

I. PRODUCT IDENTIFICATION			
Chemical Trade Name (as used on label): Battery Electrolyte		Chemical Family/Classification: Acid / Corrosive	
Synonyms: None.		Telephone: For information and emergencies, contact EnerSys' Environmental, Health & Safety Dept. at 610-208-1996	
Manufacturer's Name/Address: EnerSys P.O. Box 14145 2366 Bernville Road Reading, PA 19612-4145		Canada Corporate Office 3-61 Parr Boulevard Bolton, Ontario L7E 4E3	
24-Hour Emergency Response Contact: CHEMTREC DOMESTIC: 800-424-9300 CHEMTREC INTERNATIONAL: 703-527-3877			
II. GHS HAZARDS IDENTIFICATION			
HEALTH		ENVIRONMENTAL	
Carcinogen Skin Corrosion/Irritation	Category 1A Category 1A		
GHS LABEL:			
HEALTH		ENVIRONMENTAL	
			
Hazard Statements DANGER! May cause cancer from inhalation of mists. Causes severe skin burns and eye damage. Precautionary Statements Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breath dusts or mists. Wash thoroughly after handling. Wear protective gloves/protective clothing, eye protection and face protection. If exposed or concerned: Get medical advice/attention. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing		Precautionary Statements (cont.) Rinse skin with water/shower. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center or doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	
III. COMPOSITION / INFORMATION ON INGREDIENTS			
Components	CAS Number	Approximate % by Wt.	
Inorganic Lead Compound: Sulfuric Acid Water (H ₂ O)	7664-93-9	30 - 40 60 - 70	
IV. FIRST-AID MEASURES			
Inhalation: Remove to fresh air immediately. If breathing is difficult, give oxygen. Consult a physician.			
Ingestion: Give large quantities of water; do not induce vomiting or aspiration into the lungs may occur and can cause permanent injury or death; consult a physician.			
Skin: Flush with large amounts of water for at least 15 minutes; remove contaminated clothing completely, including shoes. If symptoms persist, seek medical attention. Wash contaminated clothing before reuse. Discard contaminated shoes.			
Eyes: Flush immediately with large amounts of water for a least 15 minutes; consult physician.			
V. FIRE-FIGHTING MEASURES			
Flash Point: N/A		Flammable Limits: LEL = N/A UEL = N/A	
Extinguishing Media: CO ₂ ; foam; dry chemical; water; water fog.			
Special Fire Fighting Procedures: Water applied to sulfuric acid generates heat and causes acid to splatter. Wear full-cover sulfuric acid resistant clothing.			
Unusual Fire and Explosion Hazards: Reacts violently with metals, nitrates, chlorates, carbides and other organic materials. Reacts with most metals to yield explosive and flammable hydrogen gas.			
VI. ACCIDENTAL RELEASE MEASURES			
Spill or Leak Procedures: Stop flow of material, contain/absorb small spills with dry sand, earth or 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.			
VII. HANDLING AND STORAGE			
Handling: Handle cautiously; avoid contact with skin and eyes. Storage and handling areas should be equipped with proper containment to capture and neutralize spills. In addition, these areas should be equipped with eyewash stations and safety showers.			
Storage:			

Store in cool, dry, well-ventilated areas with impervious surfaces and adequate containment in the event of spills. Separate from incompatible materials.

Store and handle only in areas with adequate water supply and spill control. Avoid damage to containers. Keep away from metallic objects.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits (mg/m³) Note: N.E.= Not Established

INGREDIENTS	OSHA PEL	ACGIH	US NIOSH	Quebec PEV	Ontario OEL	EU OEL
Electrolyte (Sulfuric Acid)	1	0.2	1	1	0.2	0.05 (a)

NOTES:

(a) Thoracic fraction

Engineering Controls (Ventilation):

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

Respiratory Protection (NIOSH/MSHA approved):

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

Skin Protection:

Use rubber or plastic acid-resistant gloves with elbow-length gauntlet, acid-resistant apron, clothing and boots.

Eye Protection:

Use chemical goggles or face shield.

Other Protection:

In areas where sulfuric acid is handled in concentrations greater than 1%, emergency eyewash stations and showers should be provided, with unlimited water supply. Acid-resistant apron. Under severe exposure emergency conditions, wear acid-resistant clothing and boots. Face shield recommended when adding water or electrolyte to batteries, wash hands after handling.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Properties Listed Below are for Electrolyte:

Boiling Point:	203 - 240° F	Specific Gravity (H₂O = 1):	1.215 to 1.350
Melting Point:	N/A	Vapor Pressure (mm Hg):	10
Solubility in Water:	100%	Vapor Density (AIR = 1):	Greater than 1
Evaporation Rate: (Butyl Acetate = 1)	Less than 1	% Volatile by Weight:	N/A
pH:	~1 to 2	Flash Point:	N/A
LEL (Lower Explosive Limit)	N/A	UEL (Upper Explosive Limit)	N/A
Appearance and Odor:	Electrolyte is a clear liquid with a sharp, penetrating, pungent odor.		

X. STABILITY AND REACTIVITY

Stability: Stable X Unstable

This product is stable under normal conditions at ambient temperature.

Conditions To Avoid: Contact with organic materials, combustibles, strong reducing agents, metals, strong oxidizers, water.

Incompatibility: (Materials to avoid)

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.

Hazardous Decomposition Products:

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

Hazardous Polymerization:

Will not occur.

XI. TOXICOLOGICAL INFORMATION

Routes of Entry:

Harmful by all routes of entry.

Inhalation:

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

Ingestion:

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

Skin Contact:

Severe irritation, burns and ulceration.

Eye Contact:

Severe irritation, burns, cornea damage, and blindness.

Effects of Overexposure - Acute:

Severe skin irritation, damage to cornea, upper respiratory irritation.

Effects of Overexposure - Chronic:

Possible erosion of tooth enamel, inflammation of nose, throat and bronchial tubes.

Carcinogenicity:

The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Group 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.

Prop 65: Warning: Sulfuric Acid Mist is known to the State of California to cause cancer.

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 diseases such as eczema and contact dermatitis. Lead and its compounds can aggravate some forms of kidney, liver and neurologic diseases.

Acute Toxicity:

Inhalation LD50:

LC50 rat: 375 mg/m³; LC50: guinea pig: 510 mg/m³

Oral LD50:

rat: 2140 mg/kg

Additional Health Data:

Most inhalation problems can be avoided by adequate precautions such as ventilation and respiratory protection covered in Section 8. Follow good personal hygiene to avoid inhalation and ingestion: wash hands, face, neck and arms thoroughly before eating, smoking or leaving the worksite. Keep contaminated clothing out of non-contaminated areas, or wear cover clothing when in such areas. Restrict the use and presence of food, tobacco and cosmetics to non-contaminated areas. Work clothes and work equipment used in contaminated areas must remain in designated areas and never taken home or laundered with personal non-contaminated clothing. This product is intended for industrial use only and should be isolated from children and their environment.

XII. ECOLOGICAL INFORMATION

Environmental Fate:

Sulfuric acid can lower water and soil pH causing acidic conditions; reacts with calcium and magnesium to form sulfate salts.

Environmental Toxicity: Aquatic Toxicity:

Sulfuric acid: 24-hr LC50, freshwater fish (Brachydanio rerio): 82 mg/L
96 hr- LOEC, freshwater fish (Cyprinus carpio): 22 mg/L

Additional Information:

- No known effects on stratospheric ozone depletion.
- Volatile organic compounds: 0% (by Volume)
- Water Endangering Class (WGK): NA

XIII. DISPOSAL CONSIDERATIONS (UNITED STATES)

Place neutralized slurry into sealed containers and handle as applicable with state and federal regulations. 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.

Following local, State/Provincial, and Federal/National regulations applicable to end-of-life characteristics will be the responsibility of the end-user.

XIV. TRANSPORT INFORMATION**U.S. DOT:**

The shipping information is as follows:

Proper Shipping Name: Battery Fluid, Acid
Hazardous Class: 8
UN Identification: UN2796

Packing Group: II
Label/Placard Required: Corrosive

Contact your EnerSys representative for additional information regarding the classification of batteries.

Reference 49 CFR packing instructions: 173.154 or 173.202 or 173.242

IATA Dangerous Goods Regulations DGR:

The shipping information is as follows:

Proper Shipping Name: Battery Fluid, Acid
Hazardous Class: 8
UN Identification: UN2796

Packing Group: II
Label/Placard Required: Corrosive

Reference IATA packing instructions Y840 or 851 or 855

IMDG:

The shipping information is as follows:

Proper Shipping Name: Battery Fluid, Acid
Hazardous Class: 8
UN Identification: UN2796

Packing Group: II
Label/Placard Required: Corrosive

Reference IMDG Packing instructions P001

XV. REGULATORY INFORMATION**UNITED STATES:****EPA SARA Title III:****Section 302 EPCRA Extremely Hazardous Substances (EHS):**

Sulfuric acid is a listed "Extremely Hazardous Substance" under EPCRA, with a Threshold Planning Quantity (TPQ) of 1,000 lbs. EPCRA Section 302 notification is required if 1000 lbs or more of sulfuric acid is present at one site (40 CFR 370.10). For more information consult 40 CFR Part 355. The quantity of sulfuric acid will vary by battery type. Contact your EnerSys representative for additional information.

Section 304 CERCLA Hazardous Substances:

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.

Section 311/312 Hazard Categorization:

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. For more information consult 40 CFR 370.10 and 40 CFR 370.40.

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 Wt.</u>
Sulfuric Acid	7664-93-9	30 - 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.

TSCA:

TSCA Section 8b – Inventory Status: All chemicals comprising this product are either exempt or listed on the TSCA Inventory.

TSCA Section 12b (40 CFR Part 707.60(b)) No notice of export is required for this product.

TSCA Section 13 (40 CFR Part 707.20): If you import this product, the following statement must be included on the invoice or entry documentation: All chemical substances in this shipment comply with all applicable rules or orders under TSCA. This chemical substance is not offered for entry in violation of TSCA or any applicable rule or order under TSCA.

RCRA:

Spilled sulfuric acid is characterized as a hazardous waste; EPA hazardous waste number D002 (corrosivity).

CAA:

EnerSys 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, EnerSys established a policy to eliminate the use of Class I ODC's prior to the May 15, 1993 deadline.

STATE REGULATIONS (US):**Proposition 65:**

Warning: Sulfuric Acid Mist is known to the State of California to cause cancer.

INTERNATIONAL REGULATIONS:

Distribution into Quebec to follow Canadian Controlled Product Regulations (CPR) 24(1) and 24(2).

Distribution into the EU to follow applicable Directives to the Use, Import/Export of the product as-sold.

XVI. OTHER INFORMATION

Revised: 4/7/2020

NFPA Hazard Rating for Sulfuric Acid:

Flammability (Red) = 0

Reactivity (Yellow) = 2

Health (Blue) = 3

Sulfuric acid is water-reactive if concentrated

DISCLAIMER

This Safety Data Sheet is created by the manufacturer to comply with the requirements of 29 CFR 1910.1200. To the extent allowed by law, the manufacturer hereby expressly disclaims any liability to any third party, including users of this product, including, but not limited to, consequential or other damages, arising out of the use of, or reliance on, this Safety Data Sheet.