

B & B Battery (U.S.A.), Inc.

6414 Randolph Street, City of Commerce, CA 90040 (323) 278-1900 Fax (323) 278-1268

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: Sealed Maintenance free Lead Acid Batteries

DATE: 7/1/00

ISSUED BY: ENGINEERING

TELEPHONE NO: (323) 278-1900

HAZARDOUS COMPONENTS

| COMPONENTS | %WEIGHT | TLV | LD50 ORAL | LC50 INHALATION | LC50 CONTACT |
|------------------------------------|-----------|---------------------|---------------|-----------------|--------------|
| Lead (Pb, PbO ₂ , PbSo) | About 70% | N/A | (500) mg/Kg | N/A | N/A |
| Sulfuric Acid | About 20% | 1 mg/m ³ | (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

| COMPONENTS | DENSITY | MELTING POINT | SOLLUBILITY (H ² O) | ODOR | APPEARANCE |
|-----------------|-----------|-----------------------|--------------------------------|---------|------------------------|
| Lead | 11.34 | 327.4°C (Boiling) | None | None | Sliver-Gray Metal |
| Lead Sulfate | 6.2 | 1070°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 Polyslyrene | N/A | N/A | NONE | NO ODOR | SOLID |

FLAMMABILITY DATA

| COMPONENTS | FLASHPOINT | EXPLOSIVE LIMITS | COMMENTS |
|-----------------|------------|------------------|--|
| Lead | None | None | |
| Sulfuric Acid | None | None | |
| Hydrogen | | 4% - 74.2% | Sealed batteries can emit hydrogen only if over charged (fload voltage > 2.4 VPC) |
| Fiberglass Sep. | N/A | N/A | Toxic vapors may be released. In case of fire: wear self-contained breathing apparatus. |
| 478 Polyslyrene | None | N/A | Temperatures over 300 °C (572°F) may release combustible gases. In case of fire: wear positive pressure self-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 physician arrives.

Ingestion: Call physician. 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.

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, trioxide, hydrogen sulfide, hydrogen |
| CONDITIONS TO AVOID | Prohibit smoking, sparks, etc. from battery charging area. Avoid mixing acid with other chemicals. |

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SPILL OR LEAK PROCEDURES

STEPS TO TAKE IN CASE OF LEAKS OR SPILLS

If sulfuric acid is spilled from a battery, neutralize the acid with sodium bicarbonate (baking soda), sodium carbon (soda ash), or calcium oxide (lime).

Flush the area with water discard to the sewage systems. Do not allow unneutralized acid into the sewage system.

WASTE DISPOSAL METHOD:

Neutralized acid may be flushed down the sewer. Spent batteries must be treated as hazardous waste and disposed of according to local state, and federal regulations. A copy of this material safety data must be supplied to any scrap dealer or secondary smelter with battery.

PROTECTION

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

ELECTRICAL SAFETY

Due to the battery's low internal resistance and high power density. High levels of short circuit can be developed across the battery terminals. Do not rest tools or cables on the battery. Use insulated tools only.

Follow all installation instruction 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 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 DATA MUST BE PASSED TO ANY SCRAP OR SMELTER WHEN A BATTERY IS RESOLD.

SULFURIC ACID: Sulfuric acid is a strong corrosive. Contact with acid can cause severe burns on the skin and in the eyes.

Ingestion of sulfuric acid will cause GI tract burns. Acid can be release if the battery case is damaged or if the vents are tampered with.

FIBERGLASS SEPARATOR: Fibrous glass is an irritant of the upper respiratory 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.

B & B Battery (USA) Inc.

6415 Randolph St.,
City of Commerce, Ca 90040
Tel: (323) 278-1900
Fax: (323) 278-1268

June 21, 2000

To: Customer of B & B Battery (USA) Inc. BP Series Batteries.

Subject: Transportation requirements in accordance with the Department of Transportation (D.O.T.)/ International Air Transport Association (I.A.T.A.) dangerous goods regulations as applied to B & B Battery BP Series Maintenance Free rechargeable sealed lead acid batteries.

We hereby certify that all B & B Battery BP Series Maintenance Free rechargeable sealed lead acid batteries conform in the UN2800 classification as " Batteries, wet, Non- Spillable, electric storage"

We further certify that under (I.A.T.A.) Dangerous Goods Regulation, 41st edition, UN2800 provision A67 and the (D.O.T.), CFR 49 Section 173.159 paragraph d., B & B Batteries having met the related conditions are EXEMPT from hazardous goods regulations, and therefore are unrestricted for Transportation by any means. Batteries must be protected so as to prevent short circuit, and must be securely packaged, and containers must be labeled " Non- Spillable" or " Non- Spillable Battery."

For your reference:

IATA Dangerous Goods Regulation,41th edition, Section 4.4 Special Provisions:

Non-Spillable batteries are considered to be Non-dangerous if at temperature of 55 deg. C (130 deg. F), the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, when packaged for transport, the terminals are protected from short circuit.

B & B Battery (USA) Inc.