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**TO: Mr. Paul Smith****FAX PHONE: (510) 569-4757****COMPANY: Alameda County Department  
of Environmental Health****BUSINESS PHONE: 271-4320****DATE: May 12, 1993****FROM: John Duey****PROJECT #: 84-486-01****SUBJECT: 458-46th Avenue, Oakland****# OF PAGES: 7  
(including this cover)****X Hard copy to follow if checked****COMMENTS & ACTIONS REQUIRED:**

Attached is the Site Safety Plan for the subsurface investigation at the subject site (The Learner Company). Please call if you have any questions.

## Site Safety Plan

Date 5/12/93  
Job # 83-458-01

## A. Site Description

Client: The Learner Company - 2711 Navy Drive, Stockton, CaliforniaLocation 798 48th Avenue nr. Coliseum Way, Oakland, CaliforniaArea affected [ ]     yd x     yd [X] 1.9 acres

Surrounding land use [ ] Residential [ ] Agricultural [X] Industrial [X] Commercial

Topography [X] Flat [ ] Hilly [ ] Open Excavation [X] Paved [X] Unpaved

Weather conditions expected to be sunny and warm, not to exceed 80 degrees F.B. Work to be Performed Drill soil borings to about 25 ft depth, collect soil samples, install ground water wells

## C. On Site Control [X] A safe perimeter has been established. Its boundaries are defined by

[ ] tape [ ] traffic cones [X] other Chain link fence around property

[X] The contamination reduction zone is designated as follows: \_\_\_\_\_

A steam cleaner will be set up north of the "scale house", about mid-site[X] The support zone is designated as follows: In front of the drill rig if needed

## D. Hazard Evaluation

[X] Concentration range in water (mg/l) and soils (mg/kg) are as shown.

[X] Dust at  $10 \text{ mg}/\text{m}^3$  may have the indicated air concentrations in  $\text{mg}/\text{m}^3$  if generated from site soils.

Substance	Free-Phase	Ground Water	Soil	Air Conc.	TLV-TWA	IDLH
Petroleum Hydrocarbons	not found	not tested	28,000 ppm	TLV=800 ppmv for gasoline no IDLH est.		
Lead	not found	not tested	5,320 ppm	0.058-dust	0.10	700
Zinc	not found	not tested	6,820 ppm	0.088-dust	10	NA
PCBs	not found	not tested	25.2 ppm	0.0025-dust	0.001	5

[X] Material Safety Data Sheets (MSDS) for the substances at the site are attached.

[ ] Air concentrations may exceed 10% of the Lower Explosive Limit (LEL).

[X] Air concentrations may exceed OSHA Permissible Exposure Levels (PEL) 8 hour Time Weighted Average (TWA) for the following substances: lead if a dust concentration greater than  $10 \text{ mg}/\text{m}^3$  is generated by winds

## General Safety Hazards:

[X] Underground utilities and/or process lines have been identified. A line detector survey is required.

[ ] Nitrogen cylinders or tanks will be used. Safety and operating instructions have been reviewed.

[X] Personnel are aware of safety hazards associated with lifting heavy items, moving machinery parts, slipping, falling and operating or working near electrical equipment.

[ ] Confined space entry is required. All personnel have reviewed confined space entry procedures. A confined space entry checklist has been completed and it is attached to this plan.

## E. Air Monitoring

The following air monitoring instruments shall be used on site at the specified intervals:

[ ] Combustible Gas Indicator \_\_\_\_\_

[ ] Oxygen Indicator \_\_\_\_\_

[X] Organic Vapor Meter every 10 minutes during drilling

[ ] Color Tubes (Refer to Attached Flow Chart): \_\_\_\_\_

Substance

Concentration Range

Pump Stroke

## F. Personal Protective Equipment

The required personal protection level is D notes if visible dust is formed from wind, Level C.Protective clothing materials for the involved substances are Nitrile gloves, long-sleeved shirt, steel-toed boots (work if dusty)Respiratory protection shall consist of Half-face respirator if winds create visible dustProtection Factor = 10The required respiratory cartridge is Organic Vapor/Acid Gas with High-Efficiency particulate filterThis cartridge is expected to provide adequate protection for 8 hours.

[X] All personnel at the site have been trained in the proper use and care of protective equipment.

## G. Decontamination Procedures

Personnel and equipment leaving the site shall be decontaminated as follows:

Personnel: shower with soap and warm water same day. Equipment - steam-cleaned onsite

## H. Heat Stress Monitoring

The expected air temperature will be 80° F. Adjusted air temperature[ $\text{Cadj}$ ] =  $\text{Tair}(\text{F}) + (1.3 \times \% \text{ sunshine})$  is not expected to exceed 83° F.

- A Health Alert Warning (air temperature likely to exceed 85° F) has [not] been issued by the weather service.
- Workers are trained to recognize heat stress symptoms.
- The Site Safety Officer will monitor pulse rate and temperature of workers showing signs of heat stress and modify the work schedule accordingly. A disposable oral thermometer is part of the field kit. No team member will work if his/her oral temperature exceeds 100.6° F.
- Drinking water and disposable cups are available during work.

**I. Emergency Procedures**

**Personal Injury:** The Site Safety Officer and Project Team Leader will evaluate the nature of the injury and contact an ambulance and the designated medical facility if required. An incident report form will be filed.

**Fire/Explosion:** The fire department shall be alerted if necessary. All personnel shall be moved to a safe distance from the involved area. There is not an alarm system at the facility.  The client has explained to us the procedures to be followed if their alarm is activated.

Oral communications are possible at all times.  A [horn] [megaphone] will be used to issue emergency signals.

Emergency escape routes have been identified as follows:  
Southward through the gate at 50th Avenue

**J. Emergency Medical Care**

Hospital Highland General Hospital, at 1411 West 51st Street nr. 14th Avenue, Oakland (off Interstate 580), phone (510) 584 - 8085 is located 15 minutes from this location. A map of alternative routes to this facility is attached. First-aid equipment is available on site at the following locations:

- First-aid kit in Weiss Associates vehicle
- Emergency eye wash in Weiss Associates vehicle
- Other \_\_\_\_\_

List of emergency phone numbers:

Agency/Facility	Phone #	Contact (if applicable)
Police	911	
Fire	911	
Client	1-209-948-3498	Jack Hecht

Any injuries sustained while working are covered under Worker's Compensation insurance. Any injured WA employee must inform the medical care facility that this is a worker's comp claim and that our policy is Fireman's Fund #8 09 WEP 8053 17 65. Copies of the Doctor's report on injury should be forwarded to our carrier Fireman's Fund, P.O. Box 1799, Richmond Park, CA 94827-9908. WA employees must also notify Brooks Abdalmoor at WA (510-460-8181) the same day so that this claim can be filed properly.

Any injured sub-contractor employee must be covered under their employer's policy. If they do not know their information, WA has certificates on file of the insurance policy for all approved sub-contractors.

Emergency medical information is presented in the attached MSDS.

All site personnel have read the plan and are familiar with its provisions. The following personnel are designated to carry out job functions at the site:

	Name	Signature
Project Team Leader	<u>Scott Nelson</u>	_____
Site Safety Officer	<u>Scott Nelson</u>	_____
Field Team Leader	<u>Scott Nelson</u>	_____
Field Team Member	_____	_____
Field Team Member	_____	_____
Field Team Member	_____	_____
WA Office Advisor	<u>Robert Devany</u>	_____

I have read the attached Weiss Associates Safety Plan and am familiar with its provisions. I agree that any employee of this firm who enters this site will be notified of these provisions and procedures; and our firm will be responsible for making sure they abide by these provisions and procedures.

**Subcontractor Acknowledgment**

Firm Name: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

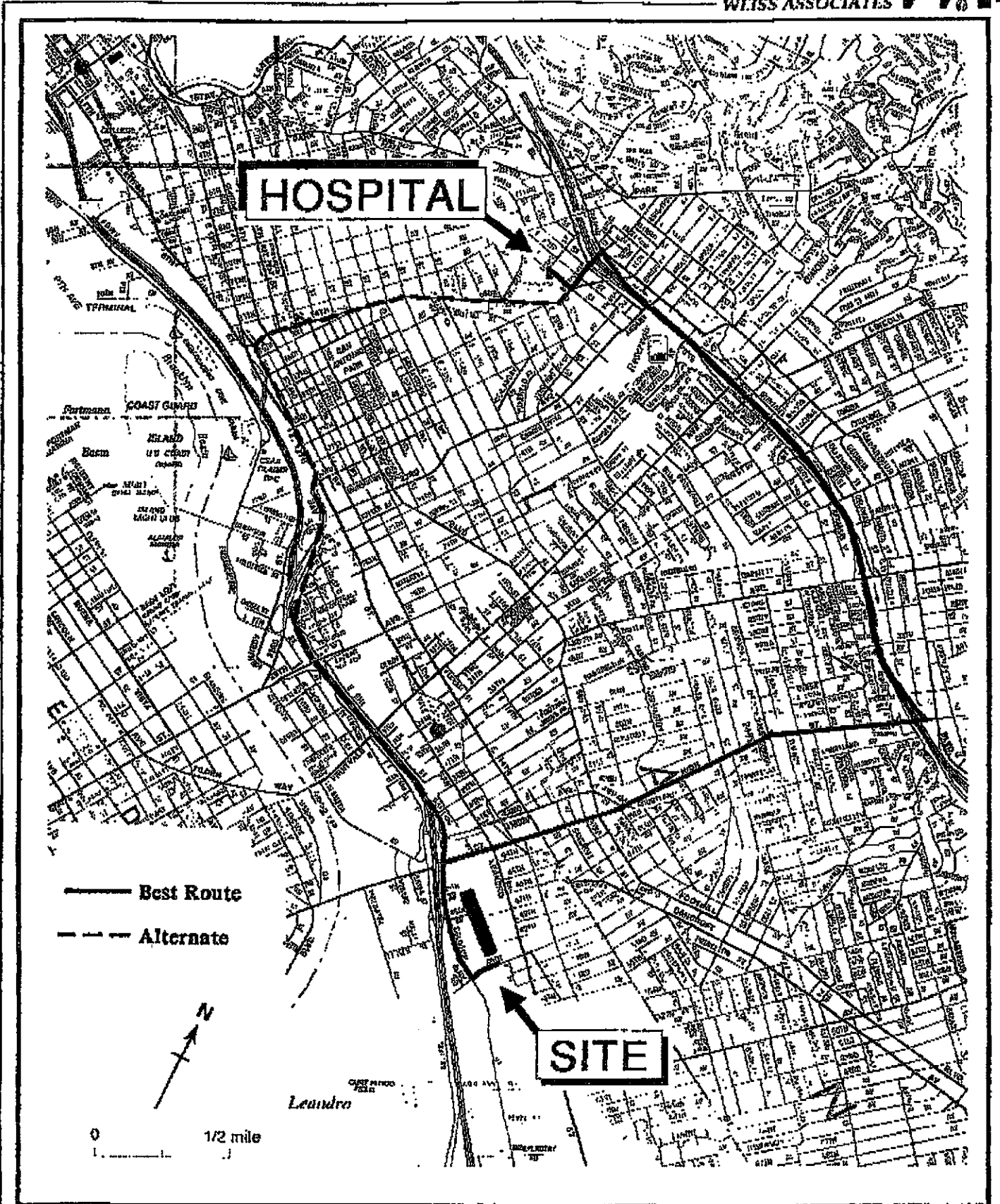


Figure 1. Hospital Route Map - The Learner Company, 768-46th Avenue, Oakland, California

# GASOLINES: AUTOMOTIVE (< 4.23g lead/gal)

GAT

<p><b>Common Synonyms:</b> Motor grade Petrol</p>	<p><b>Whisky liquid</b></p> <p>Colorless to pale brown or pink</p> <p>Gasoline odor</p>	<p>Flights on water. Flammable, boiling vapor is produced</p>
<p>Stay upright if possible. Keep people away Shut off ignition sources and call fire department. Stay upright and use water spray to "knock down" vapor. Sprinkle and remove discharged electrical. Notify local health and pollution control agencies.</p>		
<p><b>Fire</b></p>	<p><b>FLAMMABLE.</b> Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed space. Extinguish with dry chemical, foam, or carbon dioxide. Water may be ineffective on fire. Water may be ineffective on fire. Cool exposed containers with water.</p>	
<p><b>Exposure</b></p>	<p><b>CALL FOR MEDICAL aid</b></p> <p><b>INHALE</b> Irritating to eyes, nose and throat. Irritation will cause discomfort, soreness, difficult breathing or loss of consciousness. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p><b>INGESTION</b> Irritating to skin and eyes. If swallowed, spit out and vomit. Resuscitate continuously during transport. Flush affected areas with plenty of water. In 1-2 hrs, white crystals appear and flush with plenty of water. If SWALLOWED and vomit is CONTAMINATED, have victim drink water or milk. <b>DO NOT INDUCE VOMITING.</b></p>	
<p><b>Water Pollution</b></p>	<p><b>HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS.</b> Flammable to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.</p>	
<p><b>1. RESPONSE TO DISCHARGE</b> (See Response Methods Procedures) Issue warning-high flammability Evacuate safe Dispose and then</p>		
<p><b>2. LABEL</b> 2.1 Hazardous Flammable liquid 2.2 Class 3</p>		
<p><b>3. CHEMICAL DESIGNATIONS</b> 3.1 CG Compatibility Class Miscellaneous Hydrocarbon Mixtures 3.2 Accidents (Medium of Hydrocarbons) 3.3 DPGMUN Designation 3.1/TC3 3.4 DOT ID No.: 1203 3.5 GHS Highway Reg. Data not available</p>		
<p><b>4. OBSERVABLE CHARACTERISTICS</b> 4.1 Physical State (at 20°C): Liquid 4.2 Color: Colorless to brown 4.3 Odor: Gasoline</p>		
<p><b>5. HEALTH HAZARDS</b></p> <p>5.1 Personal Protective Equipment: Protective goggles, gloves. 5.2 Symptoms Following Exposure: Irritation of mucous membranes and stimulation followed by depression of central nervous system. Breathing of vapor may also cause dizziness, headache, and intoxication or, in more serious cases, unconsciousness, coma, and respiratory arrest. If liquid enters lungs, it will cause severe irritation, coughing, gasping, pulmonary edema, and later signs of asphyxiation and pneumonia. Gasoline may cause irregular heartbeat. 5.3 Treatment of Exposure: <b>INHALATION:</b> Remove to fresh air and administer oxygen if necessary and rest if liquid is in lungs. <b>INGESTION:</b> do NOT induce vomiting; stomach should be lavaged (by doctor) if considerable quantity is swallowed. <b>EYES:</b> wash with copious quantity of water. Show wipe off any stain with soap and water. 5.4 Threshold Limit Value: 500 ppm 5.5 Short Term Inhalation Limit: 500 ppm for 30 min. 5.6 Toxicity by Ingestion: Class 2: LD50 = 0.5 to 5 g/kg. 5.7 Lethal Toxicity: None 5.8 Vapor (gas) irritates mucous membranes. Vapor causes a slight stinging of the eyes or respiratory system if inhaled in high concentrations. This effect is temporary. 5.9 Liquid or Solid Irritant Characteristics: Irritates human. If spilled on clothing and allowed to remain, may cause staining and irritation of the skin. 5.10 Odor Threshold: 0.25 ppm 5.11 IRIL: Vapor Data not available</p>		

<p><b>6. FIRE HAZARDS</b></p> <p>6.1 Flash Point: -38°F C.C. 6.2 Flammable Limits in Air: 1.4% - 7.6% 6.3 Fire Extinguishing Agents: Foam, carbon dioxide, dry chemical 6.4 Fire Extinguishing Agents Not to be Used: Water may be ineffective 6.5 Spilled Materials of Combustion: Products None 6.6 Behavior in Fire: Vapor is heavier than air and may travel considerable distance to a source of ignition and flash back. 6.7 Ignition Temperature (ASTM): 6.8 Electrical Hazard: Class I, Group D 6.9 Boiling Point: 4 mm/Hg 6.10 Autoignition Temperature: Data not available 6.11 Static-Sensitive Air to Fuel Ratio: Data not available 6.12 Flash Temperature Data not available</p>	<p><b>10. HAZARD ASSESSMENT CODE</b> (See Hazard Assessment Handbook) A-T-U-V-W</p> <p><b>11. HAZARD CLASSIFICATIONS</b></p> <p>11.1 Class of Federal Regulations: Flammable liquid</p> <p>11.2 HAZARD Rating for Entry Water Transportation</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Category</th> <th style="text-align: right;">Rating</th> </tr> <tr> <td>Fire</td> <td style="text-align: right;">3</td> </tr> <tr> <td>Health</td> <td style="text-align: right;">0</td> </tr> <tr> <td>Vapor Irritant</td> <td style="text-align: right;">1</td> </tr> <tr> <td>Liquid or Solid Irritant</td> <td style="text-align: right;">1</td> </tr> <tr> <td>Poison</td> <td style="text-align: right;">2</td> </tr> <tr> <td>Water Pollution</td> <td style="text-align: right;">0</td> </tr> <tr> <td>Mutagen Toxicity</td> <td style="text-align: right;">1</td> </tr> <tr> <td>Aquatic Toxicity</td> <td style="text-align: right;">2</td> </tr> <tr> <td>Anesthetic Effect</td> <td style="text-align: right;">2</td> </tr> <tr> <td>Reactivity</td> <td style="text-align: right;">0</td> </tr> <tr> <td>Other Chemicals</td> <td style="text-align: right;">0</td> </tr> <tr> <td>Water</td> <td style="text-align: right;">0</td> </tr> <tr> <td>Self Reaction</td> <td style="text-align: right;">0</td> </tr> </table> <p>11.3 NFPA Hazard Classification</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Category</th> <th style="text-align: right;">Classification</th> </tr> <tr> <td>Health Hazard (GHS)</td> <td style="text-align: right;">3</td> </tr> <tr> <td>Flammability (GHS)</td> <td style="text-align: right;">2</td> </tr> <tr> <td>Reactivity (GHS)</td> <td style="text-align: right;">0</td> </tr> </table>	Category	Rating	Fire	3	Health	0	Vapor Irritant	1	Liquid or Solid Irritant	1	Poison	2	Water Pollution	0	Mutagen Toxicity	1	Aquatic Toxicity	2	Anesthetic Effect	2	Reactivity	0	Other Chemicals	0	Water	0	Self Reaction	0	Category	Classification	Health Hazard (GHS)	3	Flammability (GHS)	2	Reactivity (GHS)	0
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<p><b>7. CHEMICAL REACTIVITY</b></p> <p>7.1 Reactivity with Water: No reaction 7.2 Reactivity with Common Oxidants: No reaction 7.3 Stability During Transport: Stable 7.4 Reacting Agents for Acids and Corrosives: Not pertinent 7.5 Polymerization: Not pertinent 7.6 Inhibitor of Polymerization: Not pertinent 7.7 Water Ratio (Relative to Product): Data not available 7.8 Reactivity Group: 0</p>																																					
<p><b>8. WATER POLLUTION</b></p> <p>8.1 Aquatic Toxicity: 50 ppm/24 hr: readily available American standard, fresh water 51 mg/l/24 hr: Japanese American standard, salt water 8.2 Waterway Toxicity: Data not available 8.3 Ecological Oxygen Demand (BOD): 5%, 5 days 8.4 Food Chain Concentration: Potential: None</p>																																					
<p><b>9. SHIPPING INFORMATION</b></p> <p>9.1 Grades of Partly Volatile classes using: military specifications 9.2 Storage Temperature: Ambient 9.3 Vessel Atmosphere: No requirement 9.4 Venting: Open (three times) to atmosphere</p>																																					
<p><b>12. PHYSICAL AND CHEMICAL PROPERTIES</b></p> <p>12.1 Physical State at 15°C and 1 atm: Liquid 12.2 Molecular Weight: Not pertinent 12.3 Boiling Point at 1 atm: 340-360°F = 80-100°C = 330-410°K 12.4 Freezing Point: Not pertinent 12.5 Critical Temperature: Not pertinent 12.6 Critical Pressure: Not pertinent 12.7 Specific Gravity: 0.7321 at 20°C (liquid) 12.8 Liquid Surface Tension: 19-23 dynes/cm = 0.159-0.225 N/m at 20°C 12.9 Liquid Water Interfacial Tension: 49-51 dynes/cm = 0.540-0.551 N/m at 20°C 12.10 Vapor (Gas) Specific Gravity: 0.6 12.11 Heat of Evaporation: Heat of Vaporization (GHS): 2.55 12.12 Latent Heat of Vaporization: 130-150 Btu/lb = 71-81 cal/g = 3.0-3.4 x 10<sup>5</sup> J/kg 12.13 Heat of Combustion: -11,720 Btu/lb = -10,420 cal/g = 43.7 x 10<sup>4</sup> J/kg 12.14 Heat of Decomposition: Not pertinent 12.15 Heat of Solution: Not pertinent 12.16 Heat of Polymerization: Not pertinent 12.17 Heat of Fusion: Data not available 12.18 Melting Point: Data not available 12.19 Refractive Index: Data not available 12.20 Viscosity: Data not available</p>																																					
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NO LEAD SULFATE SUSPECTED ON SITE - LEAD OXIDE, METALLIC LEAD

LEAD SULFATE

NOTE: INFO ON HEALTH EFFECTS ARE CONTRIBUTED TO METALLIC LEAD

LSF

<b>Common Synonyms</b> Angeline Pigment white B Fast white Fluorapat white lead LAWSON Lead bottom; milk white	<b>Solid powder</b> White Oxide White Oxide	<b>Other</b> White Oxide
<p>Avoid contact with skin and eyes. Keep people away. Wash goggles, work clothes including leggings and rubber gloves. Stop discharge if possible. Handle and remove contaminated material. Notify local health and pollution control agencies.</p>		
<b>Fire</b>	Not flammable.	
<b>Exposure</b>	<p>CALL FOR MEDICAL AID.  <b>IRITANT TO SOLID PERSONS IF INHALED.</b>          Irritation to eyes. If prolonged will cause abnormal pain, redness, watering, headache and respiratory distress.  <b>Must be kept out of EYES.</b> Lead crystals spots and flush with plenty of water. Flush affected areas with plenty of water.  <b>IF SWALLOWED AND VICTIM IS CONSCIOUS,</b> have victim drink water or milk and induce vomiting.</p>	
<b>Water Pollution</b>	<p>HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. May be dangerous if it enters water bodies.          Notify local health and wildlife agencies. Notify operators of nearby water bodies.</p>	
<p><b>1. RESPONSE TO EMERGENCY</b>          (See Response Methods Handbook)          Initial washing - water spray/flushing, corrective.          Resistant actions.          Should be removed.          Chemical and physical treatment.</p>		<p><b>2. LABEL</b>          2.1 Category: Corrosive          2.2 Class: C</p>
<p><b>3. CHEMICAL IDENTIFICATION</b>          3.1 CAS Compatibility Class: Not listed          3.2 Formula: PbSO<sub>4</sub>          3.3 MSDS: Incompatible with 1/164 (only if substance contains more than 2% free acid)          3.4 DOT ID No: 1734          3.5 CAS Registry No: 7440-14-2</p>		<p><b>4. OBSERVABLE CHARACTERISTICS</b>          4.1 Physical State (see entry): Solid          4.2 Color: White          4.3 Odor: None</p>
<p><b>5. HEALTH HAZARDS</b>          5.1 Personal Protection Equipment: Wear approved eye mask, rubber gloves, and safety glasses.          5.2 Symptoms Following Exposure: <b>INHALATION:</b> Joint and muscle pain, headache, dizziness and weakness. Weakness, numbness of anterior muscles of hand and wrist (radial or ulnar). Heavy concentration. Skin: Irritation. Stomach progressing to vomit - with or without convulsion. Other: death. Irritation, conjunctivitis, and cornea lens exposure. Ocular: conjunctivitis, corneal opacity, and corneal edema. <b>EYES:</b> Irritation &amp; reddened conjunctiva and general inflammation of the entire eye. <b>INGESTION:</b> Abnormal pain, diarrhea, constipation, loss of appetite, muscular weakness, headache, blue line on gums, metallic taste, nausea and vomiting.          5.3 Treatment of Exposure: Get medical aid. <b>INHALATION:</b> Remove from source of exposure and keep quiet. <b>EYES:</b> Wash with running water. <b>SKIN:</b> Wash with soap and water. <b>INGESTION:</b> Wash mouth, give emetic. Do not induce vomiting (DO NOT INDUCE VOMITING) get medical attention.          5.4 Threshold Limit Value: 0.15 mg/m<sup>3</sup>          5.5 Short Term Exposure Limit: 0.5 mg/m<sup>3</sup>          5.6 Toxicity by Ingestion: Class 3 (LD50 = 50 to 100 mg/kg)          5.7 Life Toxicity: Irritant to skin, irritability, conjunctivitis, lacrimation, vague pain in the nose, lips, joints, and weakness. Heavy exposure of conjunctivitis, irritation of anterior muscles of arms and legs with wrist and hand drops. Disturbance of muscular cycles and abnormal function of upper airway, accompanied by acute inflammation, elevated blood pressure, polydipsia, mental status paralysis, delirium, convulsions, and coma.          5.8 Vapor (Gas) Inhaled Concentration: Data not available          5.9 Liquid or Solid Inhaled Concentration: Data not available          5.10 Skin Absorption: Not performed          5.11 LD50 Value: Data not available</p>		

<p><b>6. FIRE HAZARDS</b>          6.1 Flash Point: Not performed          6.2 Flammable Limits in Air: Not determined          6.3 Fire Extinguishing Agents: Not performed          6.4 Fire Extinguishing Agents: Not to be used: Not performed          6.5 Special Hazards of Combustion Products: Toxic metal fumes          6.6 Detonator in Fire: Not performed          6.7 Ignition Temperature: Not performed          6.8 Electrical Hazard: Not performed          6.9 Conductivity: Not performed          6.10 Adiabatic Flame Temperature: Data not available          6.11 Self-Heating: Not performed          6.12 Flash Temperature: Data not available</p>	<p><b>7. CHEMICAL REACTIVITY</b>          7.1 Reactivity with Water: No reaction          7.2 Reactivity with Common Materials: Data not available          7.3 Stability During Transport: Data not available          7.4 Neutralizing Agents for Acids and Alkalies: Data not available          7.5 Polymerization: Data not available          7.6 Inhibitor of Polymerization: Data not available          7.7 Water Ratio (Specific to Product): Data not available          7.8 Reactivity Groups: Data not available</p>
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<p><b>8. WATER POLLUTION</b>          8.1 Aquatic Toxicity:          25 ppm/96-hour/Coldwater/fish          25 ppm/24-hour/Invertebrate          24 ppm/96-hour/Freshwater          75 ppm/96-hour/Freshwater          5.1 ppm/96-hour/Invertebrate          8.2 Waterborne Toxicity: Data not available          8.3 Biological Oxygen Demand (BOD): Data not available          8.4 Fixed Chlorine Concentration Potential: Fish and animal life are capable of local concentration.</p>	<p><b>9. SHIPPING INFORMATION</b>          9.1 Codes of Practice: 60.1 to 60.25 FM          9.2 Storage Temperature: Data not available          9.3 Heat of Vaporization: Data not available          9.4 Volatility: Data not available</p>
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<p><b>10. HAZARD ASSESSMENT CODE</b>          (See Hazard Assessment Handbook)          68</p>	<p><b>11. HAZARD CLASSIFICATIONS</b>          11.1 Code of Federal Regulation: Corrosive (solid)          11.2 NFPA Hazard Rating for Bulk Water Transportation: Not listed          11.3 NFPA Hazard Classification:          Category: Corrosive          Health Hazard (H) _____ 4          Flammability (F) _____ 0          Reactivity (R) _____ 0</p>
<p><b>12. PHYSICAL AND CHEMICAL PROPERTIES</b>          12.1 Physical State at 10°C and 1 atm: Solid          12.2 Molecular Weight: 303.29          12.3 Boiling Point at 1 atm: Data not available          12.4 Freezing Point: 273.0 K = 17.0°C = 143.2°F          12.5 Critical Temperature: Data not available          12.6 Critical Pressure: Data not available          12.7 Specific Gravity: 5.8 at room temperature          12.8 Liquid Surface Tension: Not performed          12.9 Liquid Water Intensity Factor: Not performed          12.10 Vapor (Gas) Specific Gravity: 10.45 (air = 1)          12.11 Rate of Specific Vapors (Gas): Not performed          12.12 Latent Heat of Vaporization: Data not available          12.13 Heat of Vaporization: Not performed          12.14 Heat of Decomposition: Data not available          12.15 Heat of Solution: Data not available          12.16 Heat of Polymerization: Data not available          12.17 Heat of Fusion: 31.8 cal/g          12.18 Melting Point: Data not available          12.19 Heat of Vapor: Data not available</p>	
<p><b>NOTES</b></p>	

## POLYCHLORINATED BIPHENYL

PCB

<b>Common Synonyms</b> PCB Chlorinated biphenyl Aroclor Polychlorinated biphenyl Polychlorobiphenyls		Dry liquid to solid powder  Solub in water.	Light yellow liquid, or white powder  Weak odor
Stop discharge if possible Keep people away. Avoid contact with liquid and solid. Call fire department. Solids and vapors discharged captured. Notify local health and pollution control agencies.			
<b>Fire</b>		<b>Combustion:</b> Mixtures with water, kerosene, dry chemical, or carbon dioxide.	
<b>Exposure</b>		<b>CALL FOR MEDICAL AID</b> <b>LIQUID OR SOLID</b> Wash skin and eyes. Flush clothing away with plenty of water. If in eyes, hold eyelids open and flush with plenty of water.	
<b>Water Pollution</b>		HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. May be dangerous if it enters water bodies. Notify local health and wildlife officials. Notify agencies of nearby water intakes.	
<b>1. RESPONSE TO DISCHARGE</b> (See Response Methods Handbook) Issue warning-water contaminated. Should be stopped. Chemical and physical treatment.		<b>2. LABEL</b> 2.1 Category: Acute 2.2 Class: Not pertinent	
<b>3. CHEMICAL DESIGNATIONS</b> 3.1 GHS Compatibility Class: Not listed 3.2 Formula: C <sub>12</sub> H <sub>6</sub> Cl <sub>2</sub> 3.3 MSDS/MSDS Designation: Not listed 3.4 DOT ID No.: 2915 3.5 GHS Registry No.: 1833-59-9		<b>4. OBSERVABLE CHARACTERISTICS</b> 4.1 Physical State (as shipped): Liquid or solid 4.2 Color: Pale yellow (liquid); colorless (solid) 4.3 Odor: Practically odorless	
<b>5. HEALTH HAZARDS</b> 5.1 Personal Protective Equipment: Glove and protectose goggles. 5.2 Symptoms Following Exposure: Agony from skin contact. 5.3 Treatment of Exposure: WASH with soap and water. 5.4 Threshold Limit Value: 0.5 to 1.0 mg/m <sup>3</sup> 5.5 Short Term Exposure Limit: Data not available 5.6 Toxicity by Ingestion: Grade 2; oral LD <sub>50</sub> → 3000 mg/kg 5.7 Lethal Toxicity: Causes chlorinated acromiomas in rats, liver damage in fish. 5.8 Vapor (Gas) Inhalation: Chlorinated vapors cause severe irritation of eyes and throat and cause eye and lung injury. They cannot be tolerated even at low concentrations. 5.9 Liquid or Solid Contact: Chlorinated: Contact with skin may cause irritation. 5.10 Skin Threshold: Data not available 5.11 ID <sub>50</sub> Value: 0 to 70 mg/m <sup>3</sup>			

<b>6. FIRE HAZARDS</b> 6.1 Flash Point: > 200°F 6.2 Flammable Limits in Air: Data not available 6.3 Fire Extinguishing Agents: Water, foam, dry chemical, or carbon dioxide 6.4 Fire Extinguishing Agents: Not to be Used for petroleum 6.5 Special Hazards of Combustion: Products: Irritating gases are generated in fire. 6.6 Detonator in Fire: Not pertinent 6.7 Ignition Temperature: Data not available 6.8 Self-Heating Hazard: Not pertinent 6.9 Storing Hazard: Data not available 6.10 Self-Heating Temperature: Data not available 6.11 Self-Heating Air to Fuel Ratio: Data not available 6.12 Flame Temperature: Data not available		<b>10. HAZARD ASSESSMENT CODE</b> (See Hazard Assessment Handbook)  <b>0</b>
<b>7. CHEMICAL REACTIVITY</b> 7.1 Reactivity with Water: No reaction 7.2 Reactivity with Oxidizing Materials: No reaction 7.3 Stability During Transport: Stable 7.4 Reacting Agents for Acids and Bases: Not pertinent 7.5 Polymerization: Not pertinent 7.6 Initiator of Polymerization: Not pertinent 7.7 Oxidizer: Not pertinent Peroxy: Data not available 7.8 Reactivity Groups: Data not available		<b>11. HAZARD CLASSIFICATIONS</b> 11.1 Code of Federal Regulations: OSHA 11.2 MSD Hazard Rating for Bulk Water Transportation: Not listed 11.3 NFPA Hazard Classification: Not listed
<b>8. WATER POLLUTION</b> 8.1 Aquatic Toxicity: 0.270 ppm/96 hr/fish/LD <sub>50</sub> /fresh water 0.005 ppm/96 hr/100% 8.2 Sublethal Toxicity: LD <sub>50</sub> 2000 ppm (mammal 96hr) 8.3 Biological Oxygen Demand (BOD): Very low 8.4 Food Chain Concentration Potential: High		<b>12. PHYSICAL AND CHEMICAL PROPERTIES</b> 12.1 Physical State at 20°C and 1 atm: Solid 12.2 Molecular Weight: Not pertinent 12.3 Boiling Point at 1 atm: Very high 12.4 Freezing Point: Not pertinent 12.5 Critical Temperature: Not pertinent 12.6 Critical Pressure: Not pertinent 12.7 Specific Gravity: 1.0-1.0 at 20°C (liquid) 12.8 Liquid Surface Tension: Not pertinent 12.9 Liquid Water Interfacial Tension: Not pertinent 12.10 Vapor (Gas) Specific Gravity: Not pertinent 12.11 Ratio of Specific Heats of Vapor (GAS): Not pertinent 12.12 Latent Heat of Vaporization: Not pertinent 12.13 Heat of Combustion: Not pertinent 12.14 Heat of Decomposition: Not pertinent 12.15 Heat of Solution: Not pertinent 12.16 Heat of Polymerization: Not pertinent 12.17 Heat of Fusion: Data not available 12.18 Melting Value: Data not available 12.19 Solid Vapor Pressure: Data not available
<b>9. SHIPPING INFORMATION</b> 9.1 Grades of Packing: 11 grades (acute liquid, acute solid) which differ primarily in their chlorine content (20%-65% by weight) 9.2 Storage Temperature: Ambient 9.3 Inert Atmosphere: No requirement 9.4 Venting: Open		<b>NOTES</b>

JUNE 1985