



# SAFETY DATA SHEET

**MATERION**

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

**Name of the substance** Lead Fluoride (PbF<sub>2</sub>)  
**Identification number** 082-001-00-6 (Index number)  
**Synonyms** None.  
**Document number** L-MSDS0013  
**Issue date** 04-May-2015  
**Version number** 01

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

**Identified uses** Not available.  
**Uses advised against** None known.

### 1.3. Details of the supplier of the safety data sheet

#### Supplier

**Company name** Materion Advanced Chemicals Inc.  
**Address** 407 N. 13th Street  
1316 W. St. Paul Avenue  
Milwaukee, WI 53233  
United States  
**Division** Milwaukee  
**Telephone** 414.212.0257  
**e-mail** advancedmaterials@materion.com  
**Contact person** Noreen Atkinson

### 1.4. Emergency telephone number

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to Directive 67/548/EEC or 1999/45/EC as amended

**Classification** Repr. Cat. 1;R61, Repr. Cat. 3;R62, Xn;R20/22, R33, N;R50/53

#### Classification according to Regulation (EC) No 1272/2008 as amended

##### Health hazards

Acute toxicity, oral	Category 4	H302 - Harmful if swallowed.
Acute toxicity, inhalation	Category 4	H332 - Harmful if inhaled.
Carcinogenicity	Category 1B	H350 - May cause cancer.
Reproductive toxicity (fertility, the unborn child)	Category 1A	H360FD - May damage fertility. May damage the unborn child.
Specific target organ toxicity - repeated exposure	Category 2	H373 - May cause damage to organs through prolonged or repeated exposure.

##### Environmental hazards

Hazardous to the aquatic environment, acute aquatic hazard	Category 1	H400 - Very toxic to aquatic life.
Hazardous to the aquatic environment, long-term aquatic hazard	Category 1	H410 - Very toxic to aquatic life with long lasting effects.

#### Hazard summary

**Physical hazards** Not classified for physical hazards.  
**Health hazards** May cause harm to the unborn child. Possible risk of impaired fertility. Harmful by inhalation and if swallowed. Danger of cumulative effects.  
**Environmental hazards** Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
**Specific hazards** Not available.  
**Main symptoms** Not available.

## 2.2. Label elements

### Label according to Regulation (EC) No. 1272/2008 as amended

<b>Contains:</b>	Lead Fluoride
<b>Hazard pictograms</b>	None.
<b>Signal word</b>	Danger
<b>Hazard statements</b>	
H302	Harmful if swallowed.
H332	Harmful if inhaled.
H350	May cause cancer.
H360FD	May damage fertility. May damage the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

### Precautionary statements

#### Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P261	Avoid breathing dust.
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.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

#### Response

P301 + P312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a POISON CENTER/doctor if you feel unwell.
P330	Rinse mouth.
P391	Collect spillage.

#### Storage

P405	Store locked up.
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#### Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
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### Supplemental label information

None.

### 2.3. Other hazards

None known.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

#### General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Lead Fluoride	100	7783-46-2 231-998-8	-	082-001-00-6	#
<b>Classification:</b>	<b>DSD:</b>	Repr. Cat. 1;R61, Repr. Cat. 3;R62, Xn;R20/22, R33, N;R50/53			A,E,1
	<b>CLP:</b>	Acute Tox. 4;H302, Acute Tox. 4;H332, Carc. 1B;H350, Repr. 1A;H360FD, STOT RE 2;H373, Aquatic Acute 1;H400, Aquatic Chronic 1;H410			1,A

## SECTION 4: First aid measures

**General information** Not available.

### 4.1. Description of first aid measures

<b>Inhalation</b>	Not available.
<b>Skin contact</b>	Not available.
<b>Eye contact</b>	Not available.
<b>Ingestion</b>	Not available.

**4.2. Most important symptoms and effects, both acute and delayed** Not available.

**4.3. Indication of any immediate medical attention and special treatment needed** Not available.

## SECTION 5: Firefighting measures

**General fire hazards** Not available.

### 5.1. Extinguishing media

**Suitable extinguishing media** Not available.

**Unsuitable extinguishing media** Not available.

**5.2. Special hazards arising from the substance or mixture** Not available.

### 5.3. Advice for firefighters

**Special protective equipment for firefighters** Not available.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** Not available.

**For emergency responders** Not available.

**6.2. Environmental precautions** Not available.

**6.3. Methods and material for containment and cleaning up** Not available.

**6.4. Reference to other sections** Not available.

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling** Not available.

**7.2. Conditions for safe storage, including any incompatibilities** Not available.

**7.3. Specific end use(s)** Not available.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

**EU. Directive 98/24/EC: on the protection of workers from the risks related to chemical agents at work, Annex I**

#### List of Binding Occupational Exposure Limit Values

Material	Type	Value
Lead Fluoride (CAS 7783-46-2)	TWA	0.15 mg/m <sup>3</sup>

**EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU**

Material	Type	Value
Lead Fluoride (CAS 7783-46-2)	TWA	2.5 mg/m <sup>3</sup>

#### Biological limit values

**EU. Directive 98/24/EC: on the protection of workers from the risks related to chemical agents at work, Annex II**  
**Binding Biological Limit Values and Health Surveillance Measures**

Material	Value	Determinant	Specimen
Lead Fluoride (CAS 7783-46-2)	70 µg/100 ml	Lead	Blood

<b>Recommended monitoring procedures</b>	Not available.
<b>Derived no-effect level (DNEL)</b>	Not available.
<b>Predicted no effect concentrations (PNECs)</b>	Not available.

## 8.2. Exposure controls

<b>Appropriate engineering controls</b>	Not available.
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### Individual protection measures, such as personal protective equipment

<b>General information</b>	Not available.
<b>Eye/face protection</b>	Not available.
<b>Skin protection</b>	
- Hand protection	Not available.
- Other	Not available.
<b>Respiratory protection</b>	Not available.
<b>Thermal hazards</b>	Not available.
<b>Hygiene measures</b>	Not available.
<b>Environmental exposure controls</b>	Not available.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	Solid.
<b>Form</b>	Not available.
<b>Colour</b>	Not available.
<b>Odour</b>	Not applicable.
<b>Odour threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	824 °C (1515.2 °F)
<b>Initial boiling point and boiling range</b>	1293 °C (2359.4 °F)
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not applicable.

#### Upper/lower flammability or explosive limits

<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Vapour pressure</b>	< 0.0000001 kPa at 25 °C
<b>Vapour density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Not available.
<b>Solubility (other)</b>	Not available.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Explosive properties</b>	Not available.
<b>Oxidizing properties</b>	Not available.
<b>9.2. Other information</b>	
<b>Density</b>	8.44 g/cm <sup>3</sup> estimated

<b>Molecular formula</b>	F2-Pb
<b>Molecular weight</b>	245.2 g/mol
<b>Specific gravity</b>	8.45

## SECTION 10: Stability and reactivity

<b>10.1. Reactivity</b>	Not available.
<b>10.2. Chemical stability</b>	Not available.
<b>10.3. Possibility of hazardous reactions</b>	Not available.
<b>10.4. Conditions to avoid</b>	Not available.
<b>10.5. Incompatible materials</b>	Not available.
<b>10.6. Hazardous decomposition products</b>	Not available.

## SECTION 11: Toxicological information

**General information** Not available.

### Information on likely routes of exposure

<b>Inhalation</b>	Not available.
<b>Skin contact</b>	Not available.
<b>Eye contact</b>	Not available.
<b>Ingestion</b>	Not available.

**Symptoms** Not available.

### 11.1. Information on toxicological effects

<b>Product</b>	<b>Species</b>	<b>Test results</b>
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Lead Fluoride (CAS 7783-46-2)

#### **Acute**

##### **Oral**

LD50	Mouse	3015 mg/kg
	Rat	3031 mg/kg

**Skin corrosion/irritation** Not available.

**Serious eye damage/eye irritation** Not available.

**Respiratory sensitisation** Not available.

**Skin sensitisation** Not available.

**Germ cell mutagenicity** Not available.

### **Carcinogenicity**

#### **IARC Monographs. Overall Evaluation of Carcinogenicity**

Lead Fluoride (CAS 7783-46-2) 2A Probably carcinogenic to humans.

**Reproductive toxicity** Not available.

**Specific target organ toxicity - single exposure** Not available.

**Specific target organ toxicity - repeated exposure** Not available.

**Aspiration hazard** Not available.

**Mixture versus substance information** Not available.

**Other information** Not available.

## SECTION 12: Ecological information

**12.1. Toxicity** No toxicity data noted for the ingredient(s).

**12.2. Persistence and degradability** Not available.

**12.3. Bioaccumulative potential** Not available.

**Partition coefficient n-octanol/water (log Kow)** Not available.

<b>Bioconcentration factor (BCF)</b>	Not available.
<b>12.4. Mobility in soil</b>	Not available.
<b>12.5. Results of PBT and vPvB assessment</b>	Not a PBT or vPvB substance or mixture.
<b>12.6. Other adverse effects</b>	Not available.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

<b>Residual waste</b>	Not available.
<b>Contaminated packaging</b>	Not available.
<b>EU waste code</b>	Not available.

## SECTION 14: Transport information

### ADR

<b>14.1. UN number</b>	UN2291
<b>14.2. UN proper shipping name</b>	Lead compound, soluble, n.o.s. (Lead Fluoride)
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	6.1(PGIII)
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	6.1
<b>Hazard No. (ADR)</b>	60
<b>Tunnel restriction code</b>	E
<b>14.4. Packing group</b>	III
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Not available.

### RID

<b>14.1. UN number</b>	UN2291
<b>14.2. UN proper shipping name</b>	Lead compound, soluble, n.o.s. (Lead Fluoride)
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	6.1(PGIII)
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	6.1
<b>14.4. Packing group</b>	III
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Not available.

### ADN

<b>14.1. UN number</b>	UN2291
<b>14.2. UN proper shipping name</b>	Lead Compound, N.o.s. (Lead Fluoride)
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	6.1(PGIII)
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	6.1
<b>14.4. Packing group</b>	III
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Not available.

### IATA

<b>14.1. UN number</b>	UN2291
<b>14.2. UN proper shipping name</b>	Lead compound, soluble, n.o.s. (Lead Fluoride)
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	6.1(PGIII)
<b>Subsidiary risk</b>	-
<b>14.4. Packing group</b>	III

<b>14.5. Environmental hazards</b>	No.
<b>ERG Code</b>	6L
<b>14.6. Special precautions for user</b>	Not available.
<b>Other information</b>	
<b>Passenger and cargo aircraft</b>	Allowed.
<b>Cargo aircraft only</b>	Allowed.

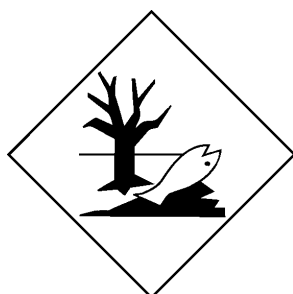
#### IMDG

<b>14.1. UN number</b>	UN2291
<b>14.2. UN proper shipping name</b>	LEAD COMPOUND, SOLUBLE, N.O.S. (Lead Fluoride)
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	6.1(PGIII)
<b>Subsidiary risk</b>	-
<b>14.4. Packing group</b>	III
<b>14.5. Environmental hazards</b>	
<b>Marine pollutant</b>	Yes
<b>EmS</b>	F-A, S-A
<b>14.6. Special precautions for user</b>	Not available.

#### ADN; ADR; IATA; IMDG; RID



#### Marine pollutant



## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### EU regulations

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I, as amended**  
Not listed.

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II, as amended**  
Not listed.

**Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I**  
Not listed.

**Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1**  
Not listed.

**Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2**  
Not listed.

**Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3**  
Not listed.

**Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V**  
Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**

Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**

Not listed.

**Authorisations**

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**

Not listed.

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**

Lead Fluoride (CAS 7783-46-2)

**Restrictions on use**

**Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use**

Not regulated.

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended**

Not listed.

**Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding, as amended**

Not listed.

**Other EU regulations**

**Directive 2012/18/EU on major accident hazards involving dangerous substances**

Lead Fluoride (CAS 7783-46-2)

**Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended**

Lead Fluoride (CAS 7783-46-2)

**Directive 94/33/EC on the protection of young people at work, as amended**

Not listed.

**National regulations**

Not available.

**15.2. Chemical safety assessment**

Not available.

**SECTION 16: Other information**

**List of abbreviations**

Not available.

**References**

Not available.

**Information on evaluation method leading to the classification of mixture**

Not available.

**Full text of any statements or R-phrases and H-statements under Sections 2 to 15**

R20/22 Harmful by inhalation and if swallowed.

R33 Danger of cumulative effects.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R61 May cause harm to the unborn child.

R62 Possible risk of impaired fertility.

H302 Harmful if swallowed.

H332 Harmful if inhaled.

H350 May cause cancer.

H360FD May damage fertility. May damage the unborn child.

H373 May cause damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

**Revision information**

None.

**Training information**

Not available.