



# MATERIAL SAFETY DATA SHEET



## I. Product Identification

Chemical/Trade Name (Identity used on label): Electrolyte	Chemical Family/Classification: Sulfuric Acid Solution
Company Name: Exide Technologies	Address: 829 Parkview Boulevard Lombard, Illinois 60148-3249 800-872-0471
Division or Department: GNB Industrial Power	Telephone Number:
Contact: Questions concerning MSDS	Mr. Richard Thompson (972) 335-2121 x40
Transportation Emergencies: CHEMTREC Within the United States - Toll-free: Outside the United States - Call collect:	24 hours: (800) 424-9300 (703) 527-3887

## II. Ingredients Hazardous

MATERIAL	% by Weight or Volume	CAS NUMBER	Exposure OSHA	Limits ACGIH
Electrolyte (Sulfuric Acid Solution)	20-40	7664-93-9	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>
Non-Hazardous Ingredients	60-80			

## III. Physical Data

Materials (at normal temperatures): Electrolyte	Appearance and Odor: Electrolyte is a clear liquid with a sharp, penetrating, pungent odor.
Boiling Point (at 760 MM Hg): 219 °F to 237 °F	Melting Point: 7.7 °F to -40.0 °F
Specific Gravity (H <sub>2</sub> O=1): 1.140-1.300	Vapor Pressure (mm Hg and Temperature): 20.8 to 48.6 @ 77° F
Vapor Density (AIR=1): 3.4	Solubility in Water: Infinite
Water Reactive: Exothermic - Always add acid to water.	Evaporation Rate (Butyl Acetate=1): Less than 1

## IV. Health Hazard Information

Routes of Entry: Electrolyte (sulfuric acid) is harmful by all routes of entry.
Inhalation: Electrolyte (sulfuric acid) vapors or mist may cause severe respiratory irritation. If electrolyte is inhaled, remove person to fresh air. If breathing has stopped, perform artificial respiration. Get medical attention.
Skin Contact: Electrolyte may cause severe irritation, burns and ulceration. If electrolyte contacts the skin, promptly wash the skin with soap and water. Get medical attention promptly.

**Eye Contact:**

Electrolyte (sulfuric acid) vapors or mist can cause severe irritation, burns, cornea damage and possible blindness. If electrolyte contacts the eye, immediately wash the eye with large amounts of water and continue flushing for 15 minutes. Get medical attention promptly.

**Ingestion:**

Electrolyte (sulfuric acid) may cause severe irritation of mouth, throat, esophagus and stomach. If electrolyte has been swallowed, get medical attention immediately. Give large quantities of water until medical help arrives.

**SIGNS AND SYMPTOMS OF OVEREXPOSURE**

**Signs and Symptoms of Exposure:**

Stinging and burning sensation to skin and eyes.

**Medical Conditions Generally Aggravated by Exposure:**

Exposure to acid mist can aggravate pulmonary conditions.

**Acute Effects:**

Electrolyte (sulfuric acid) may cause severe nose, eye, throat and skin irritation, burns, damage to cornea and possible blindness and upper respiratory irritation.

**Chronic Effects:**

Repeated exposure to electrolyte (sulfuric acid) mist or liquid causes respiratory dermatitis, conjunctivitis and lacrimation.

**EMERGENCY AND FIRST AID PROCEDURES**

**Inhalation:**

Sulfuric Acid - Remove to fresh air immediately. If breathing is difficult, give oxygen.

**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.

**Eyes:**

Sulfuric Acid - flush immediately with cool water for at least 15 minutes, then consult physician.

**Ingestion:**

Sulfuric Acid - give large quantities of water; **DO NOT** induce vomiting, then consult physician.

**V. Fire and Explosion Data**

**Flash Point and Method Used:**

Not applicable.

**Flammable Limits in Air % by Volume:**

N/A

**Extinguishing Media:**

N/A

**Special Fire Fighting Procedures:**

Move electrolyte containers from fire area if possible. Sulfuric Acid is water reactive if concentrated. Cool these containers exposed to flames from side until well after fire is out. Use positive pressure, self-contained breathing apparatus. Water applied to electrolyte generates heat and causes it to splatter. Wear acid resistant clothing.

**VI. Reactivity Data**

**Stability:**

= Unstable       = Stable

Conditions to avoid: Violent exothermic reaction with water and organic materials. May ignite finely divided combustible materials on contact. Runoff to sewer may create fire or explosion hazard.

**Incompatibility (Material to Avoid):**

Iron, powdered metals, zinc and steel react with sulfuric acid and release flammable hydrogen gas.

**Hazardous Decomposition Products:**

Sulfuric Acid: Hydrogen, sulfur dioxide, sulfur trioxide, hydrogen sulfide, and sulfuric acid mist.

**Hazardous Polymerization:**

= May Occur       = Will Not Occur

**VII: Control and Protective Measures**

**Respiratory Protection:** Self-contained breathing apparatus if fumes or mist are present.

**Protective Gloves:** Rubber

**Eye Protection:** Goggles or face shield.

**Ventilation to be Used:** Local exhaust to outside air. Mechanical (general) to outside air.

**PERSONAL PROTECTIVE EQUIPMENT**

**Respiratory Protection:**

If concentrations of sulfuric acid mist are known to exceed PEL, use NIOSH or MSHA approved, self-contained breathing apparatus.

**Eyes and Face:**

Chemical splash goggles or face shield.

**Hands, Arms, Body:**

Rubber or plastic acid resistant gloves with elbow length gauntlet, polyester clothing.

**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. Wash protective equipment with water after use.

**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. Wear acid resistant boots, faceshield, chemical splash goggles and acid resistant gloves. Avoid electrolyte contact with eyes, skin or clothing. Avoid breathing electrolyte vapor. No smoking regulations if possibility of hydrogen evolution.

**DO NOT RELEASE UNNEUTRALIZED ACID.**

**Other Precautions and/or Special Hazards:** Store electrolyte only in approved containers.

**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.**

**IX. Other**

**REGULATORY INFORMATION:**

NFPA Hazard rating for Sulfuric Acid:

Flammability (Red) = 0

Health (Blue) = 3

Reactivity (Yellow) = 2

Canadian WHMIS Classification:

This material has a WHMIS classification of E - Corrosive.

US DOT identification and description for acid is as follows:

Battery fluid, acid, Class 8, UN 2796, PG II

Label: Corrosive

For air shipment, reference International Air Transportation Association (IATA) Dangerous Goods Regulations Manual, refer to Packing Instruction 813. For ocean shipment, reference International Maritime Dangerous Goods Code, P. 8230.

The National Toxicology Program (NTP) and the International Agency for Research on Cancer (IARC) have classified "strong inorganic acid mist containing sulfuric acid" as 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 a battery. Misuse of a battery, such as overcharging, may however result in the generation of sulfuric acid mist.

This product contains sulfuric acid (CAS #7664-93-9), an extremely hazardous substance (40 CFR 355.30), that may be subject to the reporting requirements of Sections 302/304, 311/312 and Section 313 (only acid aerosols including mists, vapors, gas, fog, and other airborne forms) of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and 40 CFR Parts 355, 370 and 372 (Community Right-to-Know).

PREPARED BY: ENVIRONMENTAL, SAFETY AND HEALTH DEPARTMENT  
GNB INDUSTRIAL POWER  
829 PARKVIEW BOULEVARD  
LOMBARD, IL 60148-3249

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