SAFETY DATA SHEET

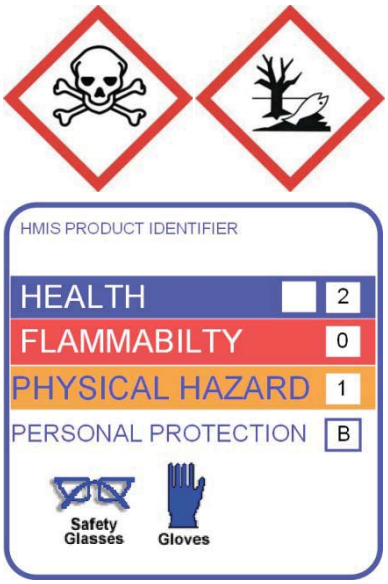
ZINC SELENIDE OPTICAL CRYSTAL

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

1. IDENTIFICATION OF THE SUBSTANCE AND THE COMPANY

CHEMICAL NAME: Zinc Selenide
SYNONYMS, TRADE NAMES: ZnSe, Infratran, Lasertran, Raytran, Irtran-4
DESCRIPTION: Solid Inorganic Polycrystalline pieces
USAGE: Optical Material for manufacture of Optical Components.
APPEARANCE: Reddish-yellow transparent solid. No odour
SUPPLIER:

2. HAZARDS IDENTIFICATION



T 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.

N Dangerous for the environment.

Class 6.1 **Poison**

Signal: Danger
H301 Toxic if swallowed
H331 Toxic if inhaled

Signal: Warning
H410 Very toxic to aquatic life with long lasting effects

Prevention:
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.

Response:
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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT NAME	CAS number	%	EC number (EINECS)	EU index	UN number
Zinc Selenide	1315-09-9	100%	215-259-7	034-002-00-8 Selenium Group	3283

4. 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 MAKE UNCONSCIOUS PERSONS VOMIT OR DRINK FLUIDS. Obtain medical attention immediately!

5. FIRE FIGHTING MEASURES

FLASH POINT: Not Ignitable. Not Applicable
AUTO IGNITION TEMP: Not Applicable
EXTINGUISHING MEDIA: This product does not burn.
UNUSUAL FIRE HAZARDS: May evolve toxic fumes in a fire, decomposing at temperatures greater than 400°C in air. Greater than 800°C in inert atmosphere, the material sublimes into zinc & selenium fumes.

6. ACCIDENTAL RELEASE MEASURES

CONTAMINATION CLEANUP: Wear suitable protective clothing & equipment as listed under Exposure / Personal protection. Take up and containerize for proper disposal. Avoid making dust. Containerize any cleaning materials used for proper disposal.

7. HANDLING AND STORAGE

USAGE PRECAUTIONS: Keep away from heat. Avoid skin contact. Handle Carefully. Protect against physical damage. Avoid generating dust.
STORAGE PRECAUTIONS: Keep away from foodstuffs. Keep away from acids and strong bases.

8. EXPOSURE CONTROL AND PERSONAL PROTECTION

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.

OCCUPATIONAL EXPOSURE LIMITS (OEL) = 0.1 mg/m^3 as Se in 8 hour Time Weighted Average (TWA)

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE :	Reddish-yellow geometric shapes, no odour.
pH IN AQUEOUS SOLUTION:	Not determined
BOILING POINT (760mm Hg)	Not Applicable
MELTING POINT:	1525°C (Oxidises at 300°C, exhibits plastic deformation at 500°C and dissociates at about 700°C)
FLASH POINT:	Not Applicable
FLAMMABILITY:	Not Applicable
EXPLOSIVE PROPERTIES:	Not Applicable
SPECIFIC GRAVITY:	5.27
VAPOUR PRESSURE:	Negligible at 25°C
SOLUBILITY IN WATER:	Practically Insoluble

10. STABILITY AND REACTIVITY

STABILITY:	Stable under normal conditions of storage and use.
HAZARDOUS DECOMPOSITION:	Can react with oxidising agents. Decomposition product is Hydrogen Selenide.
MATERIALS TO AVOID:	Mineral Acids

11. TOXICOLOGICAL INFORMATION

TOXIC DOSE - LD50	> 5 g/kg
CARCINOGENICITY:	No evidence of carcinogenic properties.
MUTAGENICITY/TERATOGENICITY:	Evidence of reproductive effects.
TOXICOLOGICAL FINDINGS:	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.

12. ECOLOGICAL INFORMATION

Do not allow product to reach ground water, water course or sewage system, even in small quantities. Danger to drinking water. Poisonous to fish. Only release to environment with proper government permits.

13. DISPOSAL CONSIDERATIONS

DISPOSAL 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

Class	UN	Packing Group	Proper Shipping Name	Special
6.1	3283	III	Selenium Compound, Solid, N.O.S. (Zinc Selenide)	Marine Pollutant

15. REGULATORY INFORMATION

Hazard Symbols:	T - Toxic	N - Dangerous for the environment
Risk Phrases:	23/25	Toxic by inhalation, in contact with skin and if swallowed.
	33	Danger of cumulative effects
	50/53	Very toxic to aquatic organisms. May cause long-term adverse effects in aquatic environment
Safety Phrases:	20/21	When using do not eat, drink or smoke
	28	After contact with skin, wash immediately with plenty of soap and warm water.
	44	If you feel unwell, seek medical advice immediately (show label where possible)

Note that the Risk and Safety Phrases included here for completeness are being replaced with the GHS Hazard and Precautionary statements given in section 2.

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)*

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