



SAFETY DATA SHEET

Revision Date: Jan 15th, 2015

SECTION 1: IDENTIFICATION

Product Identifier:	Battery Electrolyte
Other Product Name:	Sulfuric Acid
Relevant Identified Uses:	Used to activate dry batteries
Uses Advised Against:	Any Other Not Listed Above
Supplier :	Manufactured for Universal Power Group, Inc.
Address:	488 S Royal Lane, Coppell, TX 75019
Emergency Telephone Number:	US/CAN: 1-800-424-9300 Countries outside of US/CAN: 1-703-527-3887
Website:	www.upgi.com

SECTION 2: HAZARDOUS IDENTIFICATION

Classification according to Regulation (EC) No 1272/2008 [CLP/GHS] 8B: Non flammable corrosive materials.

Classification according to 67/548/EEC or 1999/45/EC:

Xi: Irritating.

C: Corrosive.

Label elements

Product identifier:

Battery Electrolyte

Hazard pictograms



Xn: Harmful



Xi: Irritating



C: Corrosive



WHMIS:



Class E: Corrosive materials

Signal word: DANGER

Hazard statements:

Causes severe skin burns and eye damage. Causes skin irritation.

May cause respiratory irritation.

Precautionary statements:

Keep out of reach of children.

Keep containers tightly closed.

Keep away from heat, sparks, and open flame while charging batteries.

Other hazards:

Adverse human health effects and symptoms:

Inhalation: (Acute): May cause corrosive burns – irreversible damage.

(Chronic): Repeated or prolonged exposure to corrosive fumes may cause bronchial irritation with chronic cough.

Skin: (Acute): Causes severe skin burns and eye damage.

(Chronic): Repeated or prolonged exposure to corrosive materials will cause dermatitis.

Eye: (Acute): Causes serious eye damage.

(Chronic): Repeated or prolonged exposure to corrosive materials or fumes may cause conjunctivitis.

Ingestion: (Acute): May cause irreversible damage to mucous membranes.

(Chronic): Repeated or prolonged exposure to corrosive materials or fumes may cause gastrointestinal disturbances.

Routes of Entry

Inhalation, Skin, Eye, Ingestion/Oral.

Medical conditions aggravated by exposure:

Lungs, Skin.

Acute exposure to sulfuric acid causes severe irritation, burns and permanent tissue damage to all routes of exposure.

Chronic exposure to sulfuric acid may cause erosion of tooth enamel, inflammation of nose, throat and

respiratory system.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Description of the mixture:

CAS No	EC No	% [weight]	Name	WHMIS Classifications	Classification according to CLP (1272/2008)
7664-93-9	231-639-5	35-45%	Sulfuric Acid	D1A, E(including >51%, <=51%)	C; R35; S1/2, S26, S30, S45
7732-18-5	231-791-2	55-65%	Water	Uncontrolled product according to WHMIS classification criteria.	Not Listed

Under United States Regulations (29 CFR 1900.1200 – Hazard Communication standard), this product is considered hazardous. In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS). According to the Globally Harmonized Standard for Classification and Labeling (GHS) this product is considered hazardous.

SECTION 4: FIRST AID MEASURES

Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Skin Contact: For minor skin contact, avoid spreading material on unaffected skin. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Remove and isolate contaminated clothing and shoes.

Ingestion: Give plenty of water to drink. Do NOT induce vomiting. Obtain medical attention immediately if ingested.

Inhalation: Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. Do not use mouth – to – mouth method if victim inhaled the substance.

Self-protection of the first aider:

If artificial respiration is required use a pocket mask equipped with a one-way valve or other proper respiratory medical device.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical, CO2 or water spray.

Unsuitable Extinguishing Media: Any not listed above.

Special Hazards Arising from the Substance or Mixture:

Hazardous Combustion Products: Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive fumes.

Advice for Fire-fighters: Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible. Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.

As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.

Keep out of low areas.

Keep unauthorized personnel away. Stay upwind.

Additional Information:

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

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Ventilate enclosed areas. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

For non-emergency personnel:

Protective equipment: Wear chemical gloves.

For emergency responders:

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area) as an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Do not get water inside container.

Personal protective equipment:

Wear chemical gloves, goggles, acid resistant clothing and boots, respirator if insufficient ventilation.

Environmental precautions:

Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up:

For containment:

Stop leak if you can do it without risk. Absorb with earth, sand, or other non-combustible material. Do not allow discharge of unneutralized acid to sewer. Cautiously neutralize spilled liquid.

For cleaning up:

Dispose of in accordance with local, State, and national regulations.

SECTION 7: HANDLING & STORAGE

Precautions for safe handling:

Protective measures:

Handle an open container with care. Avoid contact with skin and eyes. Use only with adequate ventilation. Use caution when combining with water; DO NOT add water to corrosive liquid, ALWAYS add corrosive liquid to water while stirring to prevent release of heat, steam and fumes.

Advice on general occupational hygiene:

Do not get in eyes or on skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Eyewash stations and safety showers should be provided with unlimited water supply. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities:

Technical measures and storage conditions:

Keep away from incompatible materials. Store locked up. Keep container/package tightly closed in a cool, well-ventilated place. Ventilate enclosed areas.

Storage class:

Class 8B: Non-flammable corrosive materials

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Limit value type (country of origin)	Substance name	EC-No.	CAS-No	Limit value	Monitoring and observation processes
TWA (ACGIH)	Sulfuric Acid	231-639-5	7664-93-9	0.2 mg/m ³	Thoracic fraction
TWA (CA ON)				0.2 mg/m ³	Thoracic
STEL(CA QU)				3 mg/m ³	
TWA(CA QU)				1 mg/m ³	
STEL (CH)				2 mg/m ³	
TWA(CH)				1 mg/m ³	
STEL(FI)				1 mg/m ³	
TWA(FI)				0.2 mg/m ³	
Ceiling(DE)				0.1 mg/m ³ peak	Inhalable fraction
MAK(DE)				0.1 mg/m ³	Inhalable fraction
Ceiling(JP)				1 mg/m ³	
TWA(ME)				1 mg/m ³	
TWA(NIOSH)				1 mg/m ³	
TWA(OSHA)				1 mg/m ³	

Exposure Controls:

Appropriate engineering controls:

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Equipment:

Pictograms:



Eye/Face Protection: Wear face shield and eye protection.

Skin Protection: Wear protective gloves with elbow length gauntlet.

Wear synthetic apron. Under severe exposure or emergency conditions, wear acid-resistant clothing

Respiratory Protection: None required under normal conditions of use. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties:

Appearance:

Physical state: Liquid, Color: Clear, Odor: Pungent, Odor threshold, No Data.

Safety relevant basic data pH (20 °C): No Data.

Melting point/range(°C): No Data.

Initial boiling point/range (°C): 95-95.5556.

Decomposition temperature (°C): No Data.

Flash point (°C): No Data.

Ignition temperature (°C): No Data.

Vapor pressure (hPa): 10 mmHg.

Vapor density (air = 1): 1.

Density (g/cm³): 10.1392-11.2658 lbs/gal.

Bulk density (kg/m³): No Data.

Specific Gravity/Relative Density (water=1): 1.215-1.35.

Water solubility (20 °C in g/l): 100%

Solubility(ies): No Data.

Partition coefficient: No Data.

N-Octanol/Water (log Po/w): No Data.

Viscosity, dynamic (mPa s): No Data.

Physical hazards:Flammable gases.Metal corrosion

Other safety information:

Properties of explosive atmospheres (mixtures):

Gases and vapors: No Data.

Dusts: No Data.

Physical chemical properties of nanoparticles: No Data.

Limiting oxygen concentration: No Data.

Bulk density: No Data.

Solubility in different media: No Data.

Stability in organic solvents and identity of relevant degradation products: No Data.

Evaporation rate: 1 n-butyl, Acetate=1.

Conductivity: No Data.

Surface tension: No Data.

Dissociation constant in water (pKa): No Data.

Oxidation-reduction Potential: No Data.

Fat solubility (solvent – oil to be specified): No Data.

Critical temperature: No Data.

SECTION 10: STABILITY & REACTIVITY

Reactivity: Not reactive.

Chemical stability: Stable under normal temperatures and pressures.

Possibility of hazardous reactions:Hazardous polymerization will not occur.

Conditions to avoid: Contact with organic materials, combustibles, strong reducing agents, metals, strong oxidizers, water.

Incompatible materials:

Reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.

Hazardous decomposition products:

Sulfur trioxide, carbon monoxide, sulfuric acid fumes, and sulfur dioxide.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects:

Sulfuric Acid (7664-93-9)	Effect dose / Concentration	Species	Method	Time
Acute oral toxicity	2140 mg/kg	Rat	LD50	
Acute inhalative toxicity (vapor)	30 mg/m3	Guinea Pig	LCLo	7 Days (con.)
Acute inhalative toxicity (vapor)	510 mg/m3	Rat	LC50	2 Hours

Acute inhalative toxicity (vapor)	3 mg/m ³	Human	LCLo	24 Weeks
Irritation	5 mg	Rabbit	SEV (eye)	30 second rinse
Irritation	250 ug	Rabbit	SEV (eye)	
Water (7732-18-5)	Effect dose / Concentration	Species	Method	Time
Acute oral toxicity	>90 mL/kg	Rat	LD50	

Other information:

Carcinogenic 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 a battery.** Batteries subjected to abusive charging at excessively high currents for prolonged periods without vent caps in place may create a surrounding atmosphere of the offensive strong inorganic acid mist containing sulfuric acid.

Carcinogenic Effects			
	CAS	IARC	NTP
Sulfuric acid	7664-93-9	Group 1-Carcinogenic	Not established

Routes of exposure:

In case of ingestion:

(Acute): May cause irreversible damage to mucous membranes.

(Chronic): Repeated or prolonged exposure to corrosive materials or fumes may cause gastrointestinal disturbances.

In case of skin contact:

(Acute): Causes severe skin burns and eye damage.

(Chronic): Repeated or prolonged exposure to corrosive materials will cause dermatitis.

In case of inhalation:

(Acute): May cause corrosive burns – irreversible damage.

(Chronic): Repeated or prolonged exposure to corrosive fumes may cause bronchial irritation with chronic cough.

In case of eye contact:

(Acute): Causes serious eye damage.

(Chronic): Repeated or prolonged exposure to corrosive materials or fumes may cause conjunctivitis.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity: Aquatic toxicity

Substances Acute (short-term) toxicity: Sulfuric Acid

Effect dose	Exposure time	Species	Method	Evaluation	Ramark
82mg/L	24Hours	Brachydaniorerio	LC50		
22mg/L	96Hours	Cyprinus carpio	LOEC		Lowest observable effect concentration

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods:

Product/packaging disposal: Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Waste codes/waste designations according to EWC/AVV: 16 06 06

Additional information:

Any waste marked with an asterisk (*) is considered as a hazardous waste pursuant to Directive 91/689/EEC on hazardous waste, and subject to the provisions of that Directive unless Article 1(5) of that Directive applies.

SECTION 14. TRANSPORT INFORMATION

Land transport:

UN-No: UN2796

Proper shipping name: Battery fluid, acid

Class(es): 8

Packing group: II

Hazard label(s): 8

Special provision(s): -

Sea transport:

UN No: UN2796

Proper shipping name: Battery fluid, acid

Class(es): 8

Packing group: II

Special provision(s): -

Air transport (ICAO-IATA/DGR):

UN No: UN2796

Proper shipping name: Battery fluid, acid

Class(es): 8

Packing group: II

Special provision(s):

SECTION 15: REGULATORY INFORMATION

National regulations(Canada): WHMIS Classification:

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 SDS contains all the information required by the Controlled Products Regulations.

Canada DSL:

The following substances are listed on the Canadian DSL: Sulfuric Acid (7664-93-9); Water (7732-18-5).

Canada NDSL:

None of the components on this SDS are listed on the Canadian NDSL.

National regulations(China):

The following components are listed on the Inventory list for China: Sulfuric Acid (7664-93-9); Water (7732-18-5)

National regulations (European Union):

Classification:

Xn; Xi; C

Risk Phrases: R35, R36, R38.

Safety Phrases: S1/2, S26, S30, S45.

The following components are listed on the EU EINECS: Sulfuric acid (7664-93-9); Water (7732-18-5).

None of the above mentioned components are listed on the EU ELNICS.

National regulations (Japan):

The following chemicals are on the Japanese ENCS: Sulfuric Acid (7664-93-9); Water (7732-18-5).

National regulations (Korea):

The following substances are listed on the Korean KECL: Sulfuric Acid (7664-93-9); Water (7732-18-5).

National regulations (United States):

The following substances are on the MA, NJ, and PA Right To Know Lists: Sulfuric Acid (7664-93-9); Water (7732-18-5).

The following substances are on the TSCA inventory: Sulfuric Acid (7664-93-9); Water (7732-18-5).

National regulations (Mexico):

Pollutant Release and Transfer Register: Reporting Emissions.

SECTION 16: OTHER INFORMATION

Relevant R-, H- and EUH-phrases (number and full text):

Hazard Abbreviations:

Xn: Harmful.

Xi: Irritant C: Corrosive.

Risk Phrases:

R35: Causes severe burns.

R36: Irritating to eyes R38: Irritating to skin.

Safety Phrases:

S1/2: Keep locked up and out of the reach of children.

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice S30: Never add water to this product.

S45: In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)

Hazard statements:

H314: Causes severe skin burns and eye damage.

H315: Causes skin irritation.

H335: May cause respiratory irritation.

Precautionary statements: P102: Keep out of reach of children. P233: Keep containers tightly closed.

P210: Keep away from heat, sparks, and open flame while charging batteries.

Universal Power Group, Inc. provides the information in this SDS in good faith. However, Universal Power Group, Inc. makes no representations as to its comprehensiveness or accuracy. This data sheet is intended, as a guide, for the appropriate precautionary handling of the material by a properly trained person using it.

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