



U.S. Department
of Transportation

**Research and
Special Programs
Administration**

400 Seventh Street, S.W.
Washington, D.C. 20590

SEP 18 1998

Mr. David Brammer
VFP Inc.
P.O. Box 11927
Roanoke, VA 24022-1927

Ref. No. 98-0267

Dear Mr. Brammer:

This is in response to your letter dated September 3, 1998, regarding the shipment of electric storage batteries under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180).

Electric storage batteries meeting the criteria specified in § 173.159(e)(1) through (e)(4) are not subject to the hazardous materials regulations. The batteries must: (1) be the only hazardous material on the vehicle; and (2) be loaded or braced so as to prevent damage and short circuits. In addition, any other material loaded in the vehicle must be blocked and braced to prevent contact with or damage to the batteries and the vehicle may not carry material shipped by any person other than the shipper of the batteries. Therefore, under the scenario described in your letter, the batteries your company ships would not be subject to the hazardous materials regulations.

I hope this satisfies your request.

Sincerely,

John A. Gale
Transportation Regulations Specialist
Office of Hazardous Materials Standards

BAH
\$173.159

VFP, INC.
PO BOX 11927
ROANOKE, VA 24022-1927

98-0267

Fax Cover Sheet

DATE: SEPTEMBER 3, 1998

TO: EDWARD MAZZULLO PHONE:
US DOT HAZARDOUS MATERIAL FAX: 202 366-3012
INFORMATION CENTER

FROM: DAVID BRAMMER PHONE: 540 977-0500
FAX: 540 977-5555

RE: INTERPERTATION REGARDING THE SHIPPING OF ELECTRIC STORAGE
BATTERIES (UN 2794 & UN 2800)

Number of pages including cover sheet: 15

MR. MAZZULLO MY COMPANY MANUFACTURES/BUILDS FIBERGLASS, METAL & CONCRETE BUILDING PRIMARLY USED IN THE COMMUNICATION INDUSTRY TO HOUSE TELECOMMUNICATION SWITCHING EQUIPMENT. THE BUILDINGS SHIP ASSEMBLED, A TYPICAL BUILDING IS 20' LONG x 12' WIDE x 10'10" HIGH.

BUILDINGS OFTEN SHIP CONTAINING ELECTRIC STORAGE BATTERIES. THE BATTERIES ARE PERMANENTLY MOUNTED TO THE FLOOR AND FOR SHIPPING ARE BRACED INTO THE WALLS ON THE SIDES AND INTO THE CEILING. CABLES ARE UNHOOKED AND PROPERLY SECURED, ALL POST ARE PROTECTED USING PROTECTIVE DEVICES SUPPLIED BY THE BATTERY MANUFACTUER.

IN THE PAST WE HAVE SHIPPED BUILDING CONTAINING BATTERIES WITH A GROSS WEIGHT EXCEEDING 1001 LB. AND HAVE NOT DOCUMENTED SHIPPING PAPERS OR PUT PLACARDS ON THE LOAD. IT IS MY INTERPRETATION THAT WE ARE EXCEMPTED FROM THE REQUIREMENTS OF 172 SUBPART C - SHIPPING PAPERS AND SUBPART F - PLACARDING BECAUSE WE MEET THE REQUIREMENTS OF 173.159 SECTION E.

- NO OTHER HAZARDOUS MATERIALS ARE TRANSPORTED IN THE BUILDING OR ON THE VEHICLE:
- BATTERIES ARE LOADED AND BRACED SO AS TO PREVENT DAMAGE AND SHORT CIRCUITS IN TRANSIT:

- ALL OTHER MATERIAL IN THE BUILDING IS BLOCKED, BRACED OR OTHERWISE SECURED TO PREVENT CONTACT WITH OR DAMAGE TO THE BATTERIES:
- THE TRANSPORT VEHICLE DOES NOT CARRY MATERIAL SHIPPED BY ANY PERSON OTHER THAN THE SHIPPER OF THE BATTERIES.

I WOULD LIKE TO GET AN INTERPRETATION ON THIS MATTER SO THAT WE ARE SAFELY AND CORRECTLY SHIPPING OUR PRODUCT AND SO WE HAVE SOMETHING TO KEEP ON FILE.

I AM INCLUDING THE MSDS SHEETS FOR THE TWO TYPES OF BATTERIES.

IF YOU HAVE ANY QUESTIONS OR NEED ADDITIONAL INFORMATION PLEASE CONTACT ME AT 540 977-0500, YOUR RESPONSE CAN BE FAXED TO MY ATTENTION AT 540 977-5555.

THANK YOU FOR YOUR HELP IN THIS MATTER.

BATTERIES, WET, FILLED WITH ACID

8, PG III

GROSS WEIGHT = 1314 LB.



MATERIAL SAFETY DATA SHEET

Revised 11/93
 Page 1 of 7

I. PRODUCT IDENTIFICATION

Chemical/Trade Name (as used on label)

Chemical Family/Classification

Lead-Acid Battery

Electric Storage Battery

Manufacturer's Name/Address

Telephone

Yuasa-Exide, Inc.
 645 Penn Street
 Reading, PA 19601

For information and emergencies, contact Yuasa-Exide.,
 Environmental Resources Dept. (215) 371-0400.

24-hour Emergency Response Contact:
 CHEMTREC (800) 424-9300

II. HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

<u>Components</u>	<u>CAS Number</u>	<u>Approximate % by Wt. or Vol.</u>	<u>Air Exposure Limits (ppm/m³)</u>		
			<u>OSHA</u>	<u>ACGIH</u>	<u>NIOSH</u>
<u>Inorganic lead compound:</u>					
Lead	7439-92-1	60	50	160	100
Antimony	7440-36-0	2	500	500	--
Arsenic	7440-38-2	0.2	10	200	--
Calcium	7440-70-2	0.2	--	--	--
Tin	7440-31-5	0.2	2000	2000	--
Electrolyte (sulfuric acid)	7584-93-9	10-30	1000	1000	1000
<u>Case Material:</u>					
Polypropylene	9003-07-0	5-10	N/A	N/A	N/A
Polystyrene	9003-83-6				
Styrene Acrylonitrile	9003-54-7				
Acrylonitrile Butadiene Styrene	9003-55-9				
Styrene Butadiene	9003-55-8				
Polyvinylchloride	9002-86-2				
Polycarbonate	--				
Hard Rubber	--				
Polyethylene	--				
<u>Other</u>					
Silicon dioxide (gel cell batteries only)	80676-86-0	10	N/A	N/A	N/A
Sheet Molding Compound (glass-reinforced polyester)	--	10	N/A	N/A	N/A

NOTE: Inorganic lead and electrolyte (sulfuric acid) are the primary components of every battery manufactured by Yuasa-Exide, Inc. Other ingredients may be present dependent upon battery type. Contact your Yuasa-Exide representative for additional information.

III. PHYSICAL DATA

Electrolyte:

<u>Boiling Point:</u>	203 °F	<u>Specific Gravity (H₂O = 1):</u>	1.215 to 1.350
<u>Melting Point:</u>	Not Applicable	<u>Vapor Pressure (mm Hg):</u>	10
<u>Solubility in Water:</u>	100%	<u>Vapor Density (AIR = 1):</u>	Greater than 1
<u>Evaporation Rate</u> (Butyl acetate = 1)	Less Than 1	<u>% Volatiles by Weight:</u>	Not Applicable

Appearance and Odor: Manufactured article; no apparent odor. Electrolyte is a clear liquid with a sharp, penetrating, pungent odor.

IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point: Not Applicable Flammable Limits: LEL = 4.1% (Hydrogen Gas) UEL = 74.2%

Extinguishing media: CO₂; foam; dry chemical

Special Fire Fighting Procedures: If batteries are on charge, shut off power. Use positive pressure, self-contained breathing apparatus. Water applied to electrolyte generates heat and causes it to spatter. Wear acid-resistant clothing.

Unusual Fire and Explosion hazards: Highly flammable hydrogen gas is generated during charging and operation of batteries. To avoid risk of fire or explosion, keep sparks or other sources of ignition away from batteries. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Follow manufacturer's instructions for installation and service.

V. REACTIVITY DATA

Stability: Stable X
 Unstable _____ Conditions to Avoid: Prolonged overcharge; sources of ignition.

Incompatibility: (materials to avoid)

Sulfuric acid: Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide gas, strong oxidizers and water. Contact with metals may produce toxic sulfur dioxide fumes and may release flammable hydrogen gas.

Lead compounds: Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen and reducing agents.

Hazardous Decomposition Products:

Sulfuric acid: Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, hydrogen.

Lead compounds: High temperatures likely to produce toxic metal fume, vapor or dust; contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas.

VI. HEALTH HAZARD DATA

Routes of Entry:

Sulfuric acid: Harmful by all routes of entry.

Lead compounds: Hazardous exposure can occur only when product is heated, oxidized or otherwise processed or damaged to create dust, vapor or fume.

Inhalation:

Sulfuric acid: Breathing of sulfuric acid vapors or mists may cause severe respiratory irritation.

Lead compounds: Inhalation of lead dust or fumes may cause irritation of upper respiratory tract and lungs.

Ingestion:

Sulfuric acid: May cause severe irritation of mouth, throat, esophagus and stomach.

Lead compounds: Acute ingestion may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping. This may lead rapidly to systemic toxicity and must be treated by a physician.

Skin Contact:

Sulfuric acid: Severe irritation, burns and ulceration.

Lead compounds: Not absorbed through the skin.

Eye Contact:

Sulfuric acid: Severe irritation, burns, cornea damage, blindness.

Lead compounds: May cause eye irritation.

Effects of Overexposure - Acute:

Sulfuric acid: Severe skin irritation, damage to cornea, upper respiratory irritation.

Lead compounds: Symptoms of toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability.

Effects of Overexposure - Chronic:

Sulfuric acid: Possible erosion of tooth enamel; inflammation of nose, throat and bronchial tubes.

Lead compounds: Anemia; neuropathy, particularly of the motor nerves, with wrist drop; kidney damage; reproductive changes in both males and females.

Carcinogenicity:

Sulfuric acid: The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category 1 carcinogen, a substance that is carcinogenic to humans. This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery. Inorganic acid mist (sulfuric acid mist) is not generated under normal use of this product. Misuse of the product, such as overcharging, may result in the generation of sulfuric acid mist.

Lead compounds: Lead is listed as a 2B carcinogen, likely in animals at extreme doses. Proof of carcinogenicity in humans is lacking at present.

Arsenic: Listed by National Toxicology Program (NTP), International Agency for Research on Cancer (IARC), OSHA and NIOSH as a carcinogen only after prolonged exposure at high levels.

VI. HEALTH HAZARD DATA (Continued)

Medical Conditions Generally Aggravated by Exposure:

Overexposure to sulfuric acid mist may cause lung damage and aggravate pulmonary conditions. Contact of sulfuric acid with skin may aggravate skin diseases such as eczema and contact dermatitis. Lead and its compounds can aggravate some forms of kidney, liver and neurologic diseases.

Emergency and First Aid Procedures:

Inhalation:

Sulfuric acid: Remove to fresh air immediately. If breathing is difficult, give oxygen.

Lead: Remove from exposure, gargle, wash nose and lips; consult physician.

Ingestion:

Sulfuric acid: Give large quantities of water; do not induce vomiting; consult physician.

Lead: Consult physician immediately

Skin:

Sulfuric acid: Flush with large amounts of water for at least 15 minutes; remove contaminated clothing completely, including shoes.

Lead: Wash immediately with soap and water.

Eyes:

Sulfuric acid and lead: Flush immediately with large amounts of water for at least 15 minutes; consult physician.

VII. PRECAUTIONS FOR SAFE HANDLING AND USE

Spill or Leak Procedures:

Stop flow of material, contain/absorb small spills with dry sand, earth, vermiculite. Do not use combustible materials. If possible, carefully neutralize spilled electrolyte with soda ash, sodium bicarbonate, lime, etc. Wear acid-resistant clothing, boots, gloves, and face shield. Do not allow discharge of unneutralized acid to sewer.

Waste Disposal Methods:

Spent batteries: Send to secondary lead smelter for recycling.

Place neutralized slurry into sealed containers and dispose of as hazardous waste, as applicable. Large water-diluted spills, after neutralization and testing, should be managed in accordance with approved local, state and federal requirements. Consult state environmental agency and/or federal EPA.

Handling and Storage:

Store batteries in cool, dry, well-ventilated areas with impervious surfaces and adequate containment in the event of spills. Batteries should also be stored under roof for protection against adverse weather conditions. Separate from incompatible materials. Store and handle only in areas with adequate water supply and spill control. Avoid damage to containers. Keep away from fire, sparks and heat.

VII. PRECAUTIONS FOR SAFE HANDLING AND USE (Continued)

Precautionary Labelling:

POISON - CAUSES SEVERE BURNS

DANGER - CONTAINS SULFURIC ACID

VIII. CONTROL MEASURES

Engineering Controls:

Store and handle in well-ventilated area. If mechanical ventilation is used, components must be acid-resistant.

Work Practices:

Handle batteries cautiously to avoid spills. Make certain vent caps are on securely. Avoid contact with internal components. Wear protective clothing when filling or handling batteries.

Respiratory Protection:

None required under normal conditions. When concentrations of sulfuric acid mist are known to exceed PEL, use NIOSH or MSHA-approved respiratory protection.

Protective gloves:

Rubber or plastic acid-resistant gloves with elbow-length gauntlets.

Eye Protection:

Chemical goggles or face shield.

Other Protection:

Acid-resistant apron. Under severe exposure or emergency conditions, wear acid-resistant clothing and boots.

Emergency Flushing:

In areas where sulfuric acid is handled in concentrations greater than 1%, emergency eyewash stations and showers should be provided, with unlimited water supply.

IX. OTHER REGULATORY INFORMATION

NEPA Hazard Rating for sulfuric acid:

Flammability (Red)	=	0
Health (Blue)	=	3
Reactivity (Yellow)	=	2

Sulfuric acid is water-reactive if concentrated.

U.S. DOT: Wet (filled with electrolyte) batteries are regulated by U.S. DOT as hazardous material.

Proper Shipping Name: Batteries, wet, filled with acid

Hazard Class/Division: 8

ID Number: UN2794

Packing Group: III

Label Required: Corrosive

IX. OTHER REGULATORY INFORMATION (Continued)

U.S. DOT (Continued)

Note: Yuasa-Exide batteries which have met the test requirements for "non-spillable wet electric storage batteries", as provided in 49 CFR 173.159(d), are non-regulated by DOT when protected against short circuits and securely packaged. Contact your Yuasa-Exide representative to determine which non-spillable batteries have met these requirements.

If non-spillable wet electric storage batteries have not met these requirements, the following information would apply:

Proper Shipping Name: Batteries, wet, non-spillable
Hazard Class/Division: 8
ID Number: UN2800
Packing Group: III
Label Required: Corrosive

RCRA: Spent lead-acid batteries are not regulated as hazardous waste when recycled. Spilled sulfuric acid is a characteristic hazardous waste; EPA hazardous waste number D002 (corrosivity).

CERCLA (Superfund) and EPCRA:

- (a) Reportable Quantity (RQ) for spilled 100% sulfuric acid under CERCLA (Superfund) and EPCRA (Emergency Planning and Community Right to Know Act) is 1,000 lbs. State and local reportable quantities for spilled sulfuric acid may vary.
- (b) Sulfuric acid is a listed "Extremely Hazardous Substance" under EPCRA, with a Threshold Planning Quantity (TPQ) of 1,000 lbs.
- (c) EPCRA Section 302 notification is required if 1,000 lbs. or more of sulfuric acid is present at one site. The quantity of sulfuric acid will vary by battery type. Contact your Yuasa-Exide representative for additional information.
- (d) EPCRA Section 312 Tier 2 reporting is required for batteries if sulfuric acid is present in quantities of 500 lbs. or more and/or if lead is present in quantities of 10,000 lbs or more.
- (e) **Supplier Notification:** This product contains toxic chemicals which may be reportable under EPCRA Section 313 Toxic Chemical Release Inventory (Form R) requirements. If you are a manufacturing facility under SIC codes 20 through 39, the following information is provided to enable you to complete the required reports:

<u>Toxic Chemical</u>	<u>CAS Number</u>	<u>Approximate % by Weight</u>
Lead	7439-92-1	80
Sulfuric Acid	7664-93-9	10-30
Antimony	7440-36-0	2
Arsenic	7440-38-2	0.2

If you distribute this product to other manufacturers in SIC Codes 20 through 39, this information must be provided with the first shipment of each calendar year.

Note: The Section 313 supplier notification requirement does not apply to batteries which are "consumer products".

* Not present in all battery types. Contact your Yuasa-Exide representative for additional information.

OTHER REGULATORY INFORMATION (Continued)

TSCA

Ingredients in Yuasa-Exide's batteries are listed in the BCA Registry as follows:

<u>Electrolyte</u>	<u>CAS No.</u>	<u>BCA Status</u>
Sulfuric Acid (H ₂ SO ₄)	7664-93-9	Listed
<u>Inorganic Lead Compound</u>		
Lead (Pb)	7439-92-1	Listed
Lead Oxide (PbO)	1317-38-8	Listed
Lead Sulfate (PbSO ₄)	7446-14-2	Listed
Antimony (Sb)	7440-36-0	Listed
Arsenic (As)	7440-32-2	Listed
Calcium (Ca)	7440-70-2	Listed
Tin (Sn)	7440-31-5	Listed

CAA

Yuasa-Exide, Inc. supports preventative actions concerning ozone depletion in the atmosphere due to emissions of CFC's and other ozone depleting chemicals (ODC's), defined by the USEPA as Class I substances. Pursuant to Section 611 of the Clean Air Act Amendments (CAAA) of 1980, finalized on January 19, 1993, Yuasa-Exide, Inc. established a policy to eliminate the use of Class I ODC's prior to the May 15, 1993 deadline.

BATTERIES, WET, NON-SPILLABLE

8, PG III

GROSS WEIGHT = 1572 LB.

GNB BATTERY TECHNOLOGIES MATERIAL SAFETY DATA SHEET

I. Product Identification

Chemical/Trade Name (Identity used on label) ABSOLYTE -XL- V/O-Sealed Lead Acid Battery	Chemical Family/Classification Electric Storage Battery
Company Name GNB Battery Technologies	Address: 829 Parkview Boulevard Lombard, IL 60148-3249
Division or Department Industrial Battery Company - Stationary	
Contact	Telephone Number
Questions concerning MSDS Contact Environmental Assurance Department	Day: 770-673-2470 Steve Emmons
Transportation Emergencies: CHEMTREC	24 hours: 800-424-9300

II. Hazardous Ingredients

MATERIAL	% by Weight	CAS NUMBER	Exposure OSHA	Limits ACGIH
Lead	67-77	7439-92-1	.05 mg/m ³	.15 mg/m ³
Electrolyte: (Sulfuric Acid)	18-24	7664-93-9	1 mg/m ³	1 mg/m ³
Case Material: Polypropylene	2-5	9003-07-0	N/A	N/A
Antimony Oxide	<0.6	7440-36-0	0.5 mg/m ³	0.5 mg/m ³
Separator	2-3	N/A	N/A	N/A
Copper	<1	7440-50-8	1 mg/m ³	N/A
Tin	<0.2	N/A	2 mg/m ³	N/A
Cadmium	0.2-0.3	7440-93-9	0.05 mg/m ³	0.05 mg/m ³
Antimony	0.2-0.4	7440-36-0	0.5 mg/m ³	0.5 mg/m ³

III. Physical Data

Materials (at normal temperatures)	Appearance and Odor Electrolyte is a clear liquid with a sharp, penetrating, pungent odor.
Electrolyte	
Boiling Point (at 760 MM Hg) 203°F	Melting Point N/A
Specific Gravity (H ₂ O=1) 1.230-1.350	Vapor Pressure (mm Hg at 20°C) 10
Vapor Density (AIR=1) Greater than 1	Solubility in Water 100%
% Volatiles by Weight N/A	Evaporation Rate (Butyl Acetate=1) Less than 1

ABSOLYTE-XL.

IV. Health Hazard Information

ROUTES AND METHODS OF ENTRY

Inhalation: Sulfuric Acid vapors or mist may cause severe respiratory irritation. Lead dust or fumes may cause irritation of upper respiratory tract or lungs.
Skin Contact: Sulfuric Acid may cause severe irritation, burns and ulceration. Lead Compounds are not absorbed through the skin.
Skin Absorption: Sulfuric Acid is not readily absorbed through the skin. Lead Compounds are not absorbed through the skin.
Eye Contact: Sulfuric Acid vapors or mist can cause severe irritation, burns, cornea damage and possible blindness. Lead Compounds may cause eye irritation.
Ingestion: Sulfuric Acid may cause severe irritation of mouth, throat, esophagus and stomach. Lead Compounds may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping. Acute ingestion should be treated by physician.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

Acute Effects: Sulfuric Acid may cause severe skin irritation, burns, damage to cornea and possible blindness and upper respiratory irritation. Lead Compounds may cause abdominal pain, nausea, headaches, vomiting, diarrhea, severe cramping and difficulty in sleeping.
Chronic Effects: Sulfuric Acid may lead to scarring of the cornea, inflammation of the nose, throat and bronchial tubes and possible erosion of tooth enamel. Lead Compounds may cause anemia, damage to the kidneys and nervous system. May cause reproductive changes in both males and females.

POTENTIAL TO CAUSE CANCER

Lead has been tested for ability to cause cancer. The results showed that there is insufficient evidence to show that lead can or cannot cause cancer.
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EMERGENCY AND FIRST AID PROCEDURES

Inhalation: Sulfuric Acid - Remove to fresh air immediately. If breathing is difficult, give oxygen. Lead Compounds - Remove from exposure; gargle, wash nose and eyes and consult physician.
Skin: Sulfuric Acid - flush with large amounts of water for at least 15 minutes, remove any contaminated clothing and do not wear again until cleaned. If acid is splashed on shoes, remove and discard if they contain leather. Lead Compounds are not absorbed through the skin.
Eyes: Sulfuric Acid - flush immediately with cool water for at least 15 minutes, then consult physician. Lead Compounds - flush immediately with cool water for at least 15 minutes, then consult physician.
Ingestion: Sulfuric Acid - give large quantities of water; <u>DO NOT</u> induce vomiting, then consult physician. Lead Compounds - consult a physician.

V. Fire and Explosion Data

Flash Point: Not applicable.	Flammable Limits: Lower 4.1% (Hydrogen gas) Upper 74.1%
Extinguishing Media: CO ₂ ; foam; dry chemical.	
Special Fire Fighting Procedures: If batteries on charge, turn off power. Use positive pressure, self-contained breathing apparatus. Water applied to electrolyte generates heat and causes it to splatter. Wear acid resistant clothing.	
Unusual Fire and Explosion Hazard: Hydrogen and Oxygen gases are produced in the cells during normal battery operation or when on charge (Hydrogen is highly flammable and Oxygen supports combustion). These gases enter the air through the vent caps. To avoid risk of fire or explosion, keep sparks and other sources of ignition away from the battery. Do not allow metallic material to simultaneously contact both the positive and negative terminal of batteries. Follow manufacturers' instructions for installation.	

VI. Reactivity Data

Stability: <input type="checkbox"/> = Unstable <input checked="" type="checkbox"/> = Stable	Conditions to Avoid: Sparks and other sources of ignition. Prolonged over charge.
Incompatibility (Material to Avoid): Combination of sulfuric Acid with combustibles, and organic materials may cause fire and explosion. Also avoid strong reducing agents, most metals, carbides, chlorates, nitrates, picrate. Lead Compound: Potassium, carbides, sulfides, peroxides, phosphorus and sulfur.	
Hazardous Decomposition Products: Sulfuric Acid: Hydrogen sulfur dioxide, sulfur trioxide and sulfuric acid mist.	Hazardous Polymerization: <input type="checkbox"/> = May Occur <input checked="" type="checkbox"/> = Will Not Occur

VII: Control Measures

Engineering Controls: Store and handle lead acid batteries in well ventilated areas.
Work Practices: Make certain vent caps are on tightly. Place a minimum of two layers of cardboard between layers of batteries. Do not stack more than three layers high. Do not allow metallic materials to simultaneously contact both the positive and negative terminals of the batteries. Use a battery carrier to lift a battery or place hands at opposite corners to avoid spilling acid through the vents. Avoid contact with internal components of the batteries.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: None are required under normal conditions. If concentrations of sulfuric acid mist are known to exceed PEL, use NIOSH or MSHA approved respiratory protection.
Eyes and Face: Chemical splash goggles or face shield.
Hands, Arm, Body: Rubber or plastic acid resistant gloves with elbow length gauntlet.
Other Special Clothing and Equipment: Acid resistant apron. Under severe exposure or emergency conditions, wear acid resistant clothing and boots.

VIII. Safe Handling Precautions

Hygiene Practices: Wash hands thoroughly before eating, drinking or smoking after handling batteries.
 Protective Measures to be taken during non-routine tasks including equipment maintenance: Not applicable.

SPILL OR LEAK PROCEDURES

Protective measures to be taken if material is released or spilled:
 Remove combustible materials and all sources of ignition. Stop flow of material and contain spill by diking with soda ash (sodium carbonate) or quick lime (calcium oxide). Carefully neutralize spill with soda ash, etc. Make certain mixture is neutral then collect residue and place in a drum or other suitable container with a label specifying "contains hazardous waste" or (if uncertain call distributor regarding proper labeling procedures). Dispose of as hazardous waste. If battery is leaking, place battery in a heavy duty plastic bag. Wear acid resistant boots, faceshield, chemical splash goggles and acid resistant gloves.
DO NOT RELEASE UNNEUTRALIZED ACID.

Waste Disposal Methods:
 Sulfuric Acid: Neutralize as described above for a spill, collect residue and place in a container labeled as containing hazardous waste. Dispose of as a hazardous waste. If uncertain about labeling procedures, call your local battery distributor or contact listed at beginning.

DO NOT FLUSH LEAD CONTAMINATED ACID TO SEWER.

Batteries: Send to lead smelter following applicable federal, state and local regulations.

IX. Other

REGULATORY INFORMATION:

NFPA Hazard rating for Sulfuric Acid:

- Flammability (Red) = 0
- Health (Blue) = 3
- Reactivity (Yellow) = 2

US DOT identification and description for this battery is:

Batteries, wet, non-spillable, Electric Storage

8, UN 2800, PG III, Label: Corrosive

(Exceptions 173.159, paragraph (d), C.F.R. 49)

For air shipments, reference International Air Transportation Association (IATA) Dangerous Goods Regulations Manual, refer to special provisions A-48 and A-67. For ocean shipments, reference International Maritime Dangerous Goods Regulations, Page 8121, Amendment #27-94.

This is to certify that the "Non-Spillable" batteries are capable of withstanding the Vibration and Pressure Differential Test, and at a temperature of 55°C, the electrolyte will not flow from a ruptured or cracked case. The batteries have been protected against short circuits and securely packaged. The batteries and outer packaging must be plainly marked "Non-Spillable" or "Non-Spillable Battery".

Sulfuric Acid is water reactive if concentrated. Batteries are regulated under applicable US DOT, RCRA, CERCLA and EPCRA. If you have any questions, please contact the Environmental Assurance Department of GNB Technologies at 770-673-2470.

The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category 1 carcinogen, a substance that is carcinogenic to humans. This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery. Inorganic acid mist (sulfuric acid mist) is not generated under normal use of this product. Misuse of the product, such as overcharging, may however result in the generation of sulfuric acid mist.

A battery is manufactured using lead, CAS No. 7439-92-1 and sulfuric acid, CAS No. 7664-93-9 which are subject to the reporting requirements of EPCRA Section 313 (40 CFR 372).