

# MATERIAL SAFETY DATA SHEET

## *BATTERY FLUID ACID*

(US, CN, EU Version for International Trade)

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Battery Fluid Acid  
**OTHER PRODUCT NAMES:** Battery Electrolyte, UN2796

**MANUFACTURER:** East Penn Manufacturing Company, Inc.  
**DIVISION:** Dekal Road  
**ADDRESS:** Lyon Station, PA 19536 USA

**EMERGENCY TELEPHONE NUMBERS:** US: CHEMTREC 1-800-424-9300  
CN: CHEMTREC 1-800-424-9300  
Outside US: +1-202-483-7616

**NON-EMERGENCY HEALTH/SAFETY INFORMATION:** +1-610-682-6361

**CHEMICAL FAMILY:** Sulfuric acid solution.

**PRODUCT USE:** Electrolyte for Industrial/Commercial electric storage batteries.

This product is considered a Hazardous Substance, Preparation or Article that is regulated under US-OSHA; CAN-WHMIS; IOSH; ISO; UK-CHIP; or EU Directives (67/548/EEC-Dangerous Substance Labeling, 98/24/EC-Chemical Agents at Work, 99/45/EC-Preparation Labeling, 2001/58/EC-MSDS Content, and 1907/2006/EC-REACH), and an MSDS/SDS is required for this product considering that when used as recommended or intended, or under ordinary conditions, it may present a health and safety exposure or other hazard.

#### Additional Information

This product may not be compatible with all environments, such as those containing liquid solvents or extreme temperature or pressure. Please request information if considering use under extreme conditions or use beyond current product labeling.

### SECTION 2: HAZARDS IDENTIFICATION

#### GHS Classification:

Health	Environmental	Physical
Acute Toxicity – Not listed (NL) Eye Corrosion – Corrosive Skin Corrosion – Corrosive Skin Sensitization – NL Mutagenicity/Carcinogenicity – NL Reproductive/Developmental – NL Target Organ Toxicity (Repeated) – NL	Aquatic Toxicity – NL	NFPA – Flammable gas, hydrogen (during charging of batteries or contact with finely-divided metals) CN - NL EU - NL

#### GHS Label: Battery Fluid, Acid

**Symbols:** C (Corrosive)



#### Hazard Statements

Contact may cause irritation or severe burns. Irritating to eyes, respiratory system, and skin.

#### Precautionary Statements

Keep out of reach of children. Keep containers tightly closed.

**EMERGENCY OVERVIEW:** Causes severe burns. Acid mist is irritating to eyes, respiratory system, and skin. Prolonged inhalation or ingestion may result in serious damage to health.

**POTENTIAL HEALTH EFFECTS:**

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**EYES:** Direct contact with liquid may cause severe burns or blindness.  
**SKIN:** Direct contact with battery fluid may cause skin irritation or damaging burns.  
**INGESTION:** Swallowing this product may cause severe burns to the esophagus and digestive tract and may be harmful or fatal.  
**INHALATION:** Respiratory tract irritation and possible long term effects.

**ACUTE HEALTH HAZARDS:**

Repeated or prolonged contact may cause skin irritation and/or chemical burns.

**CHRONIC HEALTH HAZARDS:**

Chronic inhalation of strong mineral acid mists containing sulfuric acid may increase the risk of lung cancer. IARC has listed strong mineral acid mists containing sulfuric acid as a Category 1 carcinogen (carcinogenic in humans).

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:**

Pulmonary edema and bronchitis. Skin diseases may also predispose one to acute and chronic effects of sulfuric acid.

Additional Information

None known.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

<b>INGREDIENTS (Chemical/Common Names):</b>	<b>CAS No.:</b>	<b>% by Wt:</b>	<b>EC No.:</b>
Sulfuric acid	7664-93-9	30-43 (average: 36.5)	231-639-5

Additional Information

None known.

**SECTION 4: FIRST AID MEASURES**

**EYE CONTACT:** An eye wash/emergency shower should be provided wherever battery acid exposure is possible. Flush eyes with large amounts of water for at least 15 minutes. Remove contaminated clothing and seek immediate medical attention if eyes have been exposed directly to acid.

**SKIN CONTACT:** Flush affected area(s) with large amounts of water using deluge emergency shower, if available, shower for at least 15 minutes. Remove contaminated clothing. If symptoms persist, seek medical attention.

**INGESTION:** If swallowed, give large amounts of water. Do NOT induce vomiting or aspiration into the lungs may occur and can cause permanent injury or death.

**INHALATION:** If inhaled, remove person to fresh air. If breathing difficulties develop, obtain medical treatment.

**SECTION 5: FIRE-FIGHTING MEASURES**

**SUITABLE/UNSUITABLE EXTINGUISHING MEDIA:**

Dry chemical, carbon dioxide, foam. Trained fire fighters may use water spray under certain conditions.

**SPECIAL FIRE FIGHTING PROCEDURES & PROTECTIVE EQUIPMENT:**

Sulfuric acid will not burn, but is capable of igniting finely divided combustible materials on contact. Use dry chemical agents to smother combustible materials. Avoid breathing mists and vapors. Use full protective equipment (acid-resistant bunker gear) and self-contained breathing apparatus.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

Battery fluid can evolve flammable hydrogen gas when exposed to metals (such as during charging of lead acid batteries) and may increase the fire risk near sparks, excessive heat or open flames. See Section 10 for list of fire by-products.

**SPECIFIC HAZARDS IN CASE OF FIRE:**

Battery Electrolyte (Sulfuric Acid) is Corrosive.

Additional Information

Firefighting water runoff and dilution water may be toxic and corrosive and may cause adverse environmental impacts.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

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### PERSONAL PRECAUTIONS:

Electrolyte material contains sulfuric acids and is corrosive. Wear appropriate protective clothing. If toxic vapors are produced at unknown concentrations, wear a NIOSH-approved respirator or SCBA.

### ENVIRONMENTAL PRECAUTIONS:

Prevent spilled material from entering sewers and waterways.

### SPILL CONTAINMENT & CLEANUP METHODS/MATERIALS:

Stop flow of leaking liquid. Small spills: Use clay, sand, or diatomaceous earth. Dike large spills. Neutralize any spilled electrolyte with neutralizing agents, such as soda ash, sodium carbonate/bicarbonate, or lime. Sweep or shovel spilled material and absorbent and place in approved container. Dispose of any non-recyclable materials in accordance with local, state, provincial or federal regulations.

### Additional Information

None known.

## SECTION 7: HANDLING AND STORAGE

### PRECAUTIONS FOR SAFE HANDLING AND STORAGE:

- Keep containers tightly closed when not in use.
- Do not handle near heat, sparks, or open flames.
- Protect containers from physical damage to avoid leaks and spills.
- Wear appropriate PPE.

### OTHER PRECAUTIONS (e.g.; Incompatibilities):

Keep away from combustible materials, organic chemicals, reducing substances, metals, strong oxidizers and water.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### ENGINEERING CONTROLS/SYSTEM DESIGN INFORMATION:

Use in areas with adequate ventilation.

### VENTILATION:

General dilution ventilation is acceptable. Use local exhaust ventilation if occupational exposure limits are exceeded.

### RESPIRATORY PROTECTION:

Not required for normal conditions of use. See also special firefighting procedures (Section 5).

### EYE PROTECTION:

Wear protective glasses with side shields or goggles. Use a full face shield when pouring acid or when splashing may occur.

### SKIN PROTECTION:

Wear acid resistant gloves as a standard procedure to prevent skin contact.

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT:** Acid resistant apron and face shield recommended when adding water or electrolyte to batteries.

### EXPOSURE GUIDELINES & LIMITS:

OSHA	Permissible Exposure Limit (PEL/TWA)	Sulfuric acid	1 mg/m <sup>3</sup>
ACGIH	2007 Threshold Limit Value (TLV)	Sulfuric acid	0.2 mg/m <sup>3</sup>
Quebec	Permissible Exposure Value (PEV)	Sulfuric acid	1 mg/m <sup>3</sup> TWA 3 mg/m <sup>3</sup> STEV
Ontario	Occupational Exposure Level (OEL)	Sulfuric acid	1 mg/m <sup>3</sup> TWAEV 3 mg/m <sup>3</sup> STEV
Netherlands	Maximaal Aanvaarde Concentratie (MAC)	Sulfuric acid	1 mg/m <sup>3</sup>
Germany	Maximale Arbeitsplatzkonzentrationen (MAK)	Sulfuric acid	1 mg/m <sup>3</sup> TWA 2 mg/m <sup>3</sup> STEL

TWA – 8-Hour Time Weighted Average/ STE – Short Term Exposure / mg/m<sup>3</sup> – milligrams per cubic meter of air/ NE – Not Established

### Additional Information

None known.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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<b>APPEARANCE:</b>	Clear, colorless liquid
<b>ODOR:</b>	Odorless
<b>ODOR THRESHOLD:</b>	NA
<b>PHYSICAL STATE:</b>	Sulfuric Acid: Liquid
<b>pH:</b>	<1
<b>BOILING POINT:</b>	235-240° F
<b>MELTING POINT:</b>	NA
<b>FREEZING POINT:</b>	NA
<b>VAPOR PRESSURE:</b>	13 mmHg
<b>VAPOR DENSITY (AIR = 1):</b>	NA
<b>SPECIFIC GRAVITY (H<sub>2</sub>O = 1):</b>	1.2-1.3
<b>EVAPORATION RATE (n-BuAc=1):</b>	< 1
<b>SOLUBILITY IN WATER:</b>	100%
<b>FLASH POINT:</b>	NA
<b>AUTO-IGNITION TEMPERATURE:</b>	932° F (as hydrogen gas)
<b>LOWER EXPLOSIVE LIMIT (LEL):</b>	4% (as hydrogen gas)
<b>UPPER EXPLOSIVE LIMIT (UEL):</b>	74% (as hydrogen gas)
<b>PARTITION COEFFICIENT:</b>	NA
<b>VISCOSITY (poise @ 25° C):</b>	Not Available
<b>DECOMPOSITION TEMPERATURE:</b>	Not Available

**FLAMMABILITY/HMIS HAZARD CLASSIFICATIONS (US/CN/EU):** As sulfuric acid

HEALTH: 3

FLAMMABILITY: 0

REACTIVITY: 2

### SECTION 10: STABILITY AND REACTIVITY

<b>STABILITY:</b>	This product is stable under normal conditions at ambient temperature.
<b>INCOMPATIBILITY (MATERIAL TO AVOID):</b>	Strong bases, finely divided combustible materials, reducing agents, finely divided metals, and strong oxidizers.
<b>HAZARDOUS DECOMPOSITION BY-PRODUCTS:</b>	Thermal decomposition will produce sulfur dioxide, sulfur trioxide, sulfuric acid mist, and hydrogen.
<b>HAZARDOUS POLYMERIZATION:</b>	Will not occur
<b>CONDITIONS TO AVOID:</b>	Finely divided metals. Concentrated acid may react with water.

### SECTION 11: TOXICOLOGICAL INFORMATION

**ACUTE TOXICITY (Test Results Basis and Comments):**

LD<sub>50</sub>, Rat: 2140 mg/kg

LC<sub>50</sub>, Guinea pig: 510 mg/m<sup>3</sup>

**SUBCHRONIC/CHRONIC TOXICITY (Test Results and Comments):**

IARC listed strong mineral acid mists containing sulfuric acid as a Category 1 carcinogen (Carcinogenic to humans).

Additional Information

None known.

### SECTION 12: ECOLOGICAL INFORMATION

**PERSISTENCE & DEGRADABILITY:**

Sulfuric acid is reactive and not very persistent in the ecosystem.

**BIO-ACCUMULATIVE POTENTIAL (Including Mobility):**

Very high mobility and solubility indicate very low risk of bioaccumulation.

**AQUATIC TOXICITY (Test Results & Comments):**

24-hour LC<sub>50</sub>, fresh water fish (*Brachydanio rerio*): 82 mg/l

96-hour LOEC, fresh water fish (*Cyprinus carpio*): 22 mg/l (lowest observable effect concentration)

Additional Information

- No known effects on stratospheric ozone depletion.

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- Volatile organic compounds: 0% (by Volume)
- Water Endangering Class (WGK): NA

**SECTION 13: DISPOSAL CONSIDERATIONS**

**WASTE DISPOSAL METHOD:** Neutralize acid and follow local, State/Provincial, and Federal/National regulations applicable to as-used, end-of-life characteristics to be determined by end-user.

**HAZARDOUS WASTE CLASS/CODE:** US – Spilled sulfuric acid is a characteristic hazardous waste, U.S. EPA hazardous waste code D002.  
CN – Not applicable to finished product as manufactured for distribution into commerce.  
EWC – Not applicable to finished product as manufactured for distribution into commerce.

Additional Information

Battery Electrolyte (Sulfuric Acid) is Corrosive. Dispose as allowed by local jurisdiction for the end-of-life characteristics.

**SECTION 14: TRANSPORT INFORMATION**

**GROUND – US-DOT/CAN-TDG/EU-ADR/APEC-ADR:**

Proper Shipping Name	Battery Fluid, Acid	ID Number	UN2796
Hazard Class	8	Labels	Corrosive
Packing Group	II		

**AIRCRAFT – ICAO-IATA:**

Proper Shipping Name	Battery Fluid, Acid	ID Number	UN2796
Hazard Class	8	Labels	Corrosive
Packing Group	II		

Reference IATA packing instructions Y809 and 809.

**VESSEL – IMO-IMDG:**

Proper Shipping Name	Battery Fluid, Acid	ID Number	UN2796
Hazard Class	8	Labels	Corrosive
Packing Group	II		

Reference IMDG packing instructions P001.

Additional Information

Transport requires proper packaging and paperwork, including the Nature and Quantity of goods, per applicable origin/destination/customs points as-shipped.

**SECTION 15: REGULATORY INFORMATION**

**INVENTORY STATUS:**

All components are listed on the TSCA; EINECS/ELINCS; and DSL, unless noted otherwise below.

**U.S. FEDERAL REGULATIONS:**

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

**TSCA Section 12b – Export Notification:** If the finished product contains chemicals subject to TSCA Section 12b export notification, they are listed below:

<u>Chemical</u>	<u>CAS #</u>
None	NA

**CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT)**

Chemicals present in the product which could require reporting under the statute:

<u>Chemical</u>	<u>CAS #</u>
Sulfuric acid	7664-93-9

**SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)**

The finished product contains chemicals subject to the reporting requirements of Section 313 of SARA Title III.

<u>Chemical</u>	<u>CAS #</u>	<u>% wt</u>
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Sulfuric acid 7664-93-9 36.5

**CERCLA SECTION 311/312 HAZARD CATEGORIES:** Note that the finished product is exempt from these regulations, but lead and sulfuric acid above the thresholds are reportable on Tier II reports.

Fire Hazard	No
Pressure Hazard	No
Reactivity Hazard	No
Immediate Hazard	Yes (EPA lists sulfuric acid as an Extremely Hazardous Substance)
Delayed Hazard	No

**Sulfuric acid is regulated as an Extremely Hazardous Substance**  
**STATE REGULATIONS (US):**

### California Proposition 65

The following chemicals identified to exist in the finished product as distributed into commerce are known to the State of California to cause cancer, birth defects, or other reproductive harm:

<u>Chemical</u>	<u>CAS #</u>	<u>% Wt</u>
Strong inorganic acid mists including sulfuric acid	NA	36.5

### California Consumer Product Volatile Organic Compound Emissions

This Product is not regulated as a Consumer Product for purposes of CARB/OTC VOC Regulations, as-sold for the intended purpose and into the industrial/Commercial supply chain.

### INTERNATIONAL REGULATIONS (Non-US):

#### Canadian Domestic Substance List (DSL)

All ingredients remaining in the finished product as distributed into commerce are included on the Domestic Substances List.

#### WHMIS Classifications

Class E: Corrosive materials present at greater than 1%

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the Controlled Products Regulations.

#### NPRI and Ontario Regulation 127/01

This product contains the following chemicals subject to the reporting requirements of Canada NPRI +/- or Ont. Reg. 127/01:

<u>Chemical</u>	<u>CAS #</u>	<u>% Wt</u>
None	NA	NA

#### European Inventory of Existing Commercial Chemical Substances (EINECS)

All ingredients remaining in the finished product as distributed into commerce are exempt from, or included on, the European Inventory of Existing Commercial Chemical Substances.

#### European Communities (EC) Hazard Classification according to directives 67/548/EEC and 1999/45/EC.

<u>R-Phrases</u>	<u>S-Phrases</u>
35	1/2, 26, 30, 45

### Additional Information

This product may be subject to additional regulations and laws not identified above, such as for uses other than described or as-designed/as-intended by the manufacturer, or for distribution into specific domestic destinations.

### SECTION 16: OTHER INFORMATION

#### OTHER INFORMATION:

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.

#### SOURCES OF INFORMATION:

International Agency for Research on Cancer (1987), *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans: Overall Evaluations of Carcinogenicity: An updating of IARC Monographs Volumes 1-42, Supplement 7, Lyon, France.*

Ontario Ministry of Labour Regulation 654/86. Regulations Respecting Exposure to Chemical or Biological Agents.

RTECS – Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health.

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### MSDS/SDS PREPARATION INFORMATION:

DATE OF ISSUE: **10 August 2007**

SUPERCEDES: 29 January 2007

### DISCLAIMER:

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**END**