LEAD OXIDE, YELLOW
MATERIAL SAFETY DATA SHEET

INTEGRA Chemical Company
1216 6th Ave N
Kent WA 98032
Phone: 253-479-7000
24 Hour Emergency Response: CHEMTREC 800-424-9300 (Outside USA 703-527-3887)

Product Identification

Product Name: LEAD OXIDE, YELLOW
Synonyms: Lead monoxide; Litharge; Lead (II) oxide; Massicot
Chemical Formula: PbO
Formula Weight: 223.21
Chemical Family:
Integra Product Numbers: L284.10

Hazard Overview

HMIS Rating: 3-0-1-F NFPA Rating: NE
Warning Label: DANGER!
POISON!
May be fatal if swallowed or inhaled. May cause irritation. Use only with adequate protective equipment and ventilation. Avoid contact with skin eyes or clothing. Wash thoroughly after handling.

Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead oxide</td>
<td>01317-36-8</td>
<td>100</td>
</tr>
</tbody>
</table>

Physical Data

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point</td>
<td>NA</td>
</tr>
<tr>
<td>Melting Point</td>
<td>888 °C</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>9.53</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>NA</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>NA</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>NA</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble in water.</td>
</tr>
<tr>
<td>Appearance and Odor</td>
<td>Reddish or yellow powder.</td>
</tr>
</tbody>
</table>

Fire and Explosion Data

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point</td>
<td>NA</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>NA</td>
</tr>
<tr>
<td>Flammable Limits (% by volume in air):</td>
<td></td>
</tr>
<tr>
<td>Upper</td>
<td>NA</td>
</tr>
<tr>
<td>Lower</td>
<td>NA</td>
</tr>
<tr>
<td>Fire Extinguishing Media:</td>
<td>Material is not flammable. Use extinguishing media suitable to surrounding materials.</td>
</tr>
<tr>
<td>Special Firefighting Procedures:</td>
<td>Use water to cool nearby containers and structures. Wear full protective equipment, including suitable respiratory protection.</td>
</tr>
<tr>
<td>Unusual Fire and Explosion Hazards:</td>
<td>None identified</td>
</tr>
</tbody>
</table>

Health Hazard Information

Effects of Overexposure

Skin Contact:
Contact may cause skin irritation. Material may be absorbed through the skin on prolonged exposure.
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Health Hazard Information

Effects of Overexposure

Skin Contact:
Symptoms of poisoning are similar to those listed under ingestion.

Eye Contact:
Contact may be irritating to the eyes.

Ingestion:
Harmful or fatal if swallowed. Symptoms of lead poisoning include abdominal pain, nausea, vomiting and headache. Acute poisoning may also be evidenced by muscle weakness, discoloration of the gums, metallic taste, sharp loss of appetite, insomnia.

Inhalation:
Inhalation may irritate the nose, throat and upper respiratory tract. Lead can be absorbed through the respiratory system. Symptoms of lead poisoning are similar to those listed under ingestion.

Chronic Effects of Overexposure:
Lead is a cumulative poison with multiple exposures to even small amounts leading to lead poisoning over time. The symptoms of chronic poisoning are similar to acute ingestion poisoning with the additional possible symptoms of visual disturbances, hypertension and a gray color to the skin.

Exposure Limits:

<table>
<thead>
<tr>
<th>Component</th>
<th>TWA (as Pb)</th>
<th>STEL</th>
<th>Ceiling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead oxide</td>
<td>0.05 mg/m3</td>
<td>NE</td>
<td>NE</td>
</tr>
</tbody>
</table>

ACGIH TLV

<table>
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<tr>
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Toxicity Data:

Lead oxide No information available.

Medical Conditions Generally Aggravated by Exposure:
Respiratory, skin, liver and kidney conditions. Circulatory disorders.

Target Organs:
None Identified

Reproductive Effects:
None Identified

Carcinogenicity:

<table>
<thead>
<tr>
<th>Component</th>
<th>NTP Listing</th>
<th>IARC Listing</th>
<th>OSHA Regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead oxide</td>
<td>No listing</td>
<td>Group 2B, Possible Human Carcinogen</td>
<td>☐</td>
</tr>
</tbody>
</table>

Emergency First Aid Procedures

Skin Contact:
Immediately remove contaminated clothing. Flush skin with water for at least 15 minutes. Seek immediate medical attention.

Eye Contact:
Flush with water for at least 15 minutes. Seek immediate medical attention.

Inhalation:
Emergency First Aid Procedures

Inhalation:
Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult administer oxygen. Seek medical attention.

Ingestion:
Give victim large amounts of water and induce vomiting. Never give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention.

Additional First aid and Treatment Notes:
No information available

Reactivity Data

Stability: Stable

Hazardous Polymerization: Will Not Occur

Incompatibles:
Hydrogen peroxide, lithium carbide, chlorine, ethylene, fluorine, sulfides, acetyldes, aluminum, strong reducing agents, combustible materials.

Decomposition Products:
Metal and metal oxides fumes when heated to decomposition.

Conditions to Avoid:
Excessive heat.

Spill and Disposal Procedures

Spill and Leak Procedures:
Prevent spread of spill. Sweep or scoop into disposal container. Flush residues with water. Wear suitable protective equipment. Do not flush to sewer or storm drain. Contain runoff.

Disposal Procedures:
Dispose in accordance with all Local, State and Federal regulations.

Protective Equipment

Ventilation:
Use general or local exhaust ventilation to meet TLV and PEL requirements.

Respiratory Protection:
Respiratory protection required if airborne concentrations exceed PEL or TLV. Use an approved respirator for misty conditions. If respiratory irritation is experienced, use an approved air-purifying respirator.

Skin and Eye Protective Equipment:
Safety goggles, protective clothing and gloves. Maintain an eyewash station and safety shower nearby.

Storage and Handling Precautions

Storage Area: HEALTH HAZARD
Store in a cool, dry well-ventilated area or cabinet dedicated to toxic storage. Isolate away from incompatible materials. Keep containers well closed.

Transportation Information
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INTEGRA Chemical Company
MSDS Number: L284
1216 6th Ave N
Revision Date: 16-Apr-08
Kent WA 98032
Revision No.: 004
Phone: 253-479-7000
24 Hour Emergency Response: CHEMTREC 800-424-9300 (Outside USA 703-527-3887)

Transportation Information

☐ Regulated Material domestic ground transportation
  (reference: CFR Title 49, Transportation)
  Proper Shipping Name: 
  UN or NA Identification number: 
  Hazard Class and Label: 
  Packing Group: 
  Subsidiary Risk and Label: 

☐ Regulated Material via Air Transportation
  (reference: ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air)
  Proper Shipping Name: 
  UN Identification Number: 
  Hazard Class and Label: 
  Packing Group: 
  Subsidiary Risk and Label: 
  Packing Instruction 
  Max net qty per package 
  Passenger Aircraft: 
  Cargo Aircraft: 

Regulatory Information

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA Inventory</th>
<th>CERCLA RQ</th>
<th>SARA EHS TPQ</th>
<th>SARA 313 Toxic Release</th>
</tr>
</thead>
<tbody>
<tr>
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SARA Hazard Categories:
- Acute
- Chronic
- Flammability
- Pressure
- Reactivity

Clean Air Act Categories:
- SOCMI
- HAP
- Volatile HAP
- Organic HAP
- Ozone Depleting

MSDS Revision History:
- 002 - Changed header phone number
- 003 - Format revisions; updated header phone number
- 004 - Updated Header Information

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***** END OF MSDS *****