MATERIAL SAFETY DATA SHEET

I PRODUCT IDENTIFICATION

Trade Name: Cadmium Telluride
Chemical Name: Cadmium Telluride
Molecular Weight: 240
Formula: CdTe
Chemical Nature: Inorganic
CAS #: 1306-25-8

II HAZARDOUS INGREDIENTS

Cadmium Telluride Wt. %: 99.9+

Permissible Air Concentration (mg/m^3): **OSHA**: 0.005 as Cd/0.1 as Te
ACGIH: Cd and its cmpds-0.01 total, 0.002 resp. 0.1 as Te

SARA Title III Sect. 313 Chem: Yes

III PHYSICAL DATA

Appearance and Odor: Black cubic crystalline powder
Boiling Point (°C): N/A
Vapor Density (Air=1): N/A
Vapor Pressure: N/A
Evaporation Rate: N/A
Melting Point (°C): 1041
Specific Gravity: 6.2 (H_2O=1)
Solubility in Water: Insoluble
pH: N/A

IV FIRE AND EXPLOSION HAZARDS DATA

Flash Point (Method used): N/A
Flammable Limits in Air: N/A

Autoignition Temperature: N/A

Fire Extinguishing Agents to Avoid: No specific agents
Fire Extinguishing Agents Recommended: No special agents recommended
Unusual Fire & Explosion Hazard: Finely divided powder may burn if ignited with evolution of hazardous CdO fume.

Special Firefighting Procedures: Use NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing if involved in fire.

V HEALTH HAZARD INFORMATION

Primary Route of Entry: Inhalation

Carcinogenicity: IARC classifies cadmium and certain cadmium compounds as Group 2A carcinogens (probably carcinogenic to humans). NTP classifies these materials as "...substances that may reasonably be anticipated to be carcinogens."

Acute Overexposure (Symptoms and Effects): Inhalation of dust of fumes from cadmium or its compounds may cause irritation of the nose and throat. If high concentrations are inhaled (especially freshly formed fume), a delayed reaction of coughing, chest pain, sweating chills, shortness of breath and weakness may develop. In severe cases, death may result from pulmonary edema. Ingestion of cadmium may cause nausea, vomiting, diarrhea and abdominal cramps. Acute exposure to tellurium may cause garlic odor of the breath and perspiration, dry mouth, metallic taste, sleepiness, loss of appetite and nausea.

Chronic Overexposure (Symptoms and Effects): Long term overexposure may cause lung injury (emphysema) and kidney dysfunction (proteinuria). Bone lesions characterized by pain in the back and extremities have also been reported. Inhalation of cadmium and its compounds may pose an increased risk of lung cancer and possibly other forms of cancer. Chronic overexposure to tellurium may cause garlic odor of breath, perspiration, dry mouth, metallic taste, sleepiness, loss of appetite and nausea. Oral administration of tellurium has been reported to produce kidney and nerve damage in experimental animals and teratogenesis in pregnant rats.

Medical Conditions Possibly Aggravated: Diseases of the lung and kidney

EMERGENCY AND FIRST AID MEASURES:

INHALATION: Remove from overexposure individual under care of a physician.
INGESTION: Induce vomiting in conscious individual and call a physician.
SKIN OR EYES: Flush with plenty of water. If symptoms develop, consult a physician.

VI REACTIVITY DATA

Stability: Stable
Conditions to Avoid: N/A
Incompatibility (Material to avoid): None Known

Hazardous Decomposition Products: At temperature above the melting point, metal oxide fumes may be evolved.
Hazardous Polymerization: Will not occur
Conditions to Avoid: N/A

VII SPILL OR LEAK PROCEDURES

Normal Handling: Use of approved respirators is required for applications where adequate ventilation cannot be provided. Activities which generate dust or fume should be avoided. When melted, the temperature should be kept as low as possible.
Spill or Leak: Any method which keeps dust to a minimum is acceptable. Vacuuming is preferred for dust. Use approved respiratory protection if possibility of dust/fume exposure exists. Do not use compressed air for cleaning.

Engineering Controls: Local exhaust is recommended for dust and/or fume generating operations where airborne exposures may exceed permissible air concentrations.

Storage: General storage procedures acceptable.
Personal Hygiene: Avoid inhalation or ingestion. Practice good housekeeping and personal hygiene procedures. No tobacco or food in work area. Wash thoroughly before eating or smoking. Shower and change clothes at end of work shift. Do not wear contaminated clothing home. Do not blow dust off clothing with compressed air.

Special Precautions/Procedures/Label Instructions: There is currently no substance specific standard for cadmium and its other than air contaminant tables in 1910.1000.

VIII SPECIAL PROTECTION INFORMATION

Respiratory Protection: Where airborne exposures may exceed OSHA/ACGIH permissible air concentrations, the minimum respiratory protection recommended is a negative pressure air purifying respirator with cartridges that are NIOSH/MSHA approved against dust, fumes and mists having a TWA less than 0.05 mg/m^3.

Eyes and Face: Safety glasses recommended where the possibility of getting dust particles in eyes exists.

Other Clothing and Equipment: Full protective clothing is recommended for exposure that exceed permissible air concentrations. All contaminated clothing should be removed before leaving plant premises.

IX SPECIAL PRECAUTIONS

Regulated by DOT: Not regulated
Waste Disposal Method (Must comply with Federal, State, and Local disposal or discharge laws): If hazardous under 40 CFR 261. Subparts B and C, material must be treated or disposed in a facility meeting the requirements of 40 CFR 264 or 265. If non-hazardous, material should be disposed in a facility meeting the requirements of 40 CFR 257.

RCRA Status of Unused Material: If discarded in unaltered form, material should be tested to determine if it must be classified as a hazardous waste for disposal purposes. Under specific circumstances, application can be made to the EPA Administration to have a particular waste designated non-hazardous.

WARNING: The State of California has listed cadmium as a known to cause cancer.

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Dated: June 1993