

LEAD SULFATE

LSF

CAUTIONARY RESPONSE INFORMATION

Common Synonyms	Solid powder	White	Odorless
Anglislite Fast white Freemans white lead Lanarkite Lead bottoms Milk white Pigment white 3	Sinks in water.		
<p>Keep people away. Avoid contact with solid and dust. Wear goggles, self-contained breathing apparatus and rubber gloves. Notify local health and pollution control agencies.</p>			
Fire	Not flammable.		
Exposure	<p>CALL FOR MEDICAL AID. DUST OR SOLID POISONOUS IF INHALED. Irritating to eyes. If swallowed will cause abdominal pain, nausea, vomiting, headache and muscular weakness. Move to fresh air. IF IN EYES, hold eyelids open and flush with plenty of water. Flush affected areas with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk and induce vomiting.</p>		
Water Pollution	<p>HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.</p>		

<p>1. CORRECTIVE RESPONSE ACTIONS</p> <p>Stop discharge Contain Collection Systems: Pump; Dredge</p>	<p>2. CHEMICAL DESIGNATIONS</p> <p>2.1 CG Compatibility Group: Not listed. 2.2 Formula: PbSO₄ 2.3 IMO/UN Designation: 8/1794 (only if substance contains more than 3% free acid) 2.4 DOT ID No.: 1794 2.5 CAS Registry No.: 7446-14-2 2.6 NAERG Guide No.: 154 2.7 Standard Industrial Trade Classification: 52349</p>
<p>3. HEALTH HAZARDS</p> <p>3.1 Personal Protective Equipment: Wear approved filter mask, rubber gloves, and safety glasses. 3.2 Symptoms Following Exposure: INHALATION: Joint and muscle pains, headache, dizziness and insomnia. Weakness, frequently of extensor muscles of hand and wrist (unilateral or bilateral). Heavy contamination. Brain damage. Stupor progressing to coma - with or without convulsion, often death. Excitation, confusion, and mania less common. Cerebrospinal pressure may be increased. EYES: Caused a moderat purulent reaction and general inflammation of the rabbit eye. INGESTION: Abdominal pain, diarrhea, constipation, loss of appetite, muscular weakness, headache, blue line on gums, metallic taste, nausea and vomiting. 3.3 Treatment of Exposure: Get medical aid. INHALATION: Remove from source of exposure and keep quiet. EYES: Wash with running water. SKIN: Wash with soap and water. INGESTION: Wash mouth, give emetic then epsom salts (30 g/250 ml hot water), get medical attention. 3.4 TLV-TWA: 0.05 mg/m³ (as lead) 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: Not listed. 3.7 Toxicity by Ingestion: Grade 3; LD50 = 50 to 500 mg/kg. 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Intermittent vomiting, irritability, nervousness, incoordination, vague pains in the arms, legs, joints, and abdomen. Sensory disturbances of extremities, paralysis of extensor muscles of arms and legs with wrist and foot drop. Disturbance of menstrual cycle, and abortion. Periods of stupor or lethargy, encephalopathy (with visual disturbances), elevated blood pressure, papilledema, cranial nerve paralysis, delerium, convulsions, and coma. 3.10 Vapor (Gas) Irritant Characteristics: Currently not available 3.11 Liquid or Solid Characteristics: Currently not available 3.12 Odor Threshold: Odorless 3.13 IDLH Value: 100 mg Pb/m³ 3.14 OSHA PEL-TWA: 0.05 mg/m³ (as lead). 3.15 OSHA PEL-STEL: Not listed. 3.16 OSHA PEL-Ceiling: Not listed. 3.17 EPA AEGL: Not listed</p>	

4. FIRE HAZARDS

- 4.1 **Flash Point:** Not pertinent
4.2 **Flammable Limits in Air:** Not flammable
4.3 **Fire Extinguishing Agents:** Not pertinent
4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent
4.5 **Special Hazards of Combustion Products:** Toxic metal fumes
4.6 **Behavior in Fire:** Not pertinent
4.7 **Auto Ignition Temperature:** Not pertinent
4.8 **Electrical Hazards:** Not pertinent
4.9 **Burning Rate:** Not flammable
4.10 **Adiabatic Flame Temperature:** Currently not available
4.11 **Stoichiometric Air to Fuel Ratio:** Not pertinent.
4.12 **Flame Temperature:** Currently not available
4.13 **Combustion Molar Ratio (Reactant to Product):** Not pertinent.
4.14 **Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** No reaction
5.2 **Reactivity with Common Materials:** Currently not available
5.3 **Stability During Transport:** Currently not available
5.4 **Neutralizing Agents for Acids and Caustics:** Currently not available
5.5 **Polymerization:** Currently not available
5.6 **Inhibitor of Polymerization:** Currently not available

6. WATER POLLUTION

- 6.1 **Aquatic Toxicity:**
25 ppm/96-hour/Goldfish/lethal concentration/distilled water
25 ppm/2-to 3-hour/Minnow/lethal concentration/distilled water
2.4 ppm/96-hour/Fathead minnow/TL_m/soft water
75 ppm/96-hour/Fathead minnow/TL_m/hard water
0.1 ppm/chronic aquatic toxicity limits
6.2 **Waterfowl Toxicity:** Currently not available
6.3 **Biological Oxygen Demand (BOD):** Currently not available
6.4 **Food Chain Concentration Potential:** Fish and animal life are capable of lead concentration.
6.5 **GESAMP Hazard Profile:** Not listed

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 83.2% to 88.7% PbO
7.2 **Storage Temperature:** Currently not available
7.3 **Inert Atmosphere:** Currently not available
7.4 **Venting:** Currently not available
7.5 **IMO Pollution Category:** Currently not available
7.6 **Ship Type:** Currently not available
7.7 **Barge Hull Type:** Currently not available

8. HAZARD CLASSIFICATIONS

- 8.1 **49 CFR Category:** Corrosive material
8.2 **49 CFR Class:** 8
8.3 **49 CFR Package Group:** II
8.4 **Marine Pollutant:** No
8.5 **NFPA Hazard Classification:**
- | Category | Classification |
|---------------------------|----------------|
| Health Hazard (Blue)..... | 4 |
| Flammability (Red)..... | 0 |
| Instability (Yellow)..... | 0 |
- 8.6 **EPA Reportable Quantity:** 10 pounds
8.7 **EPA Pollution Category:** A
8.8 **RCRA Waste Number:** Not listed
8.9 **EPA FWPCA List:** Yes

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Solid
9.2 **Molecular Weight:** 303.28
9.3 **Boiling Point at 1 atm:** Currently not available
9.4 **Freezing Point:** 2138°F = 1170°C = 1443.2°K
9.5 **Critical Temperature:** Currently not available
9.6 **Critical Pressure:** Currently not available
9.7 **Specific Gravity:** 6.2 at room temperature
9.8 **Liquid Surface Tension:** Not pertinent
9.9 **Liquid Water Interfacial Tension:** Not pertinent
9.10 **Vapor (Gas) Specific Gravity:** 10.46 (calculated)
9.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent
9.12 **Latent Heat of Vaporization:** Currently not available
9.13 **Heat of Combustion:** Not pertinent
9.14 **Heat of Decomposition:** Currently not available
9.15 **Heat of Solution:** Currently not available
9.16 **Heat of Polymerization:** Currently not available
9.17 **Heat of Fusion:** 31.6 cal/g
9.18 **Limiting Value:** Currently not available
9.19 **Reid Vapor Pressure:** Currently not available

NOTES

LEAD SULFATE

LSF

9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
	N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
35	0.003		C U R R E N T L Y		C U R R E N T L Y		C U R R E N T L Y
40	0.003						
45	0.003						
50	0.003						
55	0.004						
60	0.004						
65	0.004						
70	0.004						
75	0.004						
80	0.005						
85	0.005		N O T		N O T		N O T
90	0.005						
95	0.005						
100	0.005		A V A I L A B L E		A V A I L A B L E		A V A I L A B L E