# MATERIAL SAFETY DATA SHEET

## I. PRODUCT IDENTIFICATION

MANUFACTURER
GNB Industrial Power
A Division of Exide Technologies
3950 Sussex Avenue
Aurora, IL 60504-7932

CHEMICAL/TRADE NAME (as used on label): Electrolyte

FOR INFORMATION
Primary: MACTEC Engineering and Consulting, Inc.
Attention: DeLyn Thompson (770) 421-3364
Secondary: Environmental, Safety & Health
Attention: Fred Ganster (610) 921-4052

CHEMICAL FAMILY/ CLASSIFICATION: Sulfuric Acid Solution

DATE ISSUED: May 4, 2005

FOR EMERGENCY
CHEMTREC (800) 424-9300
24-hour Emergency Response Contact
Ask for Environmental Coordinator

CHEMTREC INTERNATIONAL (703) 527-3887 – Collect

## II. HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

| | | | Approximate Air Exposure Limits (µg/m$^3$) | | |
|---|---|---|---|---|---|
| Components | CAS Number | % by Wt. | OSHA | ACGIH | NIOSH |
| Electrolyte (sulfuric acid) | 7664-93-9 | 20-40 | 1000 | 200 | 1000 |
| Non-Hazardous Ingredients | N/A | 60-80 | N/A | N/A | N/A |

NOTE: Sulfuric acid is water-reactive if concentrated

## III. PHYSICAL DATA

| | | | |
|---|---|---|---|
| Boiling Point (Electrolyte) | 219° F to 237° F (at 760 mm Hg) | Specific Gravity ($H_20$=1) | 1.140 to 1.300 |
| Melting Point | 7.7° F to 40°F | Vapor Pressure (mm Hg at 20 °C) | 20.8 to 48.6 @ 77° F |
| Solubility in Water | Infinite | | |
| Evaporation Rate (Butyl acetate=1) | Less Than 1 | Vapor Density (AIR=1) | 3.4 |
| Appearance and Odor | A clear liquid with a sharp, penetrating, pungent odor. | Water Reactive | Exothermic – Always add acid to water |

## IV. FIRE AND EXPLOSION HAZARD DATA

**Flash Point:** Not Applicable

**Flammable Limits:** Not Applicable

**Extinguishing media**: Not Applicable

**Special Fire Fighting Procedures**:

Move electrolyte containers from fire area if possible. Cool containers exposed to flames from side until well after fire is out. Use positive pressure, self-contained breathing apparatus. Beware of acid splatter during water application and wear acid-resistant clothing, gloves, face and eye protection.

**Unusual Fire and Explosion Hazards**:

Reacts violently with metals, nitrates, chlorates, carbides, and other organic material. Reacts with most metals to yield explosive/flammable hydrogen gas.

## V. REACTIVITY DATA

**Stability:** Stable X Unstable ___

**Conditions to Avoid:** Contact with organic materials, combustibles, strong reducing agents, metals, strong oxidizers, and water. May ignite finely divided combustible materials on contact. Runoff to sewer may create fire or explosion hazard.

**Incompatibility:** (materials to avoid)

Electrolyte: Iron, powdered metals zinc, and steel react with sulfuric acid and release flammable hydrogen gas. Contact with metals may produce toxic sulfur dioxide fumes and sulfur dioxide.

**Hazardous Decomposition Products:**

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

Hazardous polymerization: May Occur _____ Will Not Occur X

## VI. HEALTH HAZARD DATA

**Routes of Entry:**

Electrolyte: Harmful by all routes of entry.

**Inhalation:**

Electrolyte: Breathing of sulfuric acid vapors or mists may cause severe respiratory irritation. If electrolyte is inhaled, remove person to fresh air. If breathing has stopped, perform artificial respiration. Get medical attention.

**Ingestion:**

Electrolyte: 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 attention arrives.

**Skin Contact/Skin Absorption:**

Electrolyte: 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, 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.

**Effects of Overexposure - Acute:**

Electrolyte: Severe nose, eye, throat and skin irritation, burns, damage to cornea may cause blindness, upper respiratory irritation.

**Effects of Overexposure - Chronic:**

Electrolyte: Possible erosion of tooth enamel; inflammation of nose, throat, and bronchial tubes, and scarring of the cornea. Repeated exposure to sulfuric acid mist or liquid causes respiratory dermatitis, conjunctivitis, and lacrimation.

**Signs and Symptoms of Exposure:**

Stinging and burning sensation to skin and eyes.

**Carcinogenicity:**

Electrolyte: 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 sulfuric acid solutions in static liquid state or to electrolyte in batteries. Batteries subjected to abusive charging at excessively high currents for prolonged periods of time without vent caps in place may create a surrounding atmosphere of the offensive strong inorganic acid mist containing sulfuric acid. Inorganic mist (sulfuric acid mist) is not generated during normal use of this product.

**Medical Conditions Generally Aggravated by Exposure:**

Overexposure to sulfuric acid mist may cause lung damage and aggravate pulmonary conditions. Contact of electrolyte (water and sulfuric acid solution) with skin may aggravate skin diseases such as eczema and contact dermatitis. Contact of electrolyte (water and sulfuric acid solution) with eyes may damage cornea and/or cause blindness.

## VI. HEALTH HAZARD DATA (CONTINUED)

**Emergency and First Aid Procedures:**

**Inhalation:**

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

**Ingestion:**

Electrolyte: Give large quantities of water; **do not** induce vomiting; consult physician.

**Skin:**

Electrolyte: Flush with large amounts of water for at least 15 minutes; remove contaminated clothing completely, including shoes, and do not wear again until cleaned. If acid is splashed on shoes, remove and discard if they contain leather.

**Eyes:** Electrolyte: Flush immediately with large amounts of water for at least 15 minutes; consult physician immediately.

## VII. PRECAUTIONS FOR SAFE HANDLING AND USE

**Handling and Storage:**

Storage/handling areas should be equipped with eyewashes/safety showers. Handle cautiously; avoid contact with skin and eyes. Handling/storage areas should be equipped with proper containment to capture and neutralize spills. STORE ELECTROLYTE ONLY IN APPROVED CONTAINERS.

**Spill or Leak Procedures:**

Stop flow of material. Neutralize with soda ash, lime, or sodium bicarbonate. Dilute cautiously with water. Wear acid-resistant protective clothing and equipment. Remove combustible materials and all sources of ignition. Stop flow of material and contain spill by diking with soda ash, etc. 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, face shield, 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

**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 listed contact. Large, water-diluted spills, after neutralization and testing, should be managed in accordance with local, state, and federal requirements. Consult state environmental agency and/or federal EPA. DO NOT FLUSH LEAD CONTAMINATED ACID TO SEWER.

**Precautionary Labeling:**

POISON - CAUSES SEVERE BURNS

DANGER - EXPLOSIVE GASES

CORROSIVE - CONTAINS SULFURIC ACID

KEEP AWAY FROM CHILDREN

## VIII. CONTROL MEASURES

**Hygiene Practices:**

Handle cautiously; avoid contact with skin and eyes. Wash hands thoroughly before eating, drinking or smoking after handling batteries. Wash protective equipment with water after use.

**Respiratory Protection:**

None required under normal conditions. Self-contained breathing apparatus if fumes or mist are present. If an overcharging or overheating condition exists and concentrations of sulfuric acid mist are known or suspected to exceed PEL, use NIOSH or MSHA-approved respiratory protection.
protection.

## VIII. CONTROL MEASURES (CONTINUED)

**Protective Clothing:**

Rubber or plastic acid resistant gloves with elbow-length gauntlet, apron, boots, and polyester clothing. Under severe exposure or emergency conditions, wear acid resistant clothing and boots.

**Eye Protection:**

Chemical splash goggles, safety glasses/ face shield.

**Local Exhaust:**

150 ppm

**Special:**

Acid-resistant ventilation components. Local exhaust to outside air. Mechanical (general) to outside air.

**Emergency Flushing:**

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

## IX. OTHER REGULATORY INFORMATION

**NFPA Hazard Rating for sulfuric acid:**

Flammability (Red) = 0 Health (Blue) = 3 Reactivity (Yellow) = 2
Sulfuric acid is water-reactive if concentrated.

**WHMIS Classification for sulfuric acid:**

This material has a WHMIS classification of E-Corrosive

**TRANSPORTATION:**

US DOT identification and description for this battery is:
Battery fluid, acid, 8, UN 2796, PG II
Label: Corrosive
For air shipments, see International Air Transportation Association (IATA) Dangerous Goods Regulations Manual, Packing Instruction 813. For ocean shipments, reference International Maritime Dangerous Goods Code, P. 8230.

**RCRA:** 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. An average automotive/commercial battery contains approximately 5 lbs of sulfuric acid. Contact your Exide representative for additional information.

(d) EPCRA Section 312 Tier Two reporting is required for non-automotive 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 a toxic chemical or chemicals subject to the reporting requirements of section 313 of (Title) III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

| Chemical | CAS | Percent by Weight |
|---|---|---|
| Electrolyte: Sulfuric Acid ($H_2SO_4$) | 7664-93-9 | 20-40 |

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 that are "consumer products".

**CAA:** Exide Technologies 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 1990, finalized on January 19, 1993, Exide established a policy to eliminate the use of Class I ODC's prior to the May 15, 1993 deadline.

## IX. OTHER REGULATORY INFORMATION (CONTINUED)

**TSCA:** Each ingredient chemical listed in Section II of this MSDS is also listed in the TSCA Registry.

**CANADIAN REGULATIONS:** All chemical substances in this product are listed on the CEPA DSL/NDSL or are exempt from list requirements.

**CALIFORNIA PROPOSITION 65:**

"WARNING: This product contains lead, a chemical known to the State of California to cause cancer, or birth defects or other reproductive harm."

PREPARED BY:

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