MAINTENANCE-FREE
SEALED LEAD-ACID

BATTERY MANUFACTURER'S MSDS
DISTRIBUTED BY:
DUAL-LITE

MATERIAL SAFETY DATA SHEET

MSDS #4

DATE: Jan. 12, 2001

PRODUCT NAME	PRC Sealed Maintenance Free Batteries	TELEPHONE NO.: Not Applicable
HAZARDOUS COMPONENTS	Lead, Sulfuric Acid	

HAZARDOUS COMPONENTS

COMPONENT	NO. CAS	% WEIGHT	OSHAPEL(TLV)	LD_{50} ORAL	LD_{50} INHALATION	LD_{50} CONTACT
Lead (Pb, PbO_2, $PbSO_4$)	7439-92-1	65-75%	0.050 mg/m^3	500 mg/kg	20 mg/m^3	N/A
Sulfuric Acid	7664-93-9	17-30%	1 mg/m^3	2.140 kg/kg	18 mg/m^3	135 mg/kg

PHYSICAL DATA

COMPONENT	DENSITY	MELTING POINT (BOILING)	SOLUBILITY IN WATER	ODOR	APPEARANCE
Lead	11.34 gm/cm^3	621.5˚F	None	None	Silver-Gray Metal
Lead Sulfate	6.2 gm/cm^3	2132˚ F	.43 mg/1	None	White Powder
Lead Dioxide	9.375 gm/cm^3	d. 554˚ F	None	None	Brown Powder
Sulfuric Acid	1.290 gm/cm^5	235˚ F	100%	None	Clear Colorless Liquid

FLAMMABILITY DATA

COMPONENT	FLASHPOINT	EXPLOSIVE LIMITS	COMMENTS
Lead	None	None	Use "ABC" type fire extinguisher for battery fires.
Sulfuric Acid	None	None	
Hydrogen	<0˚ F	4%-74.2%	PRC Sealed batteries can emit hydrogen only if over charged (float voltage 2.40 VPC or greater).

HEALTH HAZARD DATA

LEAD: The toxic effects of lead are accumulative, and slow to appear. It affects the kidneys, reproductive, and central nervous systems. The symptoms of lead over exposure are anemia, vomiting, headache, stomach pain (lead colic), dizziness, loss of appetite and muscles and joints pain. Exposure to lead from a battery most often occurs during lead reclaim operation through the breathing or ingestion of lead dusts and fumes. This sheet must be passed to any scrap dealer or smelter when the battery is resold.

SULFURIC ACID: Sulfuric acid is a strong corrosive Contact with the acid can cause severe burns to the skin and eyes. Ingestion of sulfuric acid will cause gastro intestinal tract burns.
SEE OTHER SIDE FOR FIRST AID INSTRUCTIONS.

REACTIVITY DATA

COMPONENT	Sulfuric Acid
STABILITY	Stable at all temperatures
POLYMERIZATION	Will not polymerize
INCOMPATIBILITY	Reactive metals, strong bases, most organic compounds
DECOMPOSITION PRODUCTS	Sulfuric Dioxide, Sulpher Trioxide, Hydrogen Sulfide, Hydrogen
CONDITIONS TO AVOID	Prohibit smoking, sparks, flames, etc. from battery charging area. Avoid mixing acid with other chemicals.

SPILL OR LEAK PROCEDURES

STEPS TO TAKE IN CASE OF LEAK OR SPILL

If sulfuric acid is spilled from a battery, neutralize the acid with sodium bicarbonate (baking soda), sodium carbonate (soda ash) or calcium oxide (lime). Flush the area with water, and dispose of as hazardous waste

WASTE DISPOSAL METHOD

1) Spent lead acid batteries are disposed of using three (3) acceptable methods: send the batteries to: (a) licensed secondary lead smelters for recycling (b) reputable battery handlers (c) reputable scrap dealers.
2) If the user has to transport these batteries to the smelters, the user must follow department of transportation (DOT) regulations.
A copy of this material safety data sheet must be supplied to any scrap dealer or secondary lead smelter. Follow applicable Federal, State, and Local regulations.

PROTECTION

EXPOSURE SITE	PROTECTION
SKIN	Rubber gloves, apron
RESPIRATORY	Protective equipment must be worn if the battery is cracked or otherwise damaged. HEPA respirator should be worn during reclaim operations, if the OSHA PEL is exceeded.
EYES	Safety goggles, face shield

ELECTRICAL SAFETY

Due to the PRC battery's low internal resistance and high power density, high levels of short circuit current can be developed across the battery terminals. Do not rest tools or cables on the battery. Use insulated tools only. Follow all installation instructions and diagrams when installing or maintaining battery systems.

FIRST AID

Sulfuric Acid

Skin Contact - Flush with water, see physician if contact area is large, or if blisters form.

Eye Contact - Call physician immediately, flush with water until physician arrives.

Ingestion - Call physician. DO NOT INDUCE VOMITING. DO NOT GIVE ANYTHING TO AN UNCONSCIOUS PERSON.