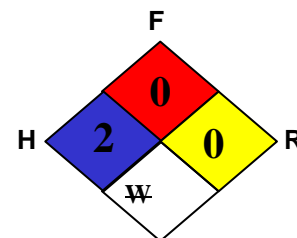




**TROJAN BATTERY COMPANY**  
**LEAD PASTED PLATES**  
**MATERIAL SAFETY DATA SHEET**

Hazard Rating



**SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

MANUFACTURER'S NAME: TROJAN BATTERY COMPANY	EMERGENCY TELEPHONE NO.: CHEMTREC (800) 424-9300 International (703) 527-3887
ADDRESS: 12380 CLARK ST., SANTA FE SPRINGS, CA 90670	OTHER INFORMATION CALLS: 562-236-3000 800-423-6569
PERSON RESPONSIBLE FOR PREPARATION: Ismael Pedroza, Jr. – Director of EH&S	Revised Date: May 13, 2010

**SECTION 2 -- COMPOSITION/INFORMATION ON INGREDIENTS**

C.A.S.	PRINCIPAL HAZARDOUS COMPONENT(S) (chemical & common name(s))	Hazard Category	% Weight	ACGIH TLV - mg/m <sup>3</sup>	OSHA PEL/TWA - mg/m <sup>3</sup>
7439-92-1	Grid Containing Lead	Acute-Chronic	40-50	0.05 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>
7440-36-0	Antimony	Chronic	0-7.0	0.5	0.5
7440-31-5	Tin	Chronic	0-3.0	2	2
7440-70-2	Calcium (lead calcium alloy)	Reactive	0-0.5	Not Established	Not Established
7440-38-2	Arsenic (inorganic)	Acute-Chronic	0-0.2	0.01	0.05
None assigned	Paste Containing Lead Oxide (Litharge)	Acute-Chronic	50-60	0.05 (lead)	0.05 (lead)
7446-14-2	Lead Sulfate	Acute-Chronic	5-20	Not Established	0.05 mg/m <sup>3</sup> (as lead)
1333-86-4	Carbon Black	Chronic	<0.2	3.5	3.5

Note: PEL's for individual states may differ from OSHA's PEL's. Check with local authorities for the applicable state PEL's

COMMON NAME: (Used on label) (Trade Name & Synonyms) Pasted Plates	Chemical Family: Toxic Mixture
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Chemical Name: Lead, Pasted Plates	Formula: Mixture
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**SECTION 3 – HAZARD IDENTIFICATION**

Signs and Symptoms of Exposure	1. Acute Hazards	Direct skin or eye contact may cause local irritation. Inhalation or ingestion of lead dust or fumes may result in headache, nausea, vomiting, abdominal spasms, fatigue, sleep disturbances, weight loss, anemia and leg, arm and joint pain.				
	2. Sub-Chronic and Chronic Health Effects	Prolonged exposure may cause central nervous system damage, gastrointestinal disturbances, anemia, wrist-drop and kidney dysfunction. Pregnant women should be protected from excessive exposure to prevent lead from crossing the placental barrier and causing infant neurological disorders.  <b>California Proposition 65 Warning: This product contains lead and lead compounds, which are chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.</b>				
Medical Conditions Generally Aggravated by Exposure	Pulmonary edema, bronchitis, emphysema, dental erosion and tracheobronchitis.					
Routes of Entry	Inhalation- YES Ingestion – YES	Eye Contact- YES		Skin Absorption- NO		
Chemical(s) Listed as Carcinogen or potential Carcinogen	Proposition 65 - YES	National Toxicology Program - YES	I.A.R.C. Monographs - YES	O.S.H.A. - NO	EPA CAG - YES	N.I.O.S.H. - YES

## SECTION 4 - FIRST AID MEASURES

Emergency and First Aid Procedures	Contact with Lead/Pasted Plates
1. Inhalation	Move to ventilated area. Obtain medical attention if experiencing effects of overexposure.
2. Eyes	Flush the eyes with copious quantities of cool running water for 15 minutes. Obtain immediate medical attention.
3. Skin	Wash area thoroughly with soap and water.
4. Ingestion	Do not induce vomiting. If conscious drink large amounts of water/milk. Obtain medical attention. Never give anything by mouth to an unconscious person.
5. Lead Exposure	May cause lassitude, constipation, anemia, nausea, vomiting, paralysis, and central nervous system depression. Greatest exposure comes from dust in the air and on hands when packing/unpacking, and during lead acid battery manufacturing.

## SECTION 5 – FIRE-FIGHTING MEASURES

Flash Point – Not Applicable	Flammable Limits in Air % by Volume	Lower N/A	Upper N/A	Extinguishing Media – Dry Chemical or CO <sub>2</sub>	Auto-Ignition - Not Applicable Temperature
Special Fire Fighting Procedures	Do not use water on fires where molten metal is present. Use NIOSH/MSHA approved SCBA and full body protective equipment operated in positive pressure mode.				
Unusual Fire and Explosion Hazards	Molten metals produce fumes and/or vapor that may be toxic or respiratory irritants. Product can react vigorously with strong oxidizing agents.				

## SECTION 6 – ACCIDENTAL RELEASE MEASURES

Procedures for Cleanup: Avoid contact with any spilled material. Contain spill, isolate hazard area, and deny entry. Limit site access to emergency responders. Material should be vacuumed with HEPA filter or wet swept and stored in dry containers for later disposal. Do not use compressed air or dry sweeping as a means of cleaning.

Personal Precautions: Wear protective clothing and appropriate NIOSH/MSHA approved respirator. ANSI approved safety glasses with side shields recommended.

Environmental Precautions: Lead and its compounds are a severe threat to the environment. Contamination of water, soil and air should be prevented.

## SECTION 7 – HANDLING AND STORAGE

Precautions to be Taken in Handling and Storage	Store away from reactive materials, open flames and sources of ignition as defined in Section 10 – Stability and Reactivity.
Other Precautions	GOOD PERSONAL HYGIENE AND WORK PRACTICES ARE MANDATORY. Refrain from eating, drinking or smoking in work areas. Thoroughly wash hands, face, neck and arms before eating, drinking and smoking. Work clothes and equipment should remain in designated lead contaminated areas, and never taken home or laundered with personal clothing. Wash soiled clothing, work clothes, and equipment before reuse.

## SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Respiratory Protection	NIOSH approved respirator is required when the PEL is exceeded or employee experiences respiratory irritation. When exposure levels are unknown or when fire-fighting, wear a self-contained breathing apparatus with a full face-piece operated in positive pressure mode.		
Ventilation	Use adequate general or local exhaust ventilation to keep airborne concentration below the PEL.		
Protective Gloves	Rubber Gloves	Eye Protection	ANSI approved safety glasses with side shields recommended.
Other Protective Clothing or Equipment	Aprons, boots and protective clothing appropriate for an industrial environment. Ventilation, as described in the <u>Industrial Ventilation Manual</u> produced by the American Conference of Governmental Industrial Hygienists, shall be provided in areas where exposures are above the PEL or TLV specified by OSHA or other local, state and federal regulations. Safety shower and eyewash.		

## SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: Not Applicable	Vapor Pressure	Not Applicable	Specific Gravity	7.4 g/ml	Melting Point: 550°F
Percent Volatile By Volume	Not Applicable	Vapor Density	Not Applicable		Evaporation Rate
Solubility In water	33 mg/l	Reactivity in Water		None	
Appearance and Odor:	Lead: Gray metallic, solid Lead Oxide: Orange or gray paste No apparent odor		Product manufactured by pasting lead oxide over lead frame (grid).		

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## SECTION 10 – STABILITY AND REACTIVITY

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Stability: Stable	Conditions to Avoid: Intense Heat; avoid high concentrations of corrosives/acids.
Incompatibility (Materials to Avoid)	Strong oxidizers and this product may liberate hydrogen gas.
Hazardous Decomposition Products	Molten metals produce fumes and/or vapors that may be toxic or respiratory irritants.
Hazardous Polymerization	Hazardous Polymerization has not been reported.

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## SECTION 11 - TOXICOLOGICAL INFORMATION

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GENERAL: The primary routes of exposure are ingestion or inhalation of dust.

ACUTE:

INHALATION/INGESTION: Exposure to lead and its compounds may cause headache, nausea, vomiting, abdominal spasms, fatigue, sleep disturbances, weight loss, anemia, and pain in the legs, arms and joints. Kidney damage, as well as anemia, can occur from acute exposure.

CHRONIC:

INHALATION/INGESTION: Prolonged exposure to lead and its compounds may produce many of the symptoms of short-term exposure and may also cause central nervous system damage, gastrointestinal disturbances, anemia, and wrist drop. Symptoms of central nervous system damage include fatigue, headaches, tremors, hypertension, hallucination, convulsions and delirium. Kidney dysfunction and possible injury has also been associated with chronic lead poisoning. Chronic overexposure to lead has been implicated as a causative agent for the impairment of male and female reproductive capacity, but there is at present, no substantiation of the implication. Pregnant women should be protected from excessive exposure. Lead can cross the placental barrier and unborn children may suffer neurological damage or developmental problems due to excessive lead exposure in pregnant women.

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## SECTION 12 - ECOLOGICAL INFORMATION

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In most surface water and groundwater, lead forms compounds with anions such as hydroxides, carbonates, sulfates, and phosphates, and precipitates out of the water column. Lead may occur as sorbed ions or surface coatings on sediment mineral particles or may be carried in colloidal particles in surface water. Most lead is strongly retained in soil, resulting in little mobility. Lead may be immobilized by ion exchange with hydrous oxides or clays or by chelation with humic or fulvic acids in the soil. Lead (dissolved phase) is bioaccumulated by plants and animals, both aquatic and terrestrial.

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## SECTION 13 - DISPOSAL CONSIDERATIONS

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DISPOSE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS FOR LEAD AND LEAD COMPOUNDS.

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## SECTION 14 - TRANSPORT INFORMATION

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U.S. DOT PROPER SHIPPING NAME: RQ, Environmentally Hazardous Substances, solid, n.o.s.  
U.S. DOT HAZARD CLASS: 9  
U.S. DOT ID NUMBER: UN3077  
U.S. DOT PACKING GROUP: III  
U.S. DOT LABEL: Class 9

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## SECTION 15 - REGULATORY INFORMATION

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U.S. HAZARDOUS UNDER HAZARD COMMUNICATION STANDARD:

LEAD – YES  
ANTIMONY – YES  
ARSENIC – YES  
LEAD SULFATE - YES

INGREDIENTS LISTED ON TSCA INVENTORY: YES  
CERCLA SECTION 304 HAZARDOUS SUBSTANCES:

LEAD – YES

RQ: REPORTING NOT REQUIRED WHEN DIAMETER OF THE PIECES OF SOLID METAL RELEASED IS EQUAL TO OR EXCEEDS 100 µm (micrometer).

ANTIMONY – YES  
ARSENIC – YES  
LEAD SULFATE –YES

RQ: 5000 POUNDS  
RQ: 1 POUND  
RQ: 10 POUNDS

EPCRA SECTION 313 TOXIC RELEASE INVENTORY:

LEAD – CAS NO: 7439-92-1  
ANTIMONY – CAS NO: 7440-36-0  
ARSENIC – CAS NO: 7440-38-2  
LEAD SULFATE – CAS NO: 7446-14-2

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## SECTION 16 - OTHER INFORMATION

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THE INFORMATION ABOVE IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST INFORMATION CURRENTLY AVAILABLE TO US. HOWEVER, TROJAN BATTERY COMPANY MAKES NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, WITH RESPECT TO SUCH INFORMATION, AND WE ASSUME NO LIABILITY RESULTING FROM ITS USE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION FOR THEIR PARTICULAR PURPOSES. ALTHOUGH REASONABLE PRECAUTIONS HAVE BEEN TAKEN IN THE PREPARATION OF THE DATA CONTAINED HEREIN, IT IS OFFERED SOLELY FOR YOUR INFORMATION, CONSIDERATION AND INVESTIGATION. THIS MATERIAL SAFETY DATA SHEET PROVIDES GUIDELINES FOR THE SAFE HANDLING AND USE OF THIS PRODUCT; IT DOES NOT AND CANNOT ADVISE ON ALL POSSIBLE SITUATIONS, THEREFORE, YOUR SPECIFIC USE OF THIS PRODUCT SHOULD BE EVALUATED TO DETERMINE IF ADDITIONAL PRECAUTIONS ARE REQUIRED.

Form MSDS Rev. May 13, 2010