

Material Safety Data Sheet (MSDS) Gamma and X-Ray Sensors

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: SemeaTech Gamma Sensors

Product Use: Gamma and X-Ray detection

Manufacturer/Supplier: SemeaTech (Shanghai) Co., Ltd.

Address: 1355 Chengbei Road, Bldg#1-801, Jiading District, Shanghai, China

Emergency Contact: +86-21-59547013

SECTION 2: HAZARD IDENTIFICATION

Hazard Classification:

- The sensor is a sealed unit containing cesium iodide inside a metal enclosure.
- Under normal operating conditions, no exposure to cesium iodide is expected.
- If the enclosure is breached, cesium iodide may pose health and environmental hazards.

GHS Label Elements:

- **Signal Word:** Not required under normal conditions.
- **Hazard Statements:**
 - If the enclosure is damaged, exposure to cesium iodide may cause irritation to the respiratory system, eyes, and skin.
 - Avoid inhalation, ingestion, or contact with broken sensor material.

Precautionary Statements:

- **Prevention:** Do not open or damage the sensor. Use only as intended.
- **Response:** If the enclosure is compromised, follow appropriate spill and exposure procedures.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No.	Concentration (%)
Cesium Iodide (CsI)	7789-17-5	Varies (Encapsulated)
Metal Enclosure	Various	Balance

SECTION 4: FIRST AID MEASURES

Inhalation: If cesium iodide is released and inhaled, move to fresh air and seek medical attention if symptoms develop.

Skin Contact: If exposed to cesium iodide, wash skin with soap and water.

Eye Contact: If cesium iodide dust enters the eyes, rinse thoroughly with water for at least 15 minutes.

Ingestion: If cesium iodide is accidentally ingested, rinse mouth with water and seek medical advice.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Use appropriate fire extinguishing methods for surrounding materials.

Fire Hazards: The metal enclosure may be subject to high temperatures, but cesium iodide is not highly flammable.

Protective Equipment: Firefighters should use self-contained breathing apparatus if exposure to cesium iodide dust occurs.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions:

- Avoid inhalation or contact with cesium iodide if the sensor is damaged.
- Wear gloves, safety goggles, and protective clothing.

Cleanup Methods:

- Carefully collect any broken sensor parts and place them in a sealed container.
 - Dispose of waste according to local regulations.
-

SECTION 7: HANDLING AND STORAGE

Handling:

- Do not open or physically damage the sensor.
- Handle with care to prevent mechanical damage.

Storage:

- Store in a dry, cool place.
 - Keep away from strong acids, moisture, and incompatible materials.
-

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits:

- No exposure is expected under normal use conditions.

Personal Protective Equipment (PPE):

- None required under normal conditions.
 - If damaged, wear gloves, safety glasses, and a dust mask when handling broken parts.
-

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	Cesium Iodide
Physical State	Solid (Encapsulated)
Appearance	White crystalline (if exposed)
Odor	Odorless
Solubility in Water	Soluble
Melting Point	~621°C

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable under normal conditions inside the sensor enclosure.

Reactivity: Cesium iodide is not highly reactive but may degrade in high humidity if exposed.

Hazardous Decomposition Products: None under normal use.

SECTION 11: TOXICOLOGICAL INFORMATION

Potential Health Effects:

- **Inhalation:** Dust exposure may cause mild respiratory irritation if the enclosure is broken.
 - **Skin Contact:** May cause mild irritation.
 - **Eye Contact:** May cause irritation if exposed.
 - **Ingestion:** Not expected under normal use. If ingested, may cause nausea or irritation.
-

SECTION 12: ECOLOGICAL INFORMATION

- Cesium iodide is not classified as a persistent organic pollutant.
 - Not expected to bioaccumulate significantly.
 - Avoid uncontrolled release into the environment.
-

SECTION 13: DISPOSAL CONSIDERATIONS

- Dispose of damaged sensors according to local regulations for electronic and hazardous waste.
 - Do not dispose of in regular trash if the enclosure is compromised.
-

SECTION 14: TRANSPORT INFORMATION

- Not classified as a hazardous material under standard transport regulations when intact.
 - If damaged, handle as potentially hazardous material.
-

SECTION 15: REGULATORY INFORMATION

Regulation	Status
OECD High Production Volume (HPV)	Not applicable
Persistent Organic Pollutant	Not applicable
Ozone Depletion Potential	Not applicable
RoHS Restriction	Not applicable
Seveso III Directive	Not applicable
Rotterdam Convention (PIC)	Not applicable
Basel Convention (Hazardous Waste)	Not applicable

Disclaimer: The information in this document is believed to be accurate as of the issue date. However, no warranty is made, and users should determine the suitability of this product for their specific applications.