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Version 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Battery Electrolyte

Other means of identification

Product Code 853022
UN/ID No. UN2796
Synonyms Not available.

Recommended use of the chemical and restrictions on use

Recommended Use Used to activate dry batteries.
Uses advised against Any other not listed above.

Details of the supplier of the safety data sheet

Supplier Address
 Yuasa Battery, Inc.
 2901 Montrose Avenue
 Laureldale, PA 19605
 United States
 www.yuasabatteries.com

Emergency telephone number

Company Phone Number (610) 929-5781
24 Hour Emergency Phone Number CHEMTREC
 Domestic (800) 424-9300
 International 1(703) 527-3887

2. HAZARDS IDENTIFICATION

Classification

Health Hazards

Skin corrosion/irritation	Category 1A
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 1A

Physical hazards

Not classified

OSHA Regulatory Status

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

Label elements**Emergency Overview****Danger****Hazard statements**

Causes severe skin burns and eye damage
May cause cancer



Appearance Clear liquid.

Physical state Liquid

Odor Pungent

Precautionary Statements - Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling

Precautionary Statements - Response

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
IF IN EYES: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
IF ON SKIN (or hair): Immediately remove/take off all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)**Other Information**

May be harmful if swallowed.

Unknown Acute Toxicity

65% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

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.

Synonyms Not available.

Chemical Name	CAS No.	Weight-%
Sulfuric Acid	7664-93-9	30-40

4. FIRST AID MEASURES

First aid measures

Eye contact

In case of eye contact, immediately flush eyes with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. Get medical attention if irritation persists.

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.

Inhalation

In case of inhalation, remove to fresh air. If not breathing, provide artificial respiration. If breathing is difficult, administer oxygen. Seek medical attention immediately.

Ingestion

In case of accidental ingestion, wash out mouth with copious amounts of water. Seek medical attention immediately. Do not induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person.

Self-protection of the first aider

Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Most important symptoms and effects, both acute and delayed

Symptoms

Not available.

Indication of any immediate medical attention and special treatment needed

Note to physicians

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Small Fire

Dry chemical, CO₂, or water spray.

Large Fire

Dry chemical or CO₂, alcohol - resistant foam or water spray.

Unsuitable extinguishing media Any not listed above.

Specific hazards arising from the chemical

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

Explosion data

Sensitivity to Mechanical Impact None known.

Sensitivity to Static Discharge None known.

Protective equipment and precautions for firefighters

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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures**Personal precautions**

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

Other Information

Non-emergency personnel should utilize 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**Environmental precautions**

Prevent entry into waterways, sewers, basements or confined areas. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up**Methods 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 un-neutralized acid to sewer. Cautiously neutralize spilled liquid.

Methods for cleaning up

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

7. HANDLING AND STORAGE

Precautions for safe handling**Advice on safe handling**

Handle and 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.

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**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.

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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sulfuric Acid 7664-93-9	TWA: 0.2 mg/m ³ thoracic fraction	TWA: 1 mg/m ³	IDLH: 15 mg/m ³ TWA: 1 mg/m ³

Appropriate engineering controls

Engineering Controls

The health hazard risks of handling this material are dependent on factors, such as physical form and quantity. Site-specific risk assessments should be conducted to determine the appropriate exposure control measures. 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 as low as reasonably achievable.

Individual protection measures, such as personal protective equipment

Eye/face protection

In laboratory, medical or industrial settings, safety glasses with side shields are recommended. The use of goggles or full face protection may be required depending on the industrial exposure setting. Contact a health and safety professional for specific information.

Skin and body protection

Wear protective gloves with elbow length gauntlet. Wear synthetic apron. Under severe exposure or emergency conditions, wear acid-resistant clothing and boots.

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.

General Hygiene Considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid		
Appearance	Clear liquid.	Odor	Pungent
Color	Clear	Odor threshold	No Data

Property

Values

pH	No Data
Melting point/freezing point	No Data
Boiling point / boiling range	95 °C - 95.5556 °C
Flash point	No Data
Evaporation rate	1 n-butyl, Acetate=1
Flammability (solid, gas)	No Data
Flammability Limit in Air	
Upper flammability limit:	No Data
Lower flammability limit:	No Data
Vapor pressure	10 mmHg
Vapor density	1
Specific Gravity	1.215-1.35
Water solubility	100%
Solubility in other solvents	No Data
Partition coefficient	No Data
Autoignition temperature	No Data
Decomposition temperature	No Data

Kinematic viscosity No Data
 Dynamic viscosity No Data
 Explosive properties No Data
 Oxidizing properties No Data

Other Information

Softening point No Data
 Molecular weight No Data
 VOC Content (%) Not available.
 Density 10.1392-11.2658 lbs/gal
 Bulk density No Data

10. STABILITY AND REACTIVITY

Reactivity

Not reactive.

Chemical stability

Stable under normal conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous polymerization Hazardous polymerization does 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.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure**Product Information**

Inhalation (Acute): May cause corrosive burns – irreversible damage.
 (Chronic): Repeated or prolonged exposure to corrosive fumes may cause bronchial irritation with chronic cough.

Eye contact (Acute): Causes serious eye damage.
 (Chronic): Repeated or prolonged exposure to corrosive materials or fumes may cause conjunctivitis.

Skin Contact (Acute): Causes severe skin burns and eye damage.
 (Chronic): Repeated or prolonged exposure to corrosive materials will cause dermatitis.

Ingestion (Acute): May cause irreversible damage to mucous membranes.
 (Chronic): Repeated or prolonged exposure to corrosive materials or fumes may cause gastrointestinal disturbances.

Acute Effects

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Sulfuric Acid 7664-93-9	= 2140 mg/kg (Rat)	-	= 510 mg/m ³ (Rat) 2 h

Information on toxicological effects**Symptoms** Not available.**Delayed and immediate effects as well as chronic effects from short and long-term exposure****Skin corrosion/irritation** Not available.**Serious eye damage/eye irritation** Effective dose; 5mg Rabbit, 30 second rinse. Severe eye irritation.**Irritation** Severe burns.**Corrosivity** Not available.**Sensitization** Not available.**Germ cell mutagenicity** Not available.

Carcinogenicity 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.

Chemical Name	ACGIH	IARC	NTP	OSHA
Sulfuric Acid 7664-93-9	A2	Group 1	-	X

Reproductive toxicity Not available.**Developmental Toxicity** Not available.**Teratogenicity** Not available.**STOT - single exposure** Not classified.**STOT - repeated exposure** Not classified.**Chronic toxicity** Not available.**Subchronic toxicity** Not available.**Target Organ Effects** Not available.**Aspiration hazard** Not available.**Numerical measures of toxicity - Product Information****Unknown Acute Toxicity** 65% of the mixture consists of ingredient(s) of unknown toxicity**12. ECOLOGICAL INFORMATION****Ecotoxicity**

65% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Sulfuric Acid 7664-93-9		500: 96 h Brachydanio rerio mg/L LC50 static		29: 24 h Daphnia magna mg/L EC50

Persistence and degradability

Not available.

Bioaccumulation

Not available.

Mobility

Not available.

Other adverse effects

Not available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

US EPA Waste Number Not available.

California Hazardous Waste Codes Not available

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Sulfuric Acid 7664-93-9	Toxic Corrosive

14. TRANSPORT INFORMATION

DOT

UN/ID No. UN2796
Proper shipping name Battery fluid, acid
Hazard Class 8
Subsidiary class 8
Packing Group II
Special Provisions A3, A7, B2, B15, IB2, N6, N34, T8, TP2, 154
 Passenger aircraft/rail: 1.00 L
 Cargo aircraft/rail: 30.00 L

TDG

UN/ID No. UN2796
Proper shipping name Battery fluid, acid
Hazard Class 8
Subsidiary class 8
Packing Group II
Special Provisions
 Explosive Limit and Limited Quantity Index: 1.00
 Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index: 1.00

MEX

Not regulated

ICAO (air)

UN/ID No. UN2796
Proper shipping name Battery fluid, acid
Hazard Class 8
Packing Group II
Special Provisions -

IATA

UN/ID No. UN2796
Proper shipping name Battery fluid, acid
Hazard Class 8
Packing Group II
Special Provisions -

IMDG

UN/ID No. UN2796
 Proper shipping name Battery fluid, acid
 Hazard Class 8
 Packing Group II
 Special Provisions -
 Marine pollutant No

RID

UN/ID No. UN2796
 Proper shipping name Battery fluid, acid
 Hazard Class 8
 Packing Group II
 Classification code C1
 Special Provisions -
 Labels 8

ADR

UN/ID No. UN2796
 Proper shipping name Battery fluid, acid
 Hazard Class 8
 Packing Group II
 Classification code C1
 Special Provisions -
 Labels 8

ADN

Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
 DSL/NDSL Complies
 EINECS/ELINCS Complies
 ENCS Complies
 IECS Complies
 KECL Complies
 PICCS Complies
 AICS Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
 EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
 ENCS - Japan Existing and New Chemical Substances
 IECS - China Inventory of Existing Chemical Substances
 KECL - Korean Existing and Evaluated Chemical Substances
 PICCS - Philippines Inventory of Chemicals and Chemical Substances
 AICS - Australian Inventory of Chemical Substances

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Sulfuric Acid - 7664-93-9	7664-93-9	35	1.0

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sulfuric Acid 7664-93-9	1000 lb	-	-	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Sulfuric Acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Sulfuric Acid 7664-93-9	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not available.

16. OTHER INFORMATION

Prepared By IES Engineers
Issue Date 13-Feb-2014
Revision Date 1-Dec-2014
Revision Note
 Not available.

Disclaimer

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. Yuasa, Inc. assumes no responsibility for injury to the vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, Yuasa, Inc. assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

End of Safety Data Sheet