

## CADMIUM TELLURIDE

### Section I

<b>Kurt J. Lesker Company</b> 1925 Worthington Avenue Clairton, PA 15025 Ph: 412/387-9200 Fax: 412/233-4275		Emergency Phone Numbers KJLC 800/245-1656 Chemtrec 800/424-9300 Poison Center 800/562-8236	
Chemical Name and Synonyms <b>Cadmium Telluride, Cadmium Monotelluride</b>		Date of Last Revision 12/2/90	
Formula CdTe	Chemical Family metal telluride	Chemical Abstract No. 1306-25-8	
TSCA Listed in the EPA TSCA Inventory		Calc. Molecular Wt. 240.0	

### Section II Hazardous Ingredients

Hazardous Ingredients	CAS #	%	TLV	OSHA PEL
Cadmium Telluride  Reported Chemical Sara Title III	1306-25-8	100	0.05mg/m <sup>3</sup> (as Cd) 0.1mg/m <sup>3</sup> (as Te)	200mg/m <sup>3</sup> (as Cd)

### Section III Physical Data

Boiling Point (0°C): 1121	Density (gmcc): 5.850 at 15 (6.2 at 15)
Vapor Pressure: NA	% Volatile by Volume: NA
Reaction with Water: may react exothermically	Evaporation Rate (H <sub>2</sub> O -1): NA
Solubility in Water: Practically insoluble	Melting Point (°C): 1041 (1091)
Appearance and Odor: Black/slightly gray powder/pieces	Other Comments: Oxidizes upon prolonged exposure to moist air. Practically insoluble in acids; decomposes in HNO <sub>3</sub>

### Section IV Fire & Explosion Hazard Data

Flash Point (method) NA	Autoignition Temp. NA	Flammability NA	LEI NA	UEI NA
Extinguishing Media: Do not use water. Use dry chemical, CO <sub>2</sub>				
Special Fire Fighting Procedures: Wear a self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes.				
Unusual Fire and Explosion Hazards: Material may emit toxic fumes of Cd and Te if involved in a fire, or on contact with acids or acidic fumes.				

### Section V Spill or Leak Process

Steps to be Taken in Case Material is Released or Spilled: Wear a self-
---

contained breathing apparatus and full protective clothing. Isolate the area where the spill occurred and insure that proper ventilation is available and that water/moisture are kept out of the area. Vacuum up spill using a high efficiency unit and place in a container for proper disposal. Take care not to raise dust.

Waste Disposal Method (Consult federal, state or local authorities for proper disposal procedures.): Dispose os in accordance with applicable federal, state and local regulations.

**Section VI Health Hazard Data**

<p>Toxicity Data          ipr-mus LD50: 2100mg/kg          ipr-rat LD50: 2820mg/kg</p>	<p>HMIS Hazard Rating          Health: 4*          Flammability: 0          Reactivity: 2          Personal Protection: X</p>
<p>Route(s) of Entry      Inhalation: X      Skin: X      Ingestion: X</p>	
<p>Effects of Overexposure (acute and chronic)          Inhalation: A respiratory irritant. Coughing, sneezing, difficulty breathing and pulmonary edema possible. May cause irritation of the mucous membranes of the nose and throat.          Dermal Contact: Irritation. Inflammation, redness possible. May cause dermatitis.          Eye Contact: Irritation. Inflammation, watering redness possible. rash of serious injury          Other (specify): See attached sheet.</p>	
<p>Medical Conditions Generally Aggravated by Exposure: Respiratory, skin disorders</p>	
<p>Carcinogenicity      NTP: yes      IARC Monographs: yes      OSHA Regulations: yes          (Tellurium suspect) cadmium</p>	
<p>Emergency and First Aid Procedures          Ingestion: Administer 1-2 glasses of water or milk and induce vomiting. Seek medical attention.          Inhalation: Remove victim to fresh air. Administer oxygen if breathing is difficult. Seek medical attention.          Skin Contact: Brush material off skin. Wash affected area with soap and water. Seek medical attention.          Eye Contact: Flush eyes with lukewarm water for 15 minutes. Seek medical attention.</p>	

**Section VII Reactivity Data**

<p>Stable:          Unstable: X</p>	<p>Conditions Contributing to Instability: Heat, air moisture/water</p>
<p>Incompatibility (materials to avoid): Strong acids, strong bases</p>	
<p>Hazardous Decomposition Products - Thermal and Other (list): Cd, Te, CdO, TeO<sub>2</sub></p>	
<p>Hazardous Polymerization          May Occur:          Will Not Occur: X</p>	<p>Conditions to Avoid: Heat air, moisture/water, incompatible materials.</p>

**Section VIII Special Protective Information**

<p>Respiratory Protection (specify type). Use Only Niosh Approved Equip.          Wear NIOSH approved dust/mist fume cartridge respirator.</p>
<p>Ventilation (always maintain exposure below permissible limits)</p>

Local Exhaust: Maintain exposure below TLV	
Mechanical (general): Not recommended	
Special: Handle in a dry, inert controlled atmosphere.      Other: NA	
Protective Gloves: Neoprene	Eye Protection: Safety glasses
Other Protective Equipment/Work Practices: Wear protective clothing to prevent contamination of skin and clothes.	

**Section IX                      Special Precautions**

Precautions to be Taken in Handling and Storing: Store in tightly closed containers in a cool, dry place. Wash hands and face thoroughly after handling and before eating.
Transportation Requirements DOT Class: Not classified UN Number: 2570 IMCO Class: 6.1 Other:

The above information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse are beyond our control, the Kurt J. Lesker Company makes no warranty, either express or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon: User should satisfy himself that he had all current data relevant to his particular use.

ND = NO DATA FOUND                      NA = NOT APPLICABLE

Effects of Overexposure

Cadmium compounds are experimental carcinogens. The oral toxicity of Cd and its compounds is high. However, when these materials are ingested, the irritant and emetic action is so violent that little of the Cd is absorbed and fatal poisoning does not as a rule ensue. Cases of human Cd poisoning have been reported from ingestion of food or beverages prepared or stored in Cd-plated containers. The inhalation of fumes or dusts of Cd primarily affects the respiratory tract; the kidneys may also be affected. Even brief exposure to high concentrations may result in pulmonary edema and death. Usually the edema is not massive, with little pleural effusion. In fatal cases, fatty degeneration of the liver and acute inflammatory changes in the kidneys have been noted. Ingestion of Cd results in a gastro intestinal type of poisoning resembling food poisoning in its symptoms. Inhalation of dust or fumes may cause dryness of the throat, cough, headache, a sense of constriction in the chest, shortness of breath (dyspnea) and vomiting. More severe exposure results in marked lung changes, with persistent cough, pain in the chest, severe dyspnea, and prostration which may terminate fatally. X-ray changes are usually similar to those seen in bronchi-pneumonia. The urine is frequently dark.

These symptoms are usually delayed for some hours after exposure, and fatal concentrations may be breathed without sufficient discomfort to warn the workpersons to leave the exposure. There is some evidence of teratogenicity. Ingestion of Cd results in sudden nausea, salivation, vomiting and diarrhea and

abdominal pain and discomfort. Symptoms begin almost immediately after ingestion. A yellow discoloration of the teeth has been reported in workers exposed to Cd. Cadmium oxide fumes can cause metal fume fever resembling that caused by zinc oxide fumes.

Elemental tellurium has relatively low toxicity. It is converted in the body to dimethyl telluride which imparts a garlic-like odor to the breath and sweat. Heavy exposures may, in addition, result in headache, drowsiness, metallic taste, loss of appetite and nausea. Various tellurium salts may also product similar symptoms. Large doses can be fatal, as was the case following accidental administration of sodium tellurite.