

MATERIAL SAFETY DATA SHEET

I PRODUCT IDENTIFICATION

Trade Name: Cesium Iodide
Synonyms: Cesium monoiodide, dicesium diiodide, tricesium triiodide
CAS #: 7789-17-5

Chemical Family: Metal Iodide
Formula: CsI

II HAZARDOUS INGREDIENTS

<u>Hazardous Components</u>	<u>%</u>	<u>OSHA/PEL</u>	<u>ACGIH/TLV</u>	<u>Sec.302</u>	<u>Sec.304</u>	<u>Sec.313</u>
Cesium Iodide	0-100	N/E	N/E	No	No	No
Iodine	0-100	1 mg/m ³	1 mg/m ³	No	No	No

HMIS Ratings (0-4): Health: 2 Flammability: 0 Reactivity: 0
HMIS Protective Equipment: F: Glasses, gloves, apron, dust mask

III PHYSICAL DATA

Melting Point: 621 °C
Specific Gravity: 4.5 (H₂O=1)
Vapor Density (Air=1): NA
Reaction with H₂O: Slight exothermic reaction possible
Solubility in H₂O: Soluble (44 g/100 mL)
Other Comments: Soluble in alcohols. Deliquescent. Practically insoluble in acetone.

Boiling Point: 1280 °C
Vapor Pressure: N/A
Evaporation Rate: N/A
Density (gm/cc): 4.510 at 25 °C
Appearance and Odor: White powder, no odor.

IV FIRE AND EXPLOSION HAZARDS DATA

Flash Point (Method used): N/A
Flammable Limits: Lower: N/A **Upper:** N/A

Autoignition Temperature: N/A
Flammability: Non-flammable.

Extinguishing Media: Noncombustible. Use extinguishing media appropriate to surrounding fire conditions.
Special Firefighting Procedures: Firefighters must wear full face, self contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

Unusual Fire & Explosion Hazards: When heated to decomposition, cesium iodide may emit toxic fumes of cesium and iodine.

V HEALTH HAZARD INFORMATION

Effects of Exposure:

Cesium is quite similar to potassium in its elemental state. It has been shown, however, to have pronounced physiological action in experimentation with animals. Hyper-irritability, including marked spasms, has been shown to follow the administration of cesium in amounts equal to the potassium content of the diet. It has been found that replacing potassium in the diet of rats with cesium caused death after 10-17 days.

Iodides are similar in toxicity to bromides. Prolonged absorption of iodides may produce "iodism" which is manifested by skin rash, running nose, headache and irritation of mucous membranes. In severe cases, the skin may show pimples, boils, redness, black and blue spots, hives, and blisters. Weakness, anemia, loss of weight and general depression may occur. Generally very soluble in water and easily absorbed into the body.

Acute Effects:

Inhalation: May cause irritation to the upper respiratory system and iodism. High concentrations are extremely destructive to tissues of the mucous membranes and upper respiratory tract.

Ingestion: Moderately toxic by ingestion.

Skin: May cause irritation. High concentrations are extremely destructive to eyes and skin.

Eye: May cause irritation. High concentrations are extremely destructive to eyes and skin.

Chronic Effects:

Inhalation: May cause iodism.

Ingestion: May cause cesium poisoning.

Skin: May cause dermatitis.

Eye: No chronic health effects recorded.

Routes of Entry: Inhalation, ingestion, skin, eyes.

Target Organs: May affect the respiratory system, thyroid and skin. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Medical Conditions Generally Aggravated by Exposure: Pre-existing respiratory and skin disorders.

Carcinogenicity: NTP: No IARC: No OSHA: No

Additional Information: Prolonged exposure to iodides may produce iodism in sensitive individuals. Symptoms of exposure include: Skin rash, running nose, headache, and irritation of the mucous membranes. For severe cases the skin may show pimples, boils, hives, blisters and black and blue spots. Iodides are readily diffused across the placenta. Neonatal deaths from respiratory distress secondary to goiter have been reported. Iodides have been known to cause drug-induced fevers, which are usually of short duration.

Toxicity Data:

RTECS #: FL0350000 (Cesium Iodide)

Orl-Rat LD50: 2386 mg/kg

Ipr-Rat LD50: 1400 mg/kg

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION: Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention.

INGESTION: Give 1-2 glasses of milk or water and induce vomiting, seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

SKIN: In case of contact, immediately flush skin with copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician immediately. Wash contaminated clothing before reuse. Discard contaminated shoes.

EYES: In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes. Assure adequate flushing of the eyes by separating the eyelids with fingers. Call a physician immediately.

VI REACTIVITY DATA

Stability: Stable

Conditions to Avoid: Protect from moisture.

Incompatibles: Strong oxidizing agents, strong acids and bases.

Hazardous Decomposition Products: Toxic fumes of hydrogen iodide. Cesium and iodine.

Hazardous Polymerization: Will not occur.

VII SPILL OR LEAK PROCEDURES

Steps to Be Taken in Case Material is Released or Spilled: Evacuate area, wear self-contained breathing apparatus, rubber boots and heavy rubber gloves. Wear disposable coveralls and discard them after use. Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Waste Disposal Method: Dispose of in accordance with Federal, State and Local regulations.

VIII SPECIAL PROTECTION INFORMATION

Respiratory Protection: Wear appropriate NIOSH/MSHA-approved respirator.

Ventilation: Use only in a chemical fume hood. General exhaust is recommended.

Protective Gloves: Chemical-resistant gloves.

Eye Protection: Safety goggles, faceshield (8 inch minimum).

Other Protective Clothing or Equipment: Protective gear suitable to prevent contamination.

IX SPECIAL PRECAUTIONS

Precautions to Be Taken in Handling and Storage: Safety shower and eye bath. Do not breathe dust, do not get into eyes, on skin, or on clothing. Avoid prolonged or repeated exposure. Wash thoroughly after handling. Severe irritant. Sensitizer, possible teratogen. Keep tightly closed, and store in a cool dry place.

Label Precautionary Statements: Harmful. Possible risk of harm to the unborn child. May cause sensitization by inhalation and skin contact. Causes severe irritation. Do not breathe dust. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing. Hygroscopic.

Some of the chemicals listed herein are research or experimental substances which may be toxic, as defined by various governmental regulations. In accordance with Environmental Protection Agency regulations and the Toxic Substance Control Act (TSCA), these materials should only be handled by , or under the direct supervision of, a "technically qualified individual", as defined in 40 CFR 710.2(aa).

Issued by: S. Dierks

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