

# SAFETY DATA SHEET

## CADMIUM TELLURIDE OPTICAL CRYSTAL

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



Revision 2015 : Issued 6<sup>th</sup> October 2015

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

#### 1.1. PRODUCT IDENTIFIERS:

Product Name: Cadmium Telluride Optical Crystal  
Synonyms, Trade Names: CdTe, IRTRAN 6

#### 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. Harmful by inhalation, in contact with skin and if swallowed. Very Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment. Particular care must be exercised when machining and creating dust or particles. Class 9 Environmentally Hazardous Substance.

#### 2.2. LABEL ELEMENTS

Signal Word: **Warning**  
H302 Harmful if swallowed  
H312 Harmful in contact with skin  
H332 Harmful if inhaled  
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  
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

Class 9 Environmentally Hazardous Substance.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1. SUBSTANCES

Component Name	CAS number	%	EC number (EINECS)	EU index	UN number
Cadmium Telluride	1306-25-8	100%	215-149-9	048-001-00-5	2570 and/or 3077

### 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

Cadmium, cadmium oxides, and tellurium oxides may be evolved in a fire..

#### 5.3. ADVICE FOR FIREFIGHTERS

Use breathing apparatus if necessary.

#### 5.4. FURTHER INFORMATION

No data available.

### 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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Registered in England No.2863378

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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

EXPOSURE LIMITS (OEL) 0.1 mg/m<sup>3</sup> TWA. - EXPOSURE LIMITS (TLV) 0.002 mg/m<sup>3</sup> TWA (Kidney Damage)

#### 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)	Not Known	FLAMMABILITY:	Not Applicable
MELTING POINT:	1092°C	EXPLOSIVE PROPERTIES:	Not Applicable
SPECIFIC GRAVITY:	6.2 g/mL	VAPOUR PRESSURE:	Negligible at 25°C
SOLUBILITY IN WATER:	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 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

Cadmium & Tellurium oxides

### 11. TOXICOLOGICAL INFORMATION

#### 11.1. INFORMATION ON TOXICOLOGICAL EFFECTS

The following applies to cadmium compounds in general: mucosal irritations, coughing, and dyspnoea after inhalation. Inhalation may lead to the formation of oedemas in the respiratory tract. Toxic effect on gastrointestinal tract. Long-term exposure to the chemical results in toxic effect on kidneys, lungs, bones. The following applies to tellurium compounds in general: after oral uptake, the compound is mostly reduced to metallic tellurium and subsequently eliminated with the faeces (blue-grey). After inhalation or ingestion: metallic taste, dryness in mouth. Possible in extreme cases: gastrointestinal complaints, cyanosis, unconsciousness, collapse, in some cases risk of liver and kidney damage.

Particular care must be exercised when machining and creating dust or particles.

TOXIC DOSE - LD50 > 15 g/kg

CARCINOGENICITY: Suspected human carcinogen.

MUTAGENICITY/TERATOGENICITY: Some evidence of reproductive effects.

### 12. ECOLOGICAL INFORMATION

#### 12.1. TOXICITY

The following applies to cadmium compounds in general:  
degradability: biodegradability 0; biological effects: fish: L.macrochirus 96 h. LDLo: 1.94 mg/l; C. auratus 8.5 h. toxic from 0.0165 mg/l up; bacteria: E. coli toxic from 0.15 mg/l up; arthropods: Daphnia toxic 0.1 mg/l; Daphnia magna toxic from 0.0026 mg/l up; protozoa: toxic from 0.2 mg/l up; algae: Sc.quadricauda toxic from 0.1 mg/l up; hazard for drinking water.

#### 12.2. PERSISTENCE AND DEGRADABILITY

Does not degrade.

#### 12.3. BIOACCUMULATIVE POTENTIAL

Refer to 12.1

#### 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.

### 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: 3077

#### 14.2. UN PROPER SHIPPING NAME:

Environmentally Hazardous Substance, Solid, N.O.S. (Cadmium Telluride).

#### 14.3. TRANSPORT HAZARD CLASS: 9

#### 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:

### 15. REGULATORY INFORMATION

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

TSCA: Listed in the TSCA inventory

### 16. OTHER INFORMATION

REVISION DATE: 6<sup>th</sup> October 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.

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