

# SAFETY DATA SHEET

Date Issued : 5/2/2012  
MSDS No : M-2200-165

## Lead Oxide Pieces

### 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Lead Oxide Pieces

**GENERAL USE:** Physical vapor deposition of thin films

**GENERIC NAME:** Lead(II) oxide, Lead monoxide

#### MANUFACTURER

Kurt J Lesker Company

United States

1925 Route 51

Jefferson Hills, PA 15025

**Customer Service:** 412-387-9200

**E-Mail:** msds@lesker.com

Kurt J Lesker Company LTD

United Kingdom

15-16 Burgess Road

Hastings, East Sussex, TN35 4NR

England

**Customer Service:** +44 (0) 1424 458100

#### 24 HR. EMERGENCY TELEPHONE NUMBERS

24-Hour Emergency Response provided by  
3E Global Incident Response Hotline

When calling, refer to Kurt J Lesker Company  
Global Response Access Code: 333594

North America [USA, Canada, Mexico]: 1-866-519-4752

Mainland China: (+86) 4001 2001 74

Europe: {int'l call prefix}-1-760-476-3961

Asia Pacific: {int'l call prefix}-1-760-476-3960

Middle East & Africa: {int'l call prefix}-1-760-476-3959

### 2. HAZARDS IDENTIFICATION

#### GHS CLASSIFICATIONS

##### Health:

Target Organ Toxicity (Repeated exposure), Category 2

Acute Toxicity (Inhalation), Category 4

Acute Toxicity (Oral), Category 4

Reproductive Toxicity, Category 1A

##### Environmental:

Acute Hazards to the Aquatic Environment, Category 1

Chronic Hazards to the Aquatic Environment, Category 1

#### GHS LABEL



Health  
hazard



Environment



Exclamation  
mark

#### HAZARD STATEMENTS

H332: Harmful if inhaled.

H302: Harmful if swallowed.

H360: May damage fertility or the unborn child .

H373: May cause damage to organs through prolonged or repeated exposure .

H410: Very toxic to aquatic life with long lasting effects.

**PRECAUTIONARY STATEMENT(S)****Prevention:**

P260: Do not breathe dust/fume/gas/mist/vapours/spray.  
 P202: Do not handle until all safety precautions have been read and understood.  
 P273: Avoid release to the environment.

**Response:**

P304+P340: IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.  
 P301+A1600: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
 P391: Collect spillage.

**EMERGENCY OVERVIEW**

**PHYSICAL APPEARANCE:** Yellow solid

**IMMEDIATE CONCERNS:** Harmful if swallowed. Harmful if inhaled. May damage fertility or the unborn child .

**POTENTIAL HEALTH EFFECTS**

**EYES:** Contact may cause eye irritation.

**SKIN:** Prolonged or repeated contact may cause skin irritation.

**SKIN ABSORPTION:** May be harmful in contact with skin.

**INGESTION:** Harmful if swallowed.

**INHALATION:** Harmful if inhaled. May cause respiratory irritation.

**CARCINOGENICITY:** IARC Group 2A - Probably carcinogenic to humans.

**ROUTES OF ENTRY:** Inhalation, ingestion, eye contact, or skin contact.

**TARGET ORGAN STATEMENT:** Blood, Central nervous system

**IRRITANCY:** May cause irritation of skin, eyes, and respiratory tract.

**PHYSICAL HAZARDS:** This substance is not considered hazardous in the form supplied.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

Chemical Name	Wt. %	CAS
Lead Oxide	100	1317-36-8

**4. FIRST AID MEASURES**

**EYES:** Immediately flush eyes with plenty of water. Get medical attention, if irritation persists.

**SKIN:** Wash with soap and water. Get medical attention if irritation develops or persists.

**INGESTION:** Rinse mouth. Get medical advice/attention.

**INHALATION:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.

**SIGNS AND SYMPTOMS OF OVEREXPOSURE**

**INGESTION:** Nausea, vomiting, abdominal pain.

**5. FIRE FIGHTING MEASURES**

**FLAMMABLE CLASS:** Not flammable.

**EXTINGUISHING MEDIA:** Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.

**EXPLOSION HAZARDS:** Dusts at sufficient concentrations can form explosive mixtures with air.

**FIRE FIGHTING PROCEDURES:** As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective gear.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Toxic metal fumes

## 6. ACCIDENTAL RELEASE MEASURES

**SMALL SPILL:** Clean up spills immediately, observing precautions in Protective Equipment section.

**LARGE SPILL:** Collect spilled material in appropriate container. Spill may be reportable . Consult section 15 for Reportable Quantities.

### ENVIRONMENTAL PRECAUTIONS

**WATER SPILL:** This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water.

**GENERAL PROCEDURES:** Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all ignition sources if safe to do so. Avoid formation of dust. Provide appropriate exhaust ventilation where dust is formed. Avoid breathing (dust, vapor, mist, gas). Practice good chemical hygiene during and after use. Avoid release to the environment.

## 7. HANDLING AND STORAGE

**GENERAL PROCEDURES:** To avoid risks to human health and the environment, comply with the instructions for use.

**HANDLING:** Keep away from heat and flame. Keep container closed when not in use. Remove contaminated clothing and wash before reuse. Wash hands before eating and wash before reuse. Wash thoroughly after handling.

**STORAGE:** Keep container closed when not in use. Store in a cool dry place.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**ENGINEERING CONTROLS:** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

### PERSONAL PROTECTIVE EQUIPMENT

**EYES AND FACE:** Wear safety glasses with side shields (or goggles) and a face shield.

**SKIN:** Wear protective gloves/protective clothing/eye protection/face protection. Wash contaminated clothing before reuse.

**RESPIRATORY:** If ventilation is inadequate and this material is handled at elevated temperatures or dusts/fumes/mists are generated a NIOSH/MSHA approved air purifying respirator with a manufacturers approved cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

**WORK HYGIENIC PRACTICES:** Practice good chemical hygiene during and after use.

**COMMENTS:**

## COMPONENT EXPOSURE LIMITS

Component	Location, Type	Value (mg/m3)
Lead	ACGIH TLV TWA	0.05
	OSHA PEL TWA	0.05
	NIOSH REL TWA	0.05
	Canada - AB, BC, ON, PQ TWA	0.05
	Europe TWA	0.15
	Austria, Germany TWA	0.1
	Hungary, Poland TWA	0.05
	Sweden, Switzerland TWA	0.1
	Australia, Singapore TWA	0.15
	New Zealand TWA	0.1
	UK WEL TWA	0.15

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**PHYSICAL STATE:** Solid

**ODOR:** None

**COLOR:** Pale Yellow

**pH:** NA = Not Applicable

**PERCENT VOLATILE:** NA = Not Applicable

**FLASH POINT AND METHOD:** NA = Not Applicable

**FLAMMABLE LIMITS:** NA = Not Applicable

**AUTOIGNITION TEMPERATURE:** NA = Not Applicable

**VAPOR PRESSURE:** Not Available

**VAPOR DENSITY:** Not Available

**BOILING POINT:** 1477°C

**MELTING POINT:** 888°C

**SOLUBILITY IN WATER:** Soluble

**DENSITY:** 9.53 at 25°C

**MOLECULAR WEIGHT:** 223.20

## 10. STABILITY AND REACTIVITY

**STABLE:** Yes

**HAZARDOUS POLYMERIZATION:** No

**HAZARDOUS DECOMPOSITION PRODUCTS:** Toxic metal fumes

**INCOMPATIBLE MATERIALS:** Strong acids, Strong bases, Oxidizing materials, Halogens, Sulphur compounds, Peroxides.

## 11. TOXICOLOGICAL INFORMATION

**ACUTE**

**DERMAL LD<sub>50</sub>:** Not Available

**SKIN ABSORPTION:** Not Available

**ORAL LD<sub>50</sub>:** Not Available

**INHALATION LC<sub>50</sub>:** Not Available

**CARCINOGENICITY**

**IARC:** Group 2A - Probably carcinogenic to humans.

**NTP:** Reasonably anticipated to be a human carcinogen.

**OSHA:** Listed

**REPRODUCTIVE EFFECTS:** May damage fertility or the unborn child .

**TERATOGENIC EFFECTS:** Not Available

**MUTAGENICITY:** Not Available

**12. ECOLOGICAL INFORMATION**

**BIOACCUMULATION/ACCUMULATION:** Not Available

**AQUATIC TOXICITY (ACUTE):** Not Available

**CHEMICAL FATE INFORMATION:** Not Available

**13. DISPOSAL CONSIDERATIONS**

**DISPOSAL METHOD:** Dispose of according to applicable federal, state, provincial, and local regulations.

**PRODUCT DISPOSAL:** Contact a licensed waste disposal company.

**EMPTY CONTAINER:** Follow all MSDS/label precautions even after container is emptied because it may retain product residues.

**14. TRANSPORT INFORMATION****DOT (DEPARTMENT OF TRANSPORTATION)**

**PROPER SHIPPING NAME:** Lead compound, soluble, n.o.s.

**TECHNICAL NAME:** Lead oxide

**PRIMARY HAZARD CLASS/DIVISION:** 6.1

**UN/NA NUMBER:** 2291

**PACKING GROUP:** III

**MARINE POLLUTANT #1:** Yes

**ROAD AND RAIL (ADR/RID)**

**PROPER SHIPPING NAME:** Lead compound, soluble, n.o.s.

**UN NUMBER:** 2291

**HAZARD CLASS:** 6.1

**PACKING GROUP:** III

**AIR (ICAO/IATA)**

**SHIPPING NAME:** Lead compound, soluble, n.o.s.  
**TECHNICAL NAME:** Lead oxide  
**UN/NA NUMBER:** 2291  
**PRIMARY HAZARD CLASS/DIVISION:** 6.1  
**PACKING GROUP:** III

**VESSEL (IMO/IMDG)**

**SHIPPING NAME:** Lead compound, soluble, n.o.s.  
**TECHNICAL NAME:** Lead oxide  
**UN/NA NUMBER:** 2291  
**PRIMARY HAZARD CLASS/DIVISION:** 6.1  
**PACKING GROUP:** III  
**EmS:** F-A, S-A  
**MARINE POLLUTANT #1:** Yes

**CANADA TRANSPORT OF DANGEROUS GOODS**

**SHIPPING NAME:** Lead compound, soluble, n.o.s.  
**TECHNICAL NAME:** Lead oxide  
**UN/NA NUMBER:** 2291  
**PRIMARY HAZARD CLASS/DIVISION:** 6.1  
**PACKING GROUP:** III

**15. REGULATORY INFORMATION**

**UNITED STATES**

**SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)**

**311/312 HAZARD CATEGORIES:** Acute health hazard. Chronic health hazard.  
**313 REPORTABLE INGREDIENTS:** Yes

**TSCA (TOXIC SUBSTANCE CONTROL ACT)**

**TSCA STATUS:** All components of this product are included in inventory, exempt, or notified

**REGULATIONS**

**STATE REGULATIONS:**

The following components appear in one or more of the following state hazardous substances lists

Component	CAS	CA	MA	MN	NJ	PA	RI
Lead compounds	N/A	Yes	Yes	No	Yes	Yes	Yes

**CALIFORNIA PROPOSITION 65:** This material may contain the following components which are known to the State of California to cause cancer, birth defects or other reproductive harm and may be subject to the requirements of California Propostion 65 (CA Health and Safety Code section 25249.5) : Lead

## CANADA

### WHMIS HAZARD SYMBOL AND CLASSIFICATION



Poison



Toxic

D1B

D2A

**DOMESTIC SUBSTANCE LIST (INVENTORY):** All components of this product are included in inventory, exempt, or notified

## 16. OTHER INFORMATION

**APPROVED BY:** EHS DEPT

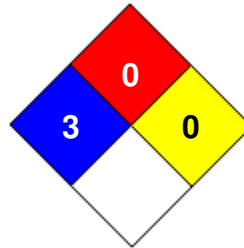
**PREPARED BY:** E Bolton

**INFORMATION CONTACT:** msds@lesker.com

### HMIS RATING

<b>HEALTH</b>	*	2
<b>FLAMMABILITY</b>		0
<b>PHYSICAL HAZARD</b>		0
<b>PERSONAL PROTECTION</b>	F	

### NFPA CODES



### MANUFACTURER DISCLAIMER:

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