

SAFETY DATA SHEET

ZINC SELENIDE OPTICAL CRYSTAL

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



Revision 2015 : Issued 15th July 2015

1. IDENTIFICATION OF THE SUBSTANCE AND THE COMPANY

1.1. PRODUCT IDENTIFIERS:

Product Name: Zinc Selenide Optical Crystal
Synonyms, Trade Names: ZnSe, Infracran, Lasertran, Raytran, Irtran-4

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. Toxic by ingestion and inhalation with a danger of cumulative effects. Liberates highly toxic hydrogen selenide in contact with gastric juices. Dermatitis may result from prolonged contact. Particular care must be exercised when machining and creating dust or particles. Symptoms include garlic odour on breath. Dangerous for the environment.

2.2. LABEL ELEMENTS

Signal Word: **Danger**

H301 Toxic if swallowed
H331 Toxic if inhaled
H410 Very toxic to aquatic life with long lasting effects

Precautionary Statements:

P262 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when handling this product
P273 Avoid release to the environment.
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 |
|----------------|------------|------|--------------------|--------------|-----------|
| Zinc Selenide | 1315-09-9 | 100% | 215-259-7 | 034-002-00-8 | 3283 |

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: Do not induce vomiting. Wash out mouth thoroughly with water and give 2 cups of water to drink. 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, with decomposition at temperatures greater than 400°C in air and greater than 800°C in an inert atmosphere. The material sublimates into zinc & selenium fumes.

5.3. ADVICE FOR FIREFIGHTERS

Use breathing apparatus if necessary.

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

1, Broom Road Business Park, Poole, Dorset, UK BH12 4PA

TEL: +44 1202 307650

Email: sales@crystran.co.uk

www.crystran.co.uk

FAX +44 1202 307651

Registered in England No.2863378

SAFETY DATA SHEET

ZINC SELENIDE OPTICAL CRYSTAL

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



Revision 2015 : Issued 15th July 2015

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 Se 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 : | Reddish-yellow geometric shapes, no odour. | FLASH POINT: | Not Applicable |
| BOILING POINT (760mm Hg) | Not Applicable | FLAMMABILITY: | Not Applicable |
| MELTING POINT: | 1525°C * | EXPLOSIVE PROPERTIES: | Not Applicable |
| SPECIFIC GRAVITY: | 5.27 g/mL | VAPOUR PRESSURE: | Negligible at 25°C |
| SOLUBILITY IN WATER: | Practically Insoluble | pH IN AQUEOUS SOLUTION: | Not determined |

9.2. OTHER SAFETY INFORMATION

* Oxidises at 300°C, exhibits plastic deformation at 500°C and dissociates at about 700°C

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

Can react with oxidising agents. Avoid strong acids

10.5. INCOMPATIBLE MATERIALS

Strong Mineral Acids. Strong oxidising materials

10.6. HAZARDOUS DECOMPOSITION PRODUCTS

Decomposition product is Hydrogen Selenide gas.

11. TOXICOLOGICAL INFORMATION

11.1. INFORMATION ON TOXICOLOGICAL EFFECTS

Toxic by ingestion and inhalation of dust, with a cumulative effect. Affects nervous system. Particular care must be exercised when machining and creating dust or particles. Inhalation of dust may irritate respiratory system.

TOXIC DOSE - LD50 > 5 g/kg

CARCINOGENICITY: No evidence of carcinogenic properties.

MUTAGENICITY/TERATOGENICITY: Some evidence of reproductive effects.

12. ECOLOGICAL INFORMATION

12.1. TOXICITY

Danger to drinking water. Poisonous to Fish

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

Do not allow product to reach ground water, water course or sewage system. Only release to environment with proper government permit.

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: 3283

14.2. UN PROPER SHIPPING NAME:

Selenium Compound, Solid, N.O.S. (Zinc Selenide).

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 TSCA inventory

SARA: 302/304: Not Listed

SARA: 311/312: Acute health hazard, Chronic health hazard.

SARA (TITLE 313): Zinc Selenide

WHMIS: This is a controlled product under the Canadian Workplace Hazardous Materials Information System

OSHA: Hazardous product under the OSHA Hazard Communication Standard (29 CFR 1910.1200)

16. OTHER INFORMATION

REVISION DATE: 15th July 2015 ©2015 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.

CRYSTRAN LTD

1, Broom Road Business Park, Poole, Dorset, UK BH12 4PA

TEL: +44 1202 307650

Email: sales@crystran.co.uk

www.crystran.co.uk

FAX +44 1202 307651

Registered in England No.2863378