

SAFETY DATA SHEET

LEAD FLUORIDE OPTICAL CRYSTAL

According to Regulation (EC) No.1907/2006 (REACH)



Revision 2016 : Issued 3rd October 2016

IDENTIFICATION OF THE SUBSTANCE AND THE COMPANY

1.1. PRODUCT IDENTIFIERS:

Product Name: Lead Fluoride Optical Crystal
Synonyms, Trade Names: PbF₂

1.2. RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

Identified Uses: Optical Material for manufacture of Optical Components.

1.3. DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Company: **CRYSTRAN LTD.**, 1 Broom Road Business Park, Poole, Dorset UK BH12 4PA
☎ +44 1202 307650

1.4. EMERGENCY TELEPHONE NUMBER

Emergency Phone: ☎ +44 1202 307650 (Monday to Friday 08:30 to 17:00 GMT)
Emergency Action: In the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department. The attending health professional will be able to contact the National Poisons Information Service.

2. HAZARDS IDENTIFICATION

2.1. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

Class 6.1 Poison. If swallowed causes nausea, vomiting, stomach pains and diarrhoea. Also harmful in contact with skin. Particular care must be exercised when machining and creating dust or particles.

2.2. LABEL ELEMENTS

Signal Word: **Warning**
H302 Harmful if swallowed
H332 Harmful if inhaled
Signal Word: **Health Hazard**
H360 May damage fertility or the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure
Signal Word: **Environment**
H410 Very toxic to aquatic life with long lasting effects.
Precautionary Statements:
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when handling this product



P301+P310 IF SWALLOWED: Immediately call a poison centre or doctor. Rinse mouth.
P304+P312 IF INHALED: Call a poison centre or doctor/physician if you feel unwell.

2.3. OTHER HAZARDS

None

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. SUBSTANCES

Component Name	CAS number	%	EC number (EINECS)	EU index	UN number
Lead Fluoride	7783-46-2	100%	231-998-8	082-001-6	2291

4. FIRST AID MEASURES

4.1. DESCRIPTION OF FIRST AID MEASURES

GENERAL: Consult a doctor for specific advice.
EYES: Irrigate thoroughly with water for at least 15 minutes. Obtain medical attention.
SKIN: Wash thoroughly with soap and water. Dry area with clean towel. Remove contaminated clothing and wash clothing before re-use.
INHALATION: Remove to fresh air. Perform artificial respiration if breathing has stopped. When breathing is difficult, properly trained personnel may administer oxygen. Keep affected person warm and at rest. Obtain medical attention.
INGESTION: Induce vomiting if conscious and as directed by properly qualified personnel. Wash out mouth thoroughly with water. Do not give carbonated drinks. Never give anything by mouth to an unconscious person. Obtain medical attention immediately.

4.2. MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Refer to Section 2.2 and to section 11.

4.3. INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

No Data.

5. FIRE FIGHTING MEASURES

5.1. EXTINGUISHING MEDIA

This product does not burn.

5.2. SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Material may evolve toxic fumes in a fire.

5.3. ADVICE FOR FIREFIGHTERS

None.

6. ACCIDENTAL RELEASE MEASURES

6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Wear suitable protective clothing & equipment as listed under Section 8. Avoid making dust.

6.2. ENVIRONMENTAL PRECAUTIONS

Prevent further leakage or spillage. Do not let product enter drains. Do not discharge to the environment.

6.3. METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

Take up and containerize for proper disposal. Containerize any cleaning materials used for proper disposal.

6.4. REFERENCE TO OTHER SECTIONS

Dispose as in Section 13.

CRYSTRAN LTD

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7. HANDLING AND STORAGE

7.1. PRECAUTIONS FOR SAFE HANDLING:

Keep away from heat. Avoid contact with skin and eyes. Protect against physical damage. Avoid generating dust.

7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Keep away from foodstuffs. Keep away from acids and strong bases.

7.3. SPECIFIC END USES

Optical Material for Manufacture of Optical Components.

8. EXPOSURE CONTROL AND PERSONAL PROTECTION

8.1. CONTROL PARAMETERS

OCCUPATIONAL EXPOSURE LIMITS (OEL) = 0.1 mg/m³ as Lead in 8 hour Time Weighted Average (TWA)

8.2. EXPOSURE CONTROLS

Protective gloves made of PVA are required. Use of a laboratory coat is suggested. Safety goggles or safety glasses with side shields are required if there is any possibility of chipping or dust creation. Respirators must be worn when the threshold limit is exceeded. Provide adequate general mechanical ventilation, and local exhaust ventilation. Wash hands immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE :	Clear glassy geometric shapes, no odour.	FLASH POINT:	Not Applicable
BOILING POINT (760mm Hg)	1290°C	FLAMMABILITY:	Not Applicable
MELTING POINT:	855°C	EXPLOSIVE PROPERTIES:	Not Applicable
SPECIFIC GRAVITY:	7.77 g/mL	VAPOUR PRESSURE:	Not Applicable
SOLUBILITY IN WATER:	Slightly; 64mg/100ml H ₂ O at 20°C	pH IN AQUEOUS SOLUTION:	Not determined

9.2. OTHER SAFETY INFORMATION

None

10. STABILITY AND REACTIVITY

10.1. REACTIVITY

Reacts with strong mineral acids and strong oxidising materials

10.2. CHEMICAL STABILITY

Stable under normal conditions of storage and use

10.3. POSSIBILITY OF HAZARDOUS REACTIONS

None known

10.4. CONDITIONS TO AVOID

Reacts with oxidising agents. Avoid strong acids, particularly hot conc. Sulphuric Acid

10.5. INCOMPATIBLE MATERIALS

Strong Mineral Acids. Strong oxidising materials

10.6. HAZARDOUS DECOMPOSITION PRODUCTS

Decomposition product is Hydrogen Fluoride gas in contact with mineral acid.

11. TOXICOLOGICAL INFORMATION

11.1. INFORMATION ON TOXICOLOGICAL EFFECTS

If swallowed causes nausea, vomiting, stomach pains and diarrhoea. Also harmful in contact with skin. Particular care must be exercised when machining and creating dust or particles. Also harmful in contact with skin. Particular care must be exercised when machining and creating dust or particles. Human exposure to lead, both acutely and chronically, is associated with well defined adverse effects to health. The target organs are blood, kidney and nervous system for acute exposure to toxic amounts. Lead accumulates in exposed individuals and approximately 90% of the absorbed dose remains deposited in the bone. Removal from exposure can reverse effects to the blood, male reproductive system, and to a limited extent the central nervous system.

TOXIC DOSE - LD50 > Not Available

CARCINOGENICITY: No evidence of carcinogenic properties.

MUTAGENICITY/TERATOGENICITY: Chronic exposure is associated with subtle effects to the male reproductive system and, if exposed, the developing fetus.

12. ECOLOGICAL INFORMATION

12.1. TOXICITY

Hazard to drinking water.

12.2. PERSISTENCE AND DEGRADABILITY

No Data

12.3. BIOACCUMULATIVE POTENTIAL

No Data

12.4. MOBILITY IN SOIL

No Data

12.5. RESULTS OF PBT AND vPvB ASSESSMENT

Not required or conducted

12.6. OTHER ADVERSE AFFECTS

The following applies to inorganic fluorides in general: biological effects: fish: L idus LC50 660mg/l; bacteria:Ps putida toxic from 231 mg/l up; algae: Sc quadricauda toxic from 249mg/l up; protozoa:E.sulcatum toxic from 101mg/l up; U parducazi toxic from 71mg/l up (all values as NaF).

13. DISPOSAL CONSIDERATIONS

13.1. WASTE TREATMENT METHODS

Chemical residues are generally classified as special waste, and are covered by regulations which vary according to location. Contact your local waste disposal authority for advice, or pass to a chemical disposal company.

14. TRANSPORT INFORMATION

14.1. UN NUMBER: 2291

14.2. UN PROPER SHIPPING NAME:

Lead compounds, soluble, N.O.S. (Lead II Fluoride).

14.3. TRANSPORT HAZARD CLASS: 6.1

14.4. PACKING GROUP: III

14.5. ENVIRONMENTAL HAZARDS: Marine Pollutant

14.6. SPECIAL PRECAUTIONS FOR USER: None

14.7. TRANSPORT IN BULK MARPOL / IBC: No Data

15. REGULATORY INFORMATION

15.1. SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS / LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE

TSCA: Listed in the US TSCA inventory

16. OTHER INFORMATION

REVISION DATE: 4th October 2016 ©2016 Crystran Ltd.

The above information is believed to be correct but does not purport to be all inclusive and must be used only as a guide.

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