



MATERIAL SAFETY DATA SHEET
COMPLIES WITH 29 CFR 1910.1200.
OSHA HAZARD COMMUNICATION RULE

DATE OF LAST REVISION: 03-04-07

CHEMICAL IDENTITY

LABEL IDENTITY	CADMIUM TELLURIDE
CHEMICAL NAME/SYNONYMS	CADMIUM MONOTELLURIDE
FORMULA	CdTe
CHEMICAL FAMILY	METAL TELLURIDE
CAS REGISTRY NUMBER	1306-25-8, LISTED IN THE TSCA INVENTORY
HAZARDOUS INGREDIENTS	CADMIUM TELLURIDE
%: 100	TLV: 0.05mg/m3 OSHA/PEL: 200mg/M3
	(as Cd) (as Cd)
Reportable Chemical Sara Title III	0.1mg/m3

PHYSICAL AND CHEMICAL PROPERTIES

COLOR, FORM AND ODOR	Black, slightly gray powder/pieces
BOILING POINT	1121
DENSITY (gm/cc)	5.80 @ 15 (6.2 @ 15)
VAPOR PRESSURE @ 20°	NA
% VOLATILE BY VOLUME (%)	NA
REACTION WITH WATER	NA
EVAPORATION RATE (H2O=1)	NA
SOLUBILITY IN WATER	Practically Insoluble
MELTING POINT	1041 (1091)
OTHER	Oxidizes upon prolonged exposure to moist air. Practically insoluble in acid, decomposes in HNO3

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	NA
AUTOIGNITION TEMPERATURE (° C)	NA
FLAMMABILITY	Non-flammable
EXTINGUISHING MEDIA	Use dry chemical, CO₂. DO NOT USE WATER!
SPECIAL FIRE FIGHTING PROCEDURES	Wear a self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes.
UNUSUAL FIRE & EXPLOSION HAZARDS	Material may emit toxic fumes of Cd and Te if involved in a fire, or upon contact with acids or acidic fumes.



CADMIUM TELLURIDE MATERIAL SAFETY DATA SHEET

HEALTH HAZARD INFORMATION

TOXICITY DATA ipr-mus LD50: **2100/mg/kg** ipr-rat LD50: **2820mg/kg**

HMIS RATING:

HEALTH: **4** FLAMMABILITY: **0** REACTIVITY: **2** PERSONAL PROTECTION: **X**

ROUTES OF ENTRY

INHALATION: **Yes**
SKIN: **Yes**
INGESTION: **Yes**

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: **Respiratory, skin disorders**

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: **irritation. Inflammation, redness possible, may cause dermatitis.**

EYE: **irritation. Inflammation, watering, redness possible. Risk of serious injury.**

OTHER: ***SEE ATTACHED SHEET***

CARCINOGENICITY: **YES (Tellurium-suspect)** NTP: **Yes**

IARC MONOGRAPHS: **Yes** OSHA REGULATE: **Yes**

EMERGENCY FIRST AID PROCEDURES:

INGESTION: **Administer water or milk and induce vomiting, seek medical attention**

INHALATION: **Remove to fresh air, give oxygen if necessary, seek medical attention**

SKIN CONTACT: **Wash affected area with soap and water, seek medical attention**

EYE CONTACT: **Flush eyes for at least 15 minutes with lukewarm water, seek medical attention.**

REACTIVITY DATA

STABILITY

CONDITIONS CONTRIBUTING TO UNSTABILITY

INCOMPATIBILITY (MATERIALS TO AVOID)

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUD POLYMERZATION

CONDITIONS TO AVOID

Unstable

Heat, air, moisture/water

Strong acids, Strong bases

Cd, Te, CdO, TeO2

Will Not Occur

Heat, air, moisture/water, incompatible materials



CADMIUM TELLURIDE MATERIAL SAFETY DATA SHEET

SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Wear self-contained breathing apparatus and full protective clothing, isolate area spill occurred and ensure proper ventilation is available and that no water/moisture are kept out of the area. Vacuum up the spill and place in container for proper disposal. Take care not to raise dust.

WASTE DISPOSAL METHOD:

Consult federal, state and local regulations for proper disposal.

SPECIAL PROTECTIVE INFORMATION

RESPIRATORY PROTECTION	NIOSH approved dust-mist-fume cartridge respirator
LOCAL EXHAUST	Maintain below TLV
MECHANICAL (general)	Not recommended
SPECIAL	Handle in dry, inert controlled atmosphere
OTHER	NA
PROTECTIVE GLOVES	Neoprene
EYE PROTECTION	Safety glasses
OTHER PROTECTIVE EQUIPMENT	Wear protective clothing to prevent contamination of skin and clothes

SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE:

Store in tightly closed container in a cool dry place. Wash hands and face thoroughly after handling and before meals.

TRANSPORTATION REQUIREMENTS	DOT CLASS:	Not Classified
	UN NUMBER:	2570
	IMCO CLASS:	6.1
	OTHER:	

PRECAUTIONARY LABELING **NONE**

THE ABOVE INFORMATION IS ACCURATE TO THE BEST OF OUR KNOWLEDGE. HOWEVER, SINCE DATA, SAFETY STANDARDS AND GOVERNMENT REGULATIONS ARE SUBJECT TO CHANGE THE CONDITIONS OF HANDLING AND USE, OR MISUSE ARE BEYOND OUR CONTROL, **ANGSTROM SCIENCES** MAKE NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR THE RELIANCE THEREON. USER SHOULD SATISFY HIMSELF THAT HE HAS ALL CURRENT DATA RELEVANT TO HIS PARTICULAR USE.

NA= NOT APPLICABLE

ND= NO DATA FOUND



EFFECTS OF OVEREXPOSURE OTHER : CONTINUED

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 occur as a rule. 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 effects 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 gastrointestinal type of 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 (sypnea) and vomiting. More severe exposure results in the 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, 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 produce similar symptoms. Large doses can be fatal, as was the case following accidental administration of sodium tellurium.