POWER-SONIC

MATERIAL SAFETY DATA SHEET

Product Name: Sealed Maintenance Free Lead-Acid Batteries	

DATE:	1/8/2001	ISSUED BY	ENGINEERING	TELEPHONE NO.:	(619) 661-2030

HAZARDOUS COMPONENTS

COMPONENTS	% WEIGHT	TLV	LD50	LC50	LC50
			ORAL	INHALATION	CONTACT
Lead (Pb, $Pb0_2$, $PBSO_4$)	about 70%	N/A	(500) mg/kg	N/A	N/A
Sulfuric Acid	about 20%	1mg/m3	(2,140) mg/kg	N/A	N/A
Fiberglass Separator	about 5%	N/A	N/A	N/A	N/A
Styron R 478 (Polystyrene)	about 5%	N/A	N/A	N/A	N/A

PHYSICAL DATA

COMPONENT	DENSITY	MELTING POINTS	SOLLUBILITY (H_2O)	ODOR	APPEARANCE
Lead	11.34	327.4° C (Boiling)	None	None	Silver-Gray Metal
Lead Sulfate	6.2	1,070° C (Boiling)	40 mg/l (15° C)	None	White Powder
Lead Dioxide	9.4	290° C (Boiling)	None	None	Brown Powder
Sulfuric Acid	about 1.3	about 114° C (Boiling)	100%	Acidic	Clear Colorless Liquid
Fiberglass Sep.	N/A	N/A	Slight	Toxic	White Fibrous Glass
478 Polystyrene	N/A	N/A	None	No Odor	Solid

FLAMMABILITY DATA

COMPONENT	FLASHPOINT	EXPLOSIVE LIMITS	COMMENTS
Lead	None	None	
Sulfuric Acid	None	None	
Hydrogen		4% - 72.4%	Sealed batteries can emit hydrogen only if over charged (float voltage > 2.40 VPC)
Fiberglass Sep.	N/A	N/A	Toxic vapors may be released. In case of fire: wear self-contained breathing apparatus.
478 Polystyrene	None	N/A	Temp. over 300° C (572° F) may release combustible gases. In case of fire: wear positive pressure slef-contained breathing apparatus.

FIRST AID

SULFURIC ACID PRECAUTIONS	
Skin Contact:	Flush with water, see physician if contact area is large or if blisters form.
Eye Contact:	Call physician immediately and flush with water until physicial arrives.
Ingestion:	Call physician. If patient in conscious, flush mouth with water, have patient drink milk or sodium bicarbonate solution.

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REACTIVITY DATA

COMPONENT	Sulfuric Acid
STABILITY	Stable at all temperatures
COLYMERIZATION	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, 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, neutrilize acid with bicarbonate (baking soda), sodium carbon (soda ash), or calcium oxide (lime). Flush area with water and discard to the sewage system. Do not allow unneutralized acid into sewage system.
Waste disposal method:	Neutrilized acid may be flushed down the sewer. Spent batteries must be treated as hazardous waste and disposed of according to local, state, and federal guidelines. A copy of this MSDS must be supplied to any scrap dealer or secondary lead smelter with battery.

PROTECTION

EXPOSURE SITE	PROTECTION	COMMENTS
SKIN	Rubber gloves, Apron	Protective equipment must be worn if the battery is cracked or otherwise damaged. A respirator should be worn during reclaim operations if the TLV is exceeded.
RESPIRATORY	Respirator (for lead)	
EYES	Safety goggles, Face Shield	

ELECTRICAL SAFETY

Due to the 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.

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 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 oftern occurs during lead reclaim operations through the breathing or ingestion of lead dust or fumes.

SULFURIC ACID: Sulfuric acid is a strong corrosive. Contact with acid can casue severe burns on the skin and in eyes. Ingestion of sulfuric acid will cause GI tract burns. Acid can be released if the battery case is damaged or if vents are tampered with.

FIBERGLASS SEPARATOR: Fibrour glass is an irritant of the upper repiratory tract, skin and eyes. For exposure up to 10F/CC use MSA Comfoll with type H filter. Above 10F/CC up to 50F/CC use Ultra-Twin with type H filter. This product is not considered carcinogenic by NTP or OSHA.

ALL DATA MUST BE PASSED TO ANY SCRAP DEALER OR SMELTER WHEN BATTERY IS RESOLD.