Kurt J. Lesker Company MATERIAL SAFETY DATA SHEET

LEAD TITANATE

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 **Lead Titanate, Lead Titanium Oxide**	Date of Last Revision 3/15/91

Formula $PbTiO_3$	Chemical Family Metal Titanate	Chemical Abstract No. 12060-00-3
TSCA Listed in the EPA TSCA inventory		Calc. Molecular Wt. 303.06

Section II Hazardous Ingredients

Hazardous Ingredients	CAS #	%	TLV	OSHA PEL
Lead Titanate	12060-00-3	100	Not set	Not set
			$0.15mg/m^3$ (Pb)	$0.15mg/m^3$ (Pb)

Section III Physical Data

Boiling Point ($0^{\circ}C$): ND	Density (gmcc): 7.52
Vapor Pressure: NA	% Volatile by Volume: NA
Reaction with Water: None	Evaporation Rate (H_2O -1): NA
Solubility in Water: Insoluble	Melting Point ($^{\circ}C$): ND
Appearance and Odor: Pale-yellow solid, odorless	Other Comments:

Section IV Fire & Explosion Hazard Data

Flash Point (method)	Autoignition Temp.	Flammability	LEI	UEI
NA	NA	Non-flammable	NA	NA
Extinguishing Media: Use dry chemical, CO_2				
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: When heated to decomposition, it may emit toxic 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. 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 of in accordance with applicable federal, state and local regulations.

Section VI Health Hazard Data

Toxicity Data *no specific data for this compound* Pb data: orl-rat TDLO: 790mg/kg (MGN) inv-ham TDLO: 50mg/kg/(8D preg) ipr-rat LDLO: 1000mg/kg Ti Data: ims-rat TDLO: 114mg/kg/77W-I TFX:ETA ims-rat TD: 360mg/kg/69W-I TFX:ETA	HMIS Hazard Rating Health: 4* Flammability: 0 Reactivity:0 Personal Protection: X

Route(s) of Entry Inhalation: Yes Skin: Yes Ingestion: Yes
Effects of Overexposure (acute and chronic) Inhalation: May cause sneezing, coughing, difficulty breathing and irritation of the mucus membrane of the respiratory tract. Dermal: May cause irritation, itching and dermatitis. Eye Contact: May cause burning sensation, irritation, redness and watering of the eyes is comes in contact. 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 glasses of milk or water and induce vomiting. Seek immediate medical attention. Inhalation: Remove victim to fresh air. Administer oxygen if breathing is difficult. 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.

Section VII Reactivity Data

Stable: X Unstable:	Conditions Contributing to Instability: None
Incompatibility (materials to avoid): Strong acids, strong bases.	
Hazardous Decomposition Products - Thermal and Other (list): Pb, PbOx, Ti, TiOx	
Hazardous Polymerization May Occur: Will Not Occur: X	Conditions to Avoid: Heat, flame and incompatible materials.

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 exposure below TLV level for Pb. Mechanical (general): Not recommended. Special: Handle in a dry, controlled environment 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: Not classified IMCO Class: Not classified Other: NA

ND = NO DATA FOUND NA = NOT APPLICABLE

Other

Industrial lead poisoning commonly occurs following prolonged exposure to lead or its compounds. The common clinical types of lead poisoning may be classified according to their clinical picture as (a) alimentary; (b) neuromotor; and (c) encephalic. Some cases may show a combination of clinical types. The alimentary type occurs most frequently, and is characterized by abdominal discomfort and pain. Severe cases may present actual colic. Other complaints are constipation and/or diarrhea, loss of appetite, metallic taste, nausea and vomiting, lassitude, insomnia, weakness, joint and muscle pains, irritability, headache and dizziness. Pallor, lead line on the gums, pyorrhea, loss of weight, abdominal tenderness, basophilic stippling, anemia, slight albuminuria, increased urinary excretion, and an increase in the lead content of the whole blood, are signs which may accompany the above symptoms.

In the neuromuscular type, the chief complaint is weakness, frequently of the extensor muscles of the wrist and hand, unilateral or bilateral. Other muscle groups which are subject to constant use may be affected. Gastroenteric symptoms are usually present, but are not as severe as in the alimentary type of poisoning. Joint and muscle pains are likely to be more severe. Headache, dizziness an insomnia are frequently prominent. True paralysis is uncommon, and usually is the result of prolonged exposure.

Lead encephalopathy is the most severe but rarest manifestation of lead poisoning. In the industrial worker it follows rapid and heavy lead absorption. Organic lead compounds, such as tetraethyl lead, are absorbed rapidly through the skin as well as through the lungs, and are selectively absorbed by the CNS. With inorganic lead compounds, comparable concentrations in the CNS are reached only when the workplace is heavily contaminated with vapor, fume and dust. Encephalopathy begins abruptly, and is characterized by signs of cerebral and meningeal involvement. There is usually stupor, progress to coma, with or without convulsion, and often terminating in death. Excitation, confusion and mania are less common. In milder cases of short duration,t here may be symptoms of headache, dizziness, somnolence and insomnia. The cerebrospinal pressure may be increased.

Ti Compounds

This material is considered to be physiologically inert. There are no reported cases in the literature where titanium as such has caused intoxication. The dusts of titanium or titanium compounds such as titanium oxide amy be placed in the nuisance category.