



Material Safety Data Sheet

24-HOUR EMERGENCY CONTACT
(336) 650-7245/7257
CHEMTREC (800) 424-9300

HMIS Hazard Rating

HEALTH	3
FLAMMABILITY	1
REACTIVITY	2

0 Minimal Hazard
1 Slight Hazard
2 Moderate Hazard
3 Serious Hazard
4 Severe Hazard

PREPARED BY: A.L. Csontos, Director-Environmental Engineering
MANUFACTURER: Douglas Battery Manufacturing Company
Product Information (800) 368-4527

Date Prepared: 6/07
500 Battery Drive, Winston-Salem, NC 27107
Internet Address: www.douglasbattery.com

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SECTION 1 – IDENTITY

Common Name: LEAD/ACID STORAGE BATTERY
Chemical Name: Lead/Acid Storage Battery **Chemical Family:** Electric Storage Battery
DOT Shipping Name: UN 2794, Battery, Wet, Filled With Acid, 8, PG III

SECTION 2 – HAZARDOUS INGREDIENTS

Principal Hazardous Component(s) (chemical & common name(s))	C.A.S.	Hazard Category	%	ACGIH TLV	OSHA PEL/TWA
Lead/Lead Oxide/Lead Sulfate	7439-92-1	Acute-Chronic	60 - 70%	0.15 mg/m ³	0.05 mg/m ³
Antimony	7440-36-0	Chronic	0.5 - 2.5%	0.5 mg/m ³	0.5 mg/m ³
Arsenic	7440-38-2	Acute-Chronic	< 0.1%	0.2 mg/m ³	0.01 mg/m ³
Sulfuric Acid (Battery Electrolyte)	7664-93-9	Reactive-Oxidizer Acute-Chronic	10 - 38%	1.0 mg/m ³	100 mg/m ³
Calcium	7440-70-2	Reactive	< 0.15%	Not Applicable	Not Applicable

This Product description or Tradename contains toxic chemicals subject to reporting requirements under Section 313 of Title III the "Superfund Amendments and Reauthorization Act" of 1986 and 40 CFR 372 and California Proposition 65.

PROPOSITION 65 WARNING: Battery Posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

SECTION 3 – PHYSICAL & CHEMICAL CHARACTERISTICS (Fire & Explosion Data)

Boiling Point Electrolyte Approx. 275° F **Vapor Pressure** Electrolyte 1 mm Hg @ 145.8°F **Specific Gravity** Electrolyte (H₂O = 1) 1.080-1.400 **pH Electrolyte** <1

Percent Volatile by Volume (%) Not Applicable **Vapor Density** Hydrogen (Air = 1):0.069
Electrolyte (Air = 1):3.4 **Evaporation Rate** Not Applicable

Appearance and Odor *Battery:* Polypropylene or hard rubber case, solid.
Lead: gray, metallic, solid.
Electrolyte: Liquid, colorless, oily fluid; acid odor when hot or charging battery.

Flash Point Not Applicable **Flammable Limits in Air% by Volume** Hydrogen (H₂) Lower 4.1% Upper 74.2% **Extinguisher Media** Halon, dry chemical
Polypropylene Auto-Ignition Temperature 675°F

Special Fire Fighting Procedures Lead/Acid batteries do not burn, or burn with difficulty. Extinguish fire with agent suitable for surrounding combustible materials. Cool exterior of battery if exposed to fire to prevent rupture. The acid mist and vapors generated by heat or fire are corrosive. Wear respiratory protection (SCBA) and protective clothing.

Unusual Fire and Explosion Hazards Hydrogen gas and sulfuric acid vapors are generated upon overcharging. Hydrogen gas may be flammable or explosive when mixed with air, oxygen, or chlorine. Ensure adequate ventilation of charging areas consistent with OSHA (29 CFR 1910 & 1926), National Fire Code, ACGIH and other relevant standards.

SECTION 4 – PHYSICAL HAZARDS

Stability	Stable	Conditions to Avoid	Avoid overcharging. Do not allow smoking, sparks, or open flame near batteries while charging.
Incompatibility (Materials to Avoid)			Keep battery case away from strong oxidizers.
Hazardous Decomposition Products			An explosive hydrogen/oxygen mixture within the battery may occur during charging.
Hazardous Polymerization		Will Not Occur	Do not overcharge.

SECTION 5 – HEALTH HAZARDS

Threshold Limit Value (TLV)	Permissible exposure limit (PEL)	Sulfuric Acid	TLV 1.0 mg/m ³ (milligram per cu. meter)
		Lead	TLV 0.15 mg/m ³ PEL 0.05 mg/m ³

Signs and Symptoms of Exposure

1. Acute Exposure
Signs of exposure include prickling or burning sensation to skin, eyes or mucus membranes. Battery electrolyte can cause irritation of eyes, nose and throat. Short term liquid or vapor contact may result in irritation and acid burns to the exposed area. Ingestion of electrolyte may cause severe injury.
2. Chronic Overexposure
Repeated contact with battery electrolyte (sulfuric acid) may cause drying of the skin which may result in irritation and dermatitis. Prolonged inhalation of a mist of sulfuric acid can cause inflammation of the upper respiratory tract. Ingestion of lead can result in symptoms of lead toxicity including anemia, fatigue, loss of appetite, cramping, and affects to neurological system.

Medical Conditions Generally Aggravated by Exposure Exposures to acid mist may irritate pre-existing respiratory diseases. Acid exposure may aggravate skin diseases. Chronic exposure to lead and its compounds may aggravate some forms of kidney, liver and neurological diseases.

Routes of Entry Electrolyte: ingestion, inhalation Lead: Ingestion; lead and compounds not absorbed through skin

Chemical Listed as carcinogen or Potential Carcinogen

No Info. Found	National Toxicology Program	Yes	<input type="checkbox"/>	I.A.R.C. Monographs	Yes	<input checked="" type="checkbox"/>	OSHA	Yes	<input type="checkbox"/>	EPA CAG	Yes	<input checked="" type="checkbox"/>
		No	<input checked="" type="checkbox"/>		No	<input type="checkbox"/>		No	<input checked="" type="checkbox"/>		No	<input type="checkbox"/>

Human Health Effects 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 the 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.

Emergency and First Aid Procedures

Sulfuric Acid (Battery Electrolyte)

1. Inhalation Move to Ventilated Area. Obtain medical attention.
2. Eyes 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 with running water. Do not induce vomiting. Call Physician.

SECTION 6 – SPECIAL PROTECTION INFORMATION

Respiratory Protection

(Special Type)

Sulfuric Acid Mist – Full face or half mask respirator with acid mist filter or SCBA.

Ventilation Change air every 15 min. **Local Exhaust** No **Mechanical (General)** No Information Found

Protective Gloves Acid resistant rubber or plastic **Eye Protection:** Splash resistant goggles or safety glasses with face shield

Other Protective Clothing or Equipment Acid resistant rubber or plastic apron, boots and protective clothing.

SECTION 7 – SPECIAL PRECAUTIONS AND SPILL / LEAK PROCEDURES

Precautions to Be Taken Store batteries in a cool, dry, well-ventilated area. Do not short circuit battery terminals or remove vent caps during storage or charging. Avoid rough handling which could result in spills or leaks. Do not smoke or use open flames in charging areas. Wash thoroughly after handling product.

Other Precautions Avoid prolonged overcharging or combustion which could liberate hazardous gases and liquids including hydrogen, sulfuric acid, sulfuric acid mist, sulfur dioxide, sulfur trioxide, arsine, or stibine gas. Materials should be kept on site for spill neutralization and containment.

Steps to Be Taken in Case Material Is Released or Spilled Wear protective clothing. Ventilate enclosed areas. Dike to contain contaminated materials and liquids. Limit site access to qualified emergency responders. Neutralize acid spills with sodium bicarbonate (soda ash), calcium carbonate, agricultural lime or equivalent commercial product. Collect all material for proper disposal.

Waste Disposal Methods Return whole scrap batteries to distributor, manufacturer, or lead smelter for recycling. For neutralized spills, place residue into plastic containers with sorbent material, sand, or earth for disposal. Contact local and/or state environmental officials for proper disposal requirements.