Kurt J. Lesker Company MATERIAL SAFETY DATA SHEET

BISMUTH TELLURIDE

Section I

Kurt J. Lesker Company 1925 Worthington Avenue Clairton, PA 15025 Ph: 412/387-9200 Fax: 412/233-4275	Emergency Phone Numbers Chemtrec 800/424-9300 Poison Center 800/562-8236

Chemical Name and Synonyms **Bismuth Telluride**	Date of Last Revision 11/27/990

Formula Bi_2Te_3	Chemical Family Metal Telluride	Chemical Abstract No. 1304-82-1
TSCA Listed in the EPA TSCA Inventory		Calc. Molecular Wt. 800.76

Section II Hazardous Ingredients

Hazardous Ingredients	CAS #	%	TLV	OSHA PEL
Bismuth Telluride	1304-82-1	100	$10mg/m^3$	$0.1mg/m^3$ (Te)

Section III Physical Data

Boiling Point ($0^{\circ}C$): ND	Density (gmcc): 7.7
Vapor Pressure: NA	% Volatile by Volume: NA
Reaction with Water: Decomposes	Evaporation Rate (H_2O -1): NA
Solubility in Water: Decomposes	Melting Point ($^{\circ}C$): 5.73
Appearance and Odor: Gray crystals/pieces	Other Comments: Decomposes in HNO_3

Section IV Fire & Explosion Hazard Data

Flash Point (method) NA	Autoignition Temp. NA	Flammability non-flammable	LEI NA	UEI NA

Extinguishing Media: Use dry chemical, CO_2, 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 and Explosion Hazards: Reacts with moisture or water to emit a very toxic gas. When heated to decompose, it may emit toxic fume of Bi, Te, TeO_x. It is a moderate fire hazard by spontaneous chemical reaction with powerful oxidizers.

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, insure proper ventilation is available and that water/moisture are kept out of the area. Vacuum up the 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 of in accordance with applicable federal, state, and local regulations.

Section VI Health Hazard Data

Toxicity Data	HMIS Hazard Rating
No specific data on this compound Te data orl-rat TDLO: 3300mg/kg (1-22Dpreg) ims-rat TDLO: 13mg/kg(IODpreg) orl-rat TDLO: 3465mg/kg/(1-21Dpreg)TFX:TER ims-rat TDLO: 13mg/kg/C9Dpreg)TFX:TER itr-rat LDLO: 200mg/kg scu-icg LDLO: 290mg/kg Bi data unk-man LDLO: 22/mg/kg TeO_2 data itr-rat LDLO: 120mg/kg unk-rbt LDLO: 324mg/kg	Health: 3* Flammability: 0 Reactivity: 2 Personal Protection: J

Route(s) of Entry Inhalation: X Skin: X Ingestion: X

Effects of Overexposure (acute and chronic)
Inhalation: Bi Compounds: may be a nuisance dust. Possible irritation of the nose, throat and respiratory tract. Severe overexposure may lead to headache, diarrhea, vomiting and blue-gray gum line. Te/TeO_x: cause nausea, vomiting, and CNS depression. Impart garlic odor to the breath. Heavy exposure results in headache, drowsiness, metallic taste and loss of appetite.
Dermal: Bi and Te compounds can cause a variety of skin abnormalities including dermatitis, irritation and itching.
Eye Contact: May cause irritation, burning sensation, redness and watering of the eyes if comes in contact.
Ingestion: Large doses of Te compounds can be fatal. Tellurium is an experimental teratogen. Chronic exposure to Bi compounds can cause mild kidney damage in addition to serious ulcerative edematous. Other toxic effects include diarrhea, nausea, vomiting, headache, anorexia, pain, skin lesions, serious exedermatitis, and blue-gray gum line are possible from ingestion of large amounts.
Other (specify):

Medical Conditions Generally Aggravated by Exposure: Respiratory disorders.

Carcinogenicity: NTP: No IARC Monographs: No OSHA Regulations: No

Emergency and First Aid Procedures
Ingestion: Give 1-2 cups of milk or water and induce vomiting. Seek immediate medical attention.
Inhalation: Remove to fresh air; give oxygen if breathing is difficult. Seek medical attention.
Skin Contact: Brush off skin and wash area with soap and water.
Eye Contact: Flush eyes with lukewarm water for 15 minutes and seek medical attention.

Section VII Reactivity Data

Stable: X Unstable:	Conditions Contributing to Instability: None

Incompatibility (materials to avoid): Water or steam and oxidizing materials.

Hazardous Decomposition Products - Thermal and Other (list): Sb, Sb_2O_3, Te, Te, O_x	
Hazardous Polymerization May Occur: Will Not Occur: X	Conditions to Avoid: Heat, flame, water/steam and oxidizers

Section VIII Special Protective Information

Respiratory Protection (specify type). Use Only Niosh Approved Equip. Wear NIOSH-approved dust-mist-fume cartridge respirator.	
Ventilation (always maintain exposure below permissible limits) Local Exhaust: Maintain below TLV for Sb and Te 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 contact with 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 meals.
Transportation Requirements DOT Class: Not classified UN Number: 1549 IMCO Class: 6.1 Other:

ND = NO DATA FOUND NA = NOT APPLICABLE