site. Dispose of empty containers and contaminated packaging as unused product. Dispose of contents/container in accordance with local/regional/national/international 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: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt.D): Not Regulated
U.S. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052): Not Regulated
CERCLA Hazardous Substance List (40 CFR 302.4): Not Listed
SARA 302 Extremely Hazardous Substance: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302
SARA 304 Emergency Release Notification: Not Regulated
SARA 311/312 Hazards: Yes

Classified Hazard Categories	Skin corrosion or irritation Serious eye damage or eye irritation
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SARA 313: 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
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

Safe Drinking Water Act (SDWA): Contains component(s) regulated under the Safe Drinking Water Act
US Massachusetts Right to Know: No information available

US New Jersey Right to Know:

Component	CAS No.	Revision Date
Lanthanum Fluoride	13709-38-1	2008-06-01

US Pennsylvania Right to Know:

Component	CAS No.	Revision Date
Lanthanum Fluoride	13709-38-1	2008-06-01

US California Proposition 65: This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

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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