

MATERIAL SAFETY DATA SHEET

Date Printed: 03/05/2009

Date Updated: 05/17/2006

Version 1.4

Section 1 - Product and Company Information

Product Name LITHIUM FLUORIDE, FUSED, PIECES,
2-15MM, 99.995%
Product Number 668052
Brand ALDRICH

Company Sigma-Aldrich Canada, Ltd
Address 2149 Winston Park Drive
Oakville ON L6H 6J8 CA

Technical Phone: 9058299500
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Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
LITHIUM FLUORIDE	7789-24-4	No

Formula LiF
Synonyms TLD 100 * Lithium fluorure (French)
RTECS Number: OJ6125000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Toxic.

May cause harm to the unborn child. May cause harm to breastfed babies. Toxic if swallowed. Contact with acids liberates very toxic gas. Irritating to eyes, respiratory system and skin.
Target organ(s): Central nervous system. Kidneys.

HMIS RATING

HEALTH: 2*

FLAMMABILITY: 0

REACTIVITY: 0

NFPA RATING

HEALTH: 2

FLAMMABILITY: 0

REACTIVITY: 0

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

FLASH POINT

N/A

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed.
Incompatible Materials: Warning: Hydrolyzes to form hydrofluoric acid! Do not store in glass!

SPECIAL REQUIREMENTS

Hygroscopic.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Use only in a chemical fume hood. Safety shower and eye bath.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling.

EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	TWA	2.5 MG(F)/M3
USA	MSHA Standard-air	TWA	2.5 MG(F)/M3
USA	OSHA.	PEL	8H TWA 2.5 MG(F)/M3
New Zealand	OEL		
Remarks: check ACGIH TLV			
USA	NIOSH	TWA	2.5 MG(F)/M3

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Solid	
Property	Value	At Temperature or Pressure
Molecular Weight	25.94 AMU	
pH	7.0 - 8.5	
BP/BP Range	N/A	
MP/MP Range	845 °C	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	2.64 g/cm3	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	N/A	
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Refractive Index	N/A	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water:complete, colorless	

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions to Avoid: Moisture.

Materials to Avoid: Strong oxidizing agents, Strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Hydrogen fluoride, Lithium oxides.

Hazardous Decomposition Products Formed Upon Contact with Water: Hydrogen fluoride

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes eye irritation.

Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.

Ingestion: Toxic if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

Central nervous system. Kidneys. Cardiovascular system. Thyroid.

SIGNS AND SYMPTOMS OF EXPOSURE

Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Symptoms of exposure to inorganic fluorides may include salivation, nausea, vomiting, abdominal pain, fever, and labored breathing. Cyanosis and t-wave inversion have occurred in the breast-fed infants of women receiving lithium carbonate therapy. Large doses of lithium ion have caused dizziness and prostration, and can cause kidney damage if sodium intake is limited. Dehydration, weight loss, dermatological effects, and thyroid disturbances have been reported. Central nervous system effects that include slurred speech, blurred vision, sensory loss, ataxia, and convulsions may occur. Diarrhea, vomiting, and neuromuscular effects such as tremor, clonus, and hyperactive reflexes may occur as a result of repeated exposure to lithium ion. Symptoms of fluoride overexposure may include salivation, nausea, vomiting, abdominal pain, fever, and labored breathing. Fluoride ion can reduce serum calcium levels possibly causing fatal hypocalcemia. Prolonged exposure to fluoride dusts, vapors, or mists results in perforation of the nasal septum. Chronic effects include excessive calcification of the bones, ligaments, and tendons.

TOXICITY DATA

Oral

Rat

143 mg/kg

LD50

CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

ACGIH CARCINOGEN LIST

Rating: A4

CHRONIC EXPOSURE - TERATOGEN

Result: Lithium and its compounds are possible teratogens by analogy to lithium carbonate which has equivocal human teratogenic data and positive animal teratogenic data.

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Toxic solid, inorganic, n.o.s.
UN#: 3288
Class: 6.1
Packing Group: Packing Group III
Hazard Label: Toxic Substance
PIH: Not PIH

IATA

Proper Shipping Name: Toxic solid, inorganic, n.o.s.
IATA UN Number: 3288
Hazard Class: 6.1
Packing Group: III

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION

Symbol of Danger: T
Indication of Danger: Toxic.
R: 25-32-36/37/38
Risk Statements: Toxic if swallowed. Contact with acids liberates very toxic gas. Irritating to eyes, respiratory system and skin.
S: 22-26-36/37/39-45
Safety Statements: Do not breathe dust. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Toxic.

Risk Statements: May cause harm to the unborn child. May cause harm to breastfed babies. Toxic if swallowed. Contact with acids liberates very toxic gas. Irritating to eyes, respiratory system and skin.

Safety Statements: Do not breathe dust. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Statements: Target organ(s): Central nervous system. Kidneys.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2009 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.