

MATERIAL SAFETY DATA SHEET

DATE: Jan. 31, 1996

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

HAZARDOUS COMPONENTS

| COMPONENT | % WEIGHT | OSHA PEL(TLV) | LD ₅₀ | LC ₅₀ | LD ₅₀ |
|---|----------|-------------------------|------------------|----------------------|------------------|
| | | | ORAL | INHALATION | CONTACT |
| Lead (as Pb, PbO ₂ , PbSO ₄) | 65-75% | 0.050 mg/m ³ | 500 mg/kg | 20 mg/m ³ | N/A |
| Sulfuric Acid | 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). |

HEALTH HAZARD DATA

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| LEAD | The toxic effects of lead are accumulative, and slow to appear. It affects the kidneys, reproductive, and central nervous system. The symptoms of lead overexposure are anemia, vomiting, headache, stomach pain (lead colic), dizziness, loss of appetite, and muscle and joint pain. Exposure to lead from a battery most often occurs during lead reclaim operations 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 GI tract burns. Acid can be released if the battery case is damaged or if the vents are tampered with. SEE OTHER SIDE FOR FIRST AID INSTRUCTIONS. |

REACTIVITY DATA

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| COMPONENT | Sulfuric Acid |
| STABILITY | Stable at all temperatures |
| POLYMERIZATION | Will not polymerize |
| INCOMPATIBILITY | Reactive metals, strong bases, most organic compounds |
| DECOMPOSITION PRODUCTS | Sulfuric dioxide, 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

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| STEPS TO TAKE IN CASE OF LEAK OR SPILL | <p>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 discard to the sewage system. Do not allow unneutralized acid into the sewage system.</p> |
| WASTE DISPOSAL METHOD | <p>Spent lead-acid batteries are disposed of using 3 acceptable methods: Send the batteries to: A) Licensed secondary lead smelters for recycling, B) Reputable battery handlers, C) Reputable scrap dealers If the user has to transport these batteries to the smelter, 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.</p> |

PROTECTION

| EXPOSURE SITE | PROTECTION | COMMENTS |
|---------------|-----------------------------|--|
| SKIN | Rubber gloves, apron | 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. |
| RESPIRATORY | HEPA Respirator (for lead) | |
| EYES | Safety goggles, face shield | |

ELECTRICAL SAFETY

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| <p>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.</p> |
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FIRST AID

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| <p><u>Sulfuric Acid</u></p> <p>Skin Contact - Flush with water, see physician if contact area is large, or if blisters form.</p> <p>Eye Contact - Call physician immediately, flush with water until physician arrives.</p> <p>Ingestion - Call physician. DO NOT INDUCE VOMITING. If patient is conscious, flush mouth with water, have the patient drink milk, or sodium bicarbonate solution. DO NOT GIVE ANYTHING TO AN UNCONSCIOUS PERSON.</p> |
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