MATERIAL SAFETY DATA SHEET
LEAD ACID BATTERY

Revised 01/01/01

SECTION 1 - PRODUCT IDENTITY

Chemical/Trade Name: Lead Acid Battery

Chemical Family: Electric Storage Battery

*This MSDS applies to automotive, commercial, and industrial batteries supplied by GES America

*Manufacturer: GES America, L. L. C.
7001 N. Grapevine Highway, Suite 500
North Richland Hills, Texas 76180-8815
Telephone: 817-589-1225
Emergency phone:
CHEM TRAC 800-424-9300

SECTION 2 - PRODUCT COMPONENTS/HAZARDOUS INGREDIENTS

Component	CAS Number	% by Weight	OSHA	ACGIH	NIOSH
Inorganic Lead	7439-92-1	64-80	50	150	100
Antimony	7440-36-0	1.5	500	500	---
Arsenic	7440-37-2	0.2	10	200	---
Calcium	7440-70-2	0.2	---	---	---
Tin	7440-31-5	0.2	2000	2000	---
Sulfuric Acid	7664-93-9	11-23	1000	1000	1000
Polypropylene (Case)	9003-07-0	5-6	N/A	N/A	N/A
Polyethylene (Separator)	9002-88-4	1-2	N/A	N/A	N/A

SECTION 3 - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: 230 F

Specific Gravity (H_20 = 1): 1.240 to 1.280 @ 80F

Vapor Pressure (mm/Hg @ 20 C): 10

Melting Point: Not Applicable

Vapor Density (Air = 1): >1

Evaporation Rate (BUTYL ACETATE = 1) <1

Solubility in Water: 100%

Appearance and Odor: sulfuric acid has a sharp, pungent odor; battery product has no odor.

SECTION 4 - FIRE AND EXPLOSION HAZARDS

Flash Point: Not Applicable Flammable Limits (LEL and UEL): Not Applicable
Extinguishing Media: Carbon Dioxide (CO_2)
Special Fire Fighting Procedures: Wear acid resistant clothing. Contact of water with sulfuric acid (electrolyte) may generate heat. User positive-pressure, self-contained breathing apparatus (SCBA) Shut off power.
Unusual Fire and Explosion Hazards: Keep sparks, flames and other ignition sources away from batteries. Explosion may result from improper charging and ignition of flammable hydrogen gas.

SECTION 5 - REACTIVITY DATA

Stability: This product is stable Conditions to avoid: Overcharging; ignition sources
Incompatibility/Products of Decomposition: Sulfuric acid reacts violently with strong reducing agents, metals, strong oxidizers and water. Contact with metals may generate sulfur dioxide fumes and hydrogen gas. Contact with combustible and organic material may cause fire and explosion. Hazardous decomposition products are sulfuric acid mist, carbon monoxide, sulfur trioxide, sulfur dioxide and hydrogen.

SECTION 6 - HEALTH HAZARD DATA

NOTE: *Handling and maintenance of battery product may result in exposure to sulfuric acid (electrolyte). Exposure to lead components should not occur under normal conditions of use.*

Routes of Entry:

Sulfuric Acid: Harmful by all routes of entry
Inhalation of mist or vapors may cause severe respiratory irritation.
Ingestion may cause severe irritation of mouth, throat, stomach, and esophagus.
Eye Contact may cause severe irritation, burns, cornea damage or blindness.
Skin Contact may cause severe irritation, burns, and ulceration.

Inorganic Lead: Inhalation of dust fumes may cause irritation of upper respirator tract and lungs.
Ingestion may cause nausea, vomiting, diarrhea, and severe cramping.
Eye Contact may cause irritation.
Skin Contact is not absorbed through the skin.

Effects of Acute Overexposure:

Sulfuric Acid: Sever skin irritation, cornea damage, and upper respiratory tract irritation.
Inorganic Lead: Headache, fatigue, abdominal pain, and loss of appetite, muscular aches and weakness, irritability.

Effects of Chronic Overexposure:

Sulfuric Acid: Inflammation of nose, throat, bronchial tubes, erosion of tooth enamel.
Inorganic Lead: Anemia, neuropathy, kidney damage, and reproductive changes in male and female.

Carcinogenicity:

Sulfuric Acid: çStrong inorganic acid mist containing sulfuric acidé classified by IARC as a Category I carcinogen (carcinogenic to humans). Not applicable to liquid forms of sulfuric acid found in batteries. Overcharging may result in generation of sulfuric mist.

Inorganic Lead: Classified as a 2B carcinogen; likely in animals at extreme doses.

Medical Conditions Generally Aggravated by Exposure:

Sulfuric Acid: Overexposure to sulfuric acid mist may aggravate pulmonary conditions.
Contact with skin may aggravate eczema and other skin diseases.

Inorganic Lead: Overexposure may aggravate some forms of kidney, liver, and neuralgic diseases.

Emergency and First Aid Procedures Ö Sulfuric Acid:

1. Inhalation: Move to Ventilate Area. Obtain medical attention.
2. Eye Contact: Wash the eyes with copious quantities of running water for 15 minutes. Obtain medical attention.
3. Skin: Flush area with large amounts of running water. Remove contaminated clothing and obtain medical attention.
4. Ingestion: Wash out mouth running water. Give milk or water to drink. Do not induce Vomiting. Call physician.
5. Lead Exposure: May cause lassitude, constipation, anemia, nausea, vomiting, paralysis, and central nervous system depression. Greatest exposure comes from dust in the air and hands when cleaning battery posts and if any internal sold materials are exposed if the battery is opened or broken.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE

Handling and Storage Procedures: Store batteries on impervious surfaces in a cool, dry area with adequate ventilation and containment in the event of spills or leaks. Batteries should be protected from weather conditions. Keep away from fire, sparks, and heat. Handle batteries to avoid container damage or turnover.

Spill/Release Procedures: Carefully neutralize small spills or leaks of electrolyte with baking soda, soda ash, lime, etc. For larger releases, stop flow of material and absorb with dry sand or other non-combustible absorbent. Prevent the discharge of unneutralized electrolyte into sanitary or storm sewers.

Waste Disposal: Neutralized spill residue may be disposed of as non-hazardous waste only if confirmed by testing. Unneutralized spills may be hazardous waste due to corrositivity. Deliver spent lead-acid batteries to secondary lead smelter for recycling. Follow all federal, state, and local regulations.

Precautionary Labels: **POISEN - CAUSES SEVERE BURNS**
DANGER - CONTAINS SULFURIC ACID

SECTION 8 - CONTROL MEASURES

Respiratory protection: None required under normal conditions of use. If sulfuric acid mist concentration exceeds **PEL**, use **NIOSH** of **MSHA** approved respirators.

Ventilation: Batteries should be stored and handled in well-ventilated areas. Mechanical ventilation, when used, should be acid-resistant.

Protective Equipment and Apparel: Use chemical goggles or face shield, acid-resistant gloves and aprons.

Other Controls: Provide emergency eyewashes and safety showers with unlimited water supply in areas where sulfuric acid is handled in concentrations >1%.

SECTION 9 - SHIPPING INFORMATION (DOT)

U.S. DOT shipping description for wet (filled with electrolyte) batteries:

Proper Shipping Name:	Battery, wet, filled with acid
Hazard Class/Division:	8
ID Number	UN2794
Hazard Label:	Corrosive

SECTION 10 - REGULATION INFORMATION

RCRA: Spent lead acid batteries are not regulated as hazardous waste when recycled/reclaimed. Spent unneutralized sulfuric acid is a regulated waste due to corrosivity characteristic (D002).

CERCLA (Superfund and EPCRA):

CERCLA and EPCRA reportable quantity {RQ} for spilled 100% sulfuric acid is 1000 pounds. Sulfuric acid is listed under the Emergency Planning and Community Right to Know Act {**EPCRA**} as an çextremely hazardous substance,é with a threshold planning quantity {**TPQ**} of 1000 pounds.

Supplier Notification: Lead-acid batteries contain toxic chemicals, which may be reportable under ECPRA Section 313 Toxic Chemical Release Inventory {Form R} requirements. The following information is provided for manufacturing facilities under SIC codes 20 through 39:

Regulated Toxic Chemical	CAS Number	Approximate % (by weight)
Inorganic Lead	7439-92-1	64-80
Antimony	7440-36-0	1.50
Arsenic	7440-38-2	0.02
Sulfuric Acid	7664-93-9	11-23

TSCA {Toxic Substances Control Act}: The following constituents of GES America, L. L. C. batteries listed in the TSCA Registry: Lead; Antimony; Arsenic; Calcium; Tin; Sulfuric Acid

NFPA Hazard Rating (sulfuric acid):

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