



MATERIAL SAFETY DATA SHEET

PRODUCT NAME: Cadmium Telluride

SECTION 1 – IDENTIFICATION AND INFORMATION ON INGREDIENTS

MATERIAL CODE: CdTe
MATERIAL NAME: Cadmium Telluride
CHEMICAL FAMILY: II-VI Semiconductor Compound
CAS# CADMIUM 7440-45-9 RTECS# EU9800000
CAS# TELLURIUM 13494-80-9 RTECS# WY2625000
MOLECULAR FORMULA: CdTe
MOLECULAR WEIGHT: 230
CADMIUM: 50% Atomic 47% Weight
TELLURIUM: 50% Atomic 53% Weight
REPORTED IN EPA TSCA INVENTORY
NFPA Rating (scale 0 to 4) Health = 3, Fire = 1, Reactivity = 0

	%	PEL	TLV
CdTe Ingredients:	100	0.05 mg Cd/m ³	0.01 mg Cd/m ³
		0.1 mg Te/m ³	0.1 mg Te/m ³

SECTION 2 – PHYSICAL DATA

BOILING POINT: 1130°C
MELTING POINT: 1092°C
DENSITY: 5.65 g/cm³
SOLUBILITY IN H₂O: Insoluble
ODOR: Odorless
APPEARANCE: Black, cubic crystalline material, either polished or satin finish

SECTION 3 – FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: unknown
AUTOIGNITION TEMPERATURE: unknown
FLAMMABLE LIMITS IN AIR, % BY VOLUME: No data
EXTINGUISHING MEDIA: DO NOT USE WATER. Use dry chemical extinguishing agents, dry sand, or dry ground dolomite.
SPECIAL FIRE FIGHTING PROCEDURES: Wear NIOSH/MSHA approved self-contained breathing apparatus, flame and chemical resistant protective clothing, hat, gloves and boots. If without risk move material out of fire area.

Unusual Fire and Explosion Hazards: Fire hazard when exploded to heat or flame. Evolves hydrogen telluride, which is atoxic and flammable gas, when exposed to water above 600°C.

SECTION 4 – HEALTH HAZARD DATA

OSHA (PEL): 0.05 mg Cd/m³
 0.1 mg Te/m³
AOGIH (TLV): 0.05 mg Cd/m³
 0.1 mg Te/m³

ANIMAL TOXICITY: No Data.

EFFECTS OF EXPOSURE:

INGESTION: Insufficient data available.

SKIN CONTACT: No data

EYE CONTACT: No data

INHALATION: No data

Medical conditions, if any, aggravated by the chemical: individuals with lung, liver, kidney and blood disorders.

Most likely routes of entry: Ingestion

CHRONIC EFFECTS:

INGESTION: May cause abdominal cramps. Tellurium has produced teratogenic effects (fetal death) in experimental animals.

SKIN CONTACT: None known

EYE CONTACT: None known

INHALATION: Chronic inhalation produces dyspnea, weight loss and decolonization of teeth. Damage to the lungs may be irreversible and there may be kidney, liver and blood disorders, may cause death.

OTHER: May increase the risk of prostate, respiratory and genitourinary cancers.

EMERGENCY AND FIRST AID PROCEDURES:

INGESTION: No data available but one should obtain medical attention.

SKIN CONTACT: Wash with soap and water.

EYE CONTACT: Immediately flush eyes, including under eyelids, with large amounts of water for at least 15 minutes. Call a physician.

INHALATION: No specific information available, one should obtain medical attention.

EFFECTS OF OVEREXPOSURE: High oral and respiratory toxicity. Irritant to skin, eyes, and mucous membranes. May cause cancer.

EMERGENCY AND FIRST AID PROCEDURES:

Remove from exposure.

EYES: Immediately flush with copious amounts of water for at least 15 minutes then seek prompt competent medical attention.

SKIN: Brush material off exposed area, remove any contaminated clothing, flush area with water for 15 minutes. If skin is burned seek prompt competent medical attention.

Inhalation/ ingestion: Immediately seek prompt, competent medical attention.

SECTION 5 – REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: Prolonged exposure to moist air may cause oxidation.

INCOMPATIBILITY: Acids, acid fumes or moisture.

HAZARDOUS DECOMPOSITION PRODUCTS: Mat emits toxic fumes of Cadmium Telluride Oxide.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 6 – SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Wearing respiratory protection and protective clothing (see sec. 8), cover spill with dry sand or dolomite, transfer to a properly marked metal container, close container and submit or retain for disposal. Wash spill area with soap and water.

WASTE DISPOSAL METHOD:

Consult local, state and federal regulations for proper disposal of Cadmium Telluride.

SECTION 7 – SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: NIOSH/ MSHA approved high efficiency particulate respirator for ordinary use and self-contained breathing apparatus for emergency use.

VENTILATION-LOCAL EXHAUST: Fume Hood

SPECIAL: Glove Box or box with dry inert atmosphere.

PROTECTIVE GLOVES: Rubber

EYE PROTECTION: Chemical safety goggles

OTHER PROTECTIVE EQUIPMENT: Flame and chemical resistant coveralls, laboratory coat and apron, eye wash fountain capable of sustained flushing, safety drench shower and hygienic facilities for washing.

SECTION 8 – SPECIAL PRECAUTIONS

PRECAUTIONARY LABELING: DANGER: cancer risk, irritates skin and eyes.

OTHER HANDLING AND STORAGE CONDITIONS: Wash thoroughly after handling. Keep container tightly closed. Store in a cool dry place away from acids, use adequate ventilation.

SECTION 9 – TRANSPORTATION INFORMATION U.S. D.O.T.

PER 49cfr 172.101

PROPER SHIPPING NAME: None

HAZARD CLASS OR DIVISION: None

PACKING GROUP: None

UN#: None

LABEL REQUIRED: None

SECTION 10 – COMMENTS

WARNING: THIS PRODUCT CONTAINS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER. This product contains Cadmium which is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right – to Know Act of 1986 and 40CFR 372. The data presented herein are believed to be accurate but are in no way guaranteed. We assume no liability in connection with any use for the products discussed, and it makes no warranty in that respect. It cannot be assumed that all safety measures are indicated herein or that other or additional measures may not be required. The user, therefore, must assume full responsibility, both as to persons and as to property, for the use of these materials.