

# MATERIAL SAFETY DATA SHEET

## BARIUM FLUORIDE OPTICAL CRYSTAL

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

### 1. IDENTIFICATION OF THE SUBSTANCE AND THE COMPANY

#### 1.1. PRODUCT IDENTIFIERS:

Product Name: Barium Fluoride Optical Crystal  
Synonyms, Trade Names: BaF<sub>2</sub>  
Appearance: Clear transparent solid. No odor

#### 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: DataRay Inc.

### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of Substance

Class 6.1 poison. If swallowed causes nausea, vomiting, stomach pains and diarrhea. 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.  
H315 Causes skin irritation  
H319 Causes serious eye irritation  
H332 Harmful if inhaled.

#### Precautionary Statement:

P262 Do not breathe dust/fume/gas/mist/vapors/spray.  
P264 Wash thoroughly after handling.  
P270 Do not eat, drink or smoke when handling this product

#### Response:

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

#### 2.3. OTHER HAZARDS

None

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1. SUBSTANCES

Component Name	CAS number	%	EC number (EINECS)	EU index	UN number
Barium Fluoride	7787-32-8	100%	232-108-	0 056-002-00-7	1564

### 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. Never make an unconscious person vomit or drink fluids. 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

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.

#### 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 strong acids.

##### 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) = 0.5 mg/m<sup>3</sup> as Barium 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 odor.

BOILING POINT (760mm Hg) Not Applicable

MELTING POINT: 1355°C

SPECIFIC GRAVITY: 4.89 g/mL

SOLUBILITY IN WATER: Slightly soluble; 170mg/100ml H<sub>2</sub>O at 23°C

FLASH POINT: Not Applicable

FLAMMABILITY: Not Applicable

EXPLOSIVE PROPERTIES: Not Applicable

VAPOUR PRESSURE: Negligible at 25°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.

##### 10.3. POSSIBILITY OF HAZARDOUS REACTIONS

None known

##### 10.5. INCOMPATIBLE MATERIALS

Strong Mineral Acids.

##### 10.2. CHEMICAL STABILITY

Stable under normal conditions of storage and use

##### 10.4. CONDITIONS TO AVOID

Avoid strong acids

##### 10.6. HAZARDOUS DECOMPOSITION PRODUCTS

Decomposition product is Hydrogen Fluoride 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 > 50 mg/kg (oral/rat)

CARCINOGENICITY: No evidence of carcinogenic properties. MUTAGENICITY/TERATOGENICITY: Some evidence of reproductive effects.

#### 12. ECOLOGICAL INFORMATION

##### 12.1. TOXICITY

Danger 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 parduczi toxic from 71mg/l up (all values as NaF). Hazard to drinking water.

#### 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: 1564

14.2. UN PROPER SHIPPING NAME:

Barium Compound, N.O.S. (Barium Fluoride).

14.3. TRANSPORT HAZARD CLASS: 6.1

14.4. PACKING GROUP: III

14.5. ENVIRONMENTAL HAZARDS: None

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:

Not listed in the TSCA inventory

#### 16. OTHER INFORMATION REVISION DATE: May 7, 2017.

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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# MATERIAL SAFETY DATA SHEET

## CALCIUM FLUORIDE OPTICAL CRYSTAL

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

### 1. IDENTIFICATION OF THE SUBSTANCE AND THE COMPANY

#### 1.1. PRODUCT IDENTIFIERS:

Product Name: Calcium Fluoride Optical Crystal  
Synonyms, Trade Names: CaF<sub>2</sub>, Fluorite, Irtran-3

#### 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: DataRay Inc.

### 2. HAZARDS IDENTIFICATION

#### 2.1. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

Harmful in contact with skin and eyes. Particular care must be exercised when machining and creating dust or particles.

#### 2.2. LABEL ELEMENTS

Signal Word: Warning  
H315 Causes skin irritation  
H319 Causes serious eye irritation.  
H332 Harmful if inhaled

#### Precautionary Statements:

P262 Do not breathe dust/fume/gas/mist/vapors/spray.  
P301+P310 IF SWALLOWED: Immediately call a poison center or doctor. Rinse mouth.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

#### 2.3. OTHER HAZARDS

None

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1. SUBSTANCES

Component Name	CAS number	%	EC number	(EINECS)	EU index	UN number
Calcium Fluoride	7789-75-5	100%	232-188-7 --	-	-	-

### 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. Never make an unconscious person vomit or drink fluids. 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

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

### 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 strong acids.

**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) = 2.5 mg/m<sup>3</sup> long term as F

**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 odor. FLASH POINT: Not Applicable  
BOILING POINT (760mm Hg) ~ 2500°C FLAMMABILITY: Not Applicable  
MELTING POINT: 1360°C EXPLOSIVE PROPERTIES: Not Applicable  
SPECIFIC GRAVITY: 3.18 g/mL VAPOUR PRESSURE: Negligible at 25°C  
SOLUBILITY IN WATER: 0.0017g/100g at 20°C (Practically insoluble.) pH IN AQUEOUS SOLUTION: Not determined

**9.2. OTHER SAFETY INFORMATION**

None

**10. STABILITY AND REACTIVITY****10.1. REACTIVITY**

Reacts with strong mineral acids.

**10.3. POSSIBILITY OF HAZARDOUS REACTIONS**

None known

**10.5. INCOMPATIBLE MATERIALS**

Strong Mineral Acids.

**10.2. CHEMICAL STABILITY**

Stable under normal conditions of storage and use

**10.4. CONDITIONS TO AVOID**

Avoid strong acids

**10.6. HAZARDOUS DECOMPOSITION PRODUCTS**

Decomposition product is Hydrogen Fluoride 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** > 4250 mg/kg (oral/rat) **CARCINOGENICITY**: No evidence of carcinogenic properties.

**MUTAGENICITY/TERATOGENICITY**: No evidence of reproductive effects.

**12. ECOLOGICAL INFORMATION****12.1. TOXICITY**

No Data

**12.5. RESULTS OF PBT AND vPvB ASSESSMENT**

Not required or conducted

**12.2. PERSISTENCE AND DEGRADABILITY**

No Data

**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 parduzi toxic from 71mg/l up (all values as NaF). Hazard to drinking water.

**12.3. BIOACCUMULATIVE POTENTIAL**

No Data

**12.4. MOBILITY IN SOIL**

No Data

**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:** None**14.4. PACKING GROUP:** None**14.2. UN PROPER SHIPPING NAME:**

Not subject to transportation regulations.

**14.5. ENVIRONMENTAL HAZARDS:** None**14.3. TRANSPORT HAZARD CLASS:** None**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

DSL (Canada): Listed

**16. OTHER INFORMATION**

**REVISION DATE:** May 7, 2017

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

**MATERIAL SAFETY DATA SHEET****ZINC SELENIDE (ZnSe)**

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

**1. IDENTIFICATION OF THE SUBSTANCE AND THE COMPANY****1.1. PRODUCT IDENTIFIERS:**

Product Name: Zinc Selenide (ZnSe) powder or microcrystalline grains.  
Synonyms, Trade Names: ZnSe Powder, ZnSe Microcrystalline, 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: DataRay Inc.

**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 odor 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/vapors/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 center or doctor. Rinse mouth.  
P304+P312 IF INHALED: Call a poison center 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**



## 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/m<sup>3</sup> 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 odor.	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

\* Oxidizes 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 oxidizing 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 strong mineral acids and strong oxidizing materials

### 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:** May 7, 2017

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