

# Safety Data Sheet

## 1 Identification of the substance and the company

### Description:

Product name: Caesium Iodide (TI) Scintillation Crystals

Trade names/synonyms: Thallium doped Caesium Iodide, CsI (TI)

REACH Reg.-No.: exempted from registration in accordance with REACH.

### Application:

Inorganic Scintillation Detector Crystal.

### Company identifier:

Hilger Crystals

Unit R1 Westwood Estate Margate Kent CT9 4JL UK

Tel.: +44 (0) 1843 231166 email [Sales@hilger-crystals.co.uk](mailto:Sales@hilger-crystals.co.uk)

Web: [www.hilger-crystals.co.uk](http://www.hilger-crystals.co.uk)

### Emergency information:

Contact as above (Mon-Thurs 8.00 – 17.00, Fri 8.00- 12:00)

In the event of a medical enquiry please contact your local doctor or hospital A&E department.

## 2 Hazards Identification

### Classification of the substance:

EU/EEC - According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 2015/830]

According to: EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

CLP • Due to formed nature of this product, no airborne concentrations are expected.

Acute Toxicity Oral 4 - H302

DSD/DPD • Due to formed nature of this product, no airborne concentrations are expected.

Harmful (Xn)

R20/22

### Label Elements

CLP

WARNING



### Hazard statements

H302 - Harmful if swallowed

### Precautionary statements

P264 - Wash thoroughly after handling.

P270 - Do not eat, drink or smoke when using this product.

P301+P312 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell.

P330 - Rinse mouth.

P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

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DSD/DPD



Risk phrases • R20/22 - Harmful by inhalation and if swallowed.

### **Other Hazards**

CLP - According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

DSD/DPD • According to European Directive 1999/45/EC this material is considered dangerous.

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

### **Classification of the substance or mixture**

OSHA HCS 2012 • Due to formed nature of this product, no airborne concentrations are expected.

Acute Toxicity Oral 4

### **Label elements**

OSHA HCS 2012

WARNING



### **Hazard statements**

Harmful if swallowed

### **Precautionary statements**

Prevention • Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

Response • IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

Storage/Disposal • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

### **Other hazards**

OSHA HCS 2012 • Under United States Regulations (29 CFR 1910.1200 - Hazard Communication

Standard), this product is considered hazardous.

Canada

According to: WHMIS

### **Classification of the substance or mixture**

WHMIS • Due to formed nature of this product, no airborne concentrations are expected.

Not classified

### **Label elements**

WHMIS • No label element(s) required.

### **Other hazards**

WHMIS • In Canada, the product mentioned above is not considered hazardous under the

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Workplace Hazardous Materials Information System (WHMIS).

**Other hazards:**

None

### 3 Composition/Information on Ingredients

#### 3.1 Substances

Material does not meet the criteria of a substance

#### 3.2 Mixtures

Component Name	CAS number	%	EINECS number
Caesium Iodide	7789-17-5	99-100	232-145-2
Thallium Iodide	7790-30-9	<1%	232-199-7

### 4 First-aid measures

**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 two cups of water to drink. Do not give carbonated drinks. Never give anything by mouth to an unconscious person. Obtain medical attention immediately.

**Most important symptoms and effects, both acute and delayed:**

Refer to [Section 2](#) and [Section 11](#).

**Indication of any immediate medical attention and special treatment required:**

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

### 5 Firefighting measures

**Extinguishing media:**

This product does not burn.

**Special hazards arising from the substance:**

In certain fire conditions, traces of other toxic gases cannot be excluded, e.g., Hydrogen Iodide (HI)

**Advice for firefighters:**

Use breathing apparatus if necessary.

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### 6 Accidental release measures

**Emergency procedures, personal precautions and protective equipment:**

Wear suitable protective clothing & equipment as listed under [Section 8](#). Avoid making dust.

**Environmental precautions:**

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

**Methods and materials for the containment and cleaning up:**

Take up and containerise for proper disposal. Containerise any cleaning materials used for proper disposal.

### 7 Handling & storage

**Precautions for safe handling:**

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

**Conditions for safe storage including any incompatibilities:**

Store in original container in cool dry conditions, keep away from water, foodstuffs and acidic materials. The product is slightly hygroscopic.

**Specific application:**

Scintillation crystal material for radiation detection components.

### 8 Exposure controls/personal protection

**Control parameters:**

Exposure Limits/Guidelines			
	Result	ACGIH	Poland
Thallium iodide	STELs	Not established	0.3 mg/m <sup>3</sup> STEL [NDSch] (as TI) as Thallium compounds
	TWAs	0.02 mg/m <sup>3</sup> TWA (inhalable fraction, as TI) as Thallium compounds	0.1 mg/m <sup>3</sup> TWA [NDS] (as TI) as Thallium compounds

**Exposure Control Notations:**

ACGIH - Thallium iodide as Thallium compounds: Skin: (Skin - potential significant contribution to overall exposure by the cutaneous route)

**Exposure controls:**

Protective PVA gloves and an N95 mask are required, and the 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 & chemical properties

**Information on basic physical and chemical properties**

**Appearance:** Whitish colour, no odour

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**Flash point:** Not applicable  
**Boiling point:** 1280 °C  
**Flammability:** Not Applicable  
**Melting point:** 621 °C  
**Explosive properties:** Not Applicable  
**Vapour pressure:** Not applicable  
**Solubility in water:** Very soluble  
**pH in aqueous solution:** Not determined  
**Other safety information:**

### 10 Stability & reactivity

**Reactivity:** Reacts with strong mineral acids and strong oxidising materials  
**Chemical stability:** Stable under normal conditions of storage and use.  
**Possibility of hazardous reactions:** None known  
**Conditions to avoid:** Can react with oxidising agents. Avoid strong acids.  
**Incompatible materials:** Strong Mineral Acids. Strong oxidising materials.  
**Hazardous decomposition products:** when heated to decomposition, emits toxic fumes of iodine

### 11 Toxicological information

**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 Caesium Iodide 2386mg/Kg oral ratio

LD50 Thallium Iodide 24.1 mg/Kg oral ratio

**Carcinogenicity:**

No evidence of carcinogenic properties.

**Mutagenicity/teratogenicity:**

Some evidence of reproductive effects.

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### 12 Ecological information

**Toxicity:** Danger to drinking water. Poisonous to Fish.

**Persistence and degradability:** No Data

**Bioaccumulative potential:** No Data

**Mobility in soil:** No Data

**Results of PBT and vPvB assessment:** Not required or conducted

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

### 13 Disposal considerations

**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

**UN Number:** 3077

**UN Proper shipping name:** Caesium Iodide, thallium Iodide compound, solid N.O.S (Caesium iodide thallium)

**Transport hazard class:** 9

**Packing group:** III

**Environmental hazards:** Marine pollutant

**Special user precautions:** None

**Transport in bulk Marpol / IBC:** No Data

### 15 Regulatory information

**Safety, health and environmental regulations/legislation for the substance:** TSCA:

Listed in the TSCA inventory

SARA: 302/304: Not Listed

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

SARA (TITLE 313): Caesium iodide thallium

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:** August 2022

The above information is believed to be true and correct and is supplied as a guide for information only, it does not purport to be all inclusive.