



## SAFETY DATA SHEET

Revision Date: Jan 15th, 2015

### SECTION 1: IDENTIFICATION

**Product Identifier:** Conventional flooded battery  
**Other Product Name:** Dry charged, lead-acid battery  
**Relevant Identified Uses:** Power Sport 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 of the substance or mixture:**

Classification according to Regulation (EC) No 1272/2008 [CLP/GHS].

Class 13: Non-flammable solids in non-flammable package.

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

Xi: Irritating

**Label elements:**

Labeling according to Regulation (EC) No 1272/2008.

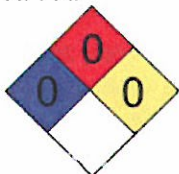
Product identifier: Dry Charge Battery.

Hazard pictograms:



Xi: Irritating

NFPA:



WHMIS:

Not Regulated

Signal word: CAUTION

**Hazard statements:**

May be harmful in contact with skin.

Causes skin irritation.

May cause respiratory irritation.

Warning! Contains lead.

**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): Under normal conditions of use, no health effects are expected.

(Chronic): Repeated and prolonged exposure may cause irritation.

**Skin:** (Acute): Under normal conditions of use, no health effects are expected.

(Chronic): No data available.

**Eye:** (Acute): Under normal conditions of use, no health effects are expected. Exposure to dust may cause irritation.

(Chronic): No data available.

**Ingestion:** (Acute): Under normal conditions of use, no health effects are expected. Lead ingestion may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping.

(Chronic): No data available.

**Carcinogenic Effects:** Material is an article. No health effects are expected related to normal use of this product as sold. Material does contain components that exhibit carcinogenic effects.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### Description of the mixture:

CAS No	EC No	% [weight]	Name	WHMIS Classifications	Classification according to CLP (1272/2008)
7439-92-1	231-100-4	80-92%	Lead	D2A	Xn, N, T; R20/22, R33, R50, R50/53, R53, R61, R62; Repr. Cat. 1, Repr. Cat. 3; S53, S45, S60, 231-100-4 S61 except those specified elsewhere in the annex
7440-36-0	231-146-5	0-1%	Antimony	Uncontrolled product according to WHMIS classification criteria; D1B(powder)	Xn, N; R20/22, R51/53; S2, S61 except tetroxide, pentoxide, trisulphide, pentasulphide, and those specified elsewhere in the annex
7440-31-5	231-141-8	0-0.1%	Tin	Uncontrolled product according to WHMIS classification criteria	Not Listed
7440-38-2	231-148-6	0-0.1%	Arsenic	D1A, D2A	T, N; R23/25, R50/53; S1/2, S20/21, S28, S45, S60, S61
7440-70-2	231-179-5	0-0.1%	Calcium	B6, E	F; R15; S2, S8, S24/25, S43

Case material composes 5-6% of the article. Case material includes the following components: 1- Propene, homopolymer (9003-07-0); Polystyrene (9003-53-6); Acrylonitrile, polymer with styrene (9003-54-7); Acrylonitrile, polymer with 1,3-butadiene and styrene (9003-56-9); Styrene polymer with 1,3-butadiene and styrene (9003-56-9); Styrene polymer with 1,3-butadiene (Kraton) (9003-55-8); Ethylene, chloro-, polymer (9003-86-2); Hard Rubber; Polycarbonate; Polyethylene.

## SECTION 4: FIRST AID MEASURES

**Eye Contact:** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If contact with material occurs flush eyes with water. If signs/symptoms develop, get medical attention

**Skin Contact:** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Wash skin with soap and water. If signs/symptoms develop, get medical

attention.

**Ingestion:** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If ingested consult physician immediately.

**Inhalation:** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If signs/symptoms develop, move person to fresh air..

**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:** CO2, dry chemical or foam.

**Unsuitable Extinguishing Media:** Avoid using water.

**Special Hazards Arising from the Substance or Mixture:**

**Hazardous Combustion Products:**Lead portion of battery will likely produce toxic metal fume, vapor or dust.

**Advice for Fire-fighters:** Keep sparks or other sources of ignition away from batteries. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

**Additional Information:**

Material itself is non-combustible although in fire situations will likely produce toxic metal fume, vapor or dust.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

**Personal Precautions:** Protective equipment and emergency procedures.

No special precautions expected to be necessary if material is used under ordinary conditions and as recommended. Avoid contact of lead with skin.

**For non-emergency personnel :**Protective equipment: Wear chemical gloves.

**For emergency responders** No emergency procedures are expected to be necessary if material is used under ordinary conditions as recommended. Use normal clean up procedures.

**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. Runoff from fire control and dilution water may be toxic and corrosive and may cause adverse environmental impacts.

### Methods and material for containment and cleaning up

For containment:

Lead dust should be vacuumed or wet swept into a D.O.T. approved container. Use controls that minimize fugitive emissions. Do not use compressed air.

For cleaning up:

Contact local and/or state officials for proper disposal requirements.

## SECTION 7: HANDLING & STORAGE

### Precautions for safe handling:

**Handle batteries cautiously.** Do not tip to avoid spills (if filled with electrolyte). Avoid contact with internal components. Wear protective clothing when filling or handling batteries. Follow manufacturer's instructions for installation and service. Do not allow conductive material to touch the battery terminals. Short circuit may occur and cause battery failure and fire.

**Advice on general occupational hygiene:** 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:

Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water.

### Technical measures and storage conditions:

Store in a cool/low-temperature, well-ventilated place away from heat and ignition sources. Batteries should be stored under roof for protection against adverse weather conditions. Place cardboard between layers of stacked batteries to avoid damage and short circuits. Store batteries on an impervious surface. Storage class:

Class 13: Non-flammable solids in non-flammable package.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational exposure limits:

Limit value type (country of origin)	Substance name	EC-No.	CAS-No	Limit value	Monitoring and observation processes
TWA(ACGIH USA) STEL (CA-ON) TWA (CA-ON) TWA (CA-QU)	Arsenic		7440-38-2	0.01 mg/m <sup>3</sup> 50 µg/m <sup>3</sup> 10 µg/m <sup>3</sup> 1.1 mg/m <sup>3</sup>	Designated substance regulation

STEL (CH) TWA (CH) TWA (FI) TWA (FI) Biological Limit Value (FI) TWA (ME) Ceiling (NIOSH)				1.2 mg/m3 0.01 mg/m3 0.01 mg/m3  70 nmol/L 1.1 mg/m3 1.2 mg/m3	Medium: Urine Time: end of shift at end of workweek
TWA(ACGIH USA) TWA (CA) TWA (FI) STEL(ME) TWA (ME) TWA (NIOSH USA)	Tin	231-141-8	7440-31-5	2 mg/m3 2 mg/m3 2 mg/m3 4 mg/m3 2 mg/m3 2 mg/m3	
STEL (CH) TWA (CH) TWA (ACGIH USA) TWA (CA) TWA (FI) TWA (JP) TWA(ME) TWA(NIOSH USA) TWA (OSHA USA)	Antimony	231-146-5	7440-36-0	1.5 mg/m3 0.5 mg/m3 0.5 mg/m3 0.5 mg/m3 0.5 mg/m3 0.1 mg/m3 0.5 mg/m3 0.5 mg/m3 0.5 mg/m3	
TWA (ACGIH) TWA(CA ON) TWA(CA QU) STEL(CH) TWA(CH) TWA(FI) Biological Limit Value (FI) TWA(JP) TWA(ME) TWA(NIOSH) TWA(OSHA)	Lead	231-100-4	7439-92-1	0.05 mg/m3 0.05 mg/m3 0.05 mg/m3 0.15 (0.09) mg/m3 0.05(0.03)mg/m3 0.1 mg/m3 1.4 umol/L 0.1 mg/m3 0.15 mg/m3 0.05 mg/m3 50 ug/m3	Designated substance regulation Dust (fume) Dust (fume) Dust  As Pb, dust and fume

**Exposure Controls:** Store and charge in a well-ventilated area. General dilution ventilation is acceptable.

**Personal Protective Equipment:**

Pictograms:



**Eye/Face Protection:** Wear protective eyewear (goggles, face shield or safety glasses with side shields).

**Skin Protection:** Wear protective gloves.

No skin protection is ordinarily required under normal conditions of use, in accordance with industrial hygiene practices. If contact with leaking battery is expected, precautions should be taken to avoid skin contact. Under severe exposure or emergency conditions, wear acid resistant clothing and boots.

**Respiratory Protection:** In case of insufficient ventilation, wear suitable respiratory equipment.

## **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

Information on basic physical and chemical properties

Appearance:

**Physical state:** Solid **Color:** Bluish gray metal **Odor:** Odorless **Odor threshold:** No Data

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

**Melting point/range(°C):** 252.2222-360.

**Initial boiling point/range (°C):** 1380

**Decomposition temperature (°C):** No Data.

**Flash point (°C):** No Data.

**Ignition temperature (°C):** No Data.

**Vapor pressure (hPa):** No Data.

**Vapor density (air = 1):** No Data.

**Density (g/cm<sup>3</sup>):** 599.3267-705.4575 lbs/ft<sup>3</sup>.

**Bulk density (kg/m<sup>3</sup>):** No Data.

**Specific Gravity/Relative Density (Water=1):** 9.6-11.3.

**Water solubility (20°C in g/l):** No Data.

**Solubility(ies):** No Data.

**Partition coefficient:** No Data.

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

**Viscosity, dynamic (mPa s):** No Data.

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:** No Data.

**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:** Prolonged overcharge, sources of ignition.

**Incompatible materials:** Avoid contact with strong bases, acids, combustible organic materials,halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water.

**Hazardous decomposition products:** Lead compounds exposed to high temperatures will likely produce toxic metal fume, vapor or dust; contact with strong acid/base or presence of nascent hydrogen may generate highly toxic arsine gas.

## SECTION 11: TOXICOLOGICAL INFORMATION

Lead (7439-92-1)	Effect dose / Concentration	Species	Method	Time
Acute oral toxicity	155 mg/kg	Human	LDLo	
Acute oral toxicity	1050 ug/kg	Rat	TDLo	30 Weeks(int.)
Acute inhalative toxicity (dust/mist)	0.011 mg/m3	Human	LCLo	26 Weeks (int.)
Mutagen	23 ug/m3	Rat	Inhalation	16 Weeks
Reproductive	790 mg/kg	Rat	TDLo (Oral)	
Reproductive	3 mg/m3	Rat	TCLo (Inhalation)	1-21 Days preg.
Antimony (7440-36-0)	Effect dose / Concentration	Species	Method	Time
Acute oral toxicity	100 mg/kg	Rat	LD50	
Acute inhalative toxicity (dust/mist)	13.5 mg/m3	Human	LCLo	4 Hours
Tumorigen/Carcinogen	50 mg/m3	Rat	TCLo	7 hours 52 weeks(int.)



Arsenic (7440-38-2)	Effect dose / Concentration	Species	Method	Time
Acute oral toxicity	763 mg/kg	Rat	LD50	
Acute oral toxicity	5 mg/kg	Rat	LDLo	
Mutagen	0.211 mg/L	Human	Oral	15 Years
Reproductive	605 ug/kg	Rat	TDL0	35 weeks preg.

**Other information:**

**In case of ingestion:**

Acute (Immediate): Under normal conditions of use, no health effects are expected. Lead ingestion may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping.

Chronic (Delayed): No data available.

Carcinogenic Effects			
	CAS	IARC	NTP
Lead	7439-92-1	Group 2A-Probable Carcinogen	Reasonably anticipated to be human carcinogen

**Routes of exposure:**

**In case of ingestion:**

Acute (Immediate): Under normal conditions of use, no health effects are expected. Lead ingestion may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping.

Chronic (Delayed): No data available.

**In case of skin contact:**

Acute (Immediate): Under normal conditions of use, no health effects are expected. Chronic (Delayed): No data available.

**In case of inhalation:**

Acute (Immediate): Under normal conditions of use, no health effects are expected. Contents of an open battery can cause respiratory irritation.

Chronic (Delayed): Repeated and prolonged exposure may cause irritation.

**In case of eye contact:**

Acute (Immediate): Under normal conditions of use, no health effects are expected. Exposure to dust may cause irritation.

Chronic (Delayed): No data available.

## SECTION 12: ECOLOGICAL INFORMATION

**Toxicity:** Aquatic toxicity.

**Substances Acute (short-term) toxicity:** No Data.

**Persistence/Degradability:** Lead is persistent in soils and sediments.

## **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 05.

**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**

### **NOTE:**

This product is not regulated for domestic transport by land, air, or rail.

- Under 49 CFR 171.8, the individual packages that contain lead metal (<100 micrometers) below the reportable quantity (RQ) are not regulated.
- Under 49 CFR 171.4, except when transporting aboard a vessel, the requirements of this sub chapter specific to marine pollutants do not apply to non-bulk packaging transported by motor vehicles, rail cars, and aircrafts.

### **DOT**

This product is not hazardous as defined by 49CFR 172.101 by the U.S. Department of Transportation.

### **TDG**

This product is not classified as dangerous goods by the TDG standards UN-

### **MEX**

Not regulated

### **ICAO (air)**

This product is not classified as dangerous goods by the International Air Transport Association (IATA) or the ICAO

### **IATA**

This product is not classified as dangerous goods by the International Air Transport Association (IATA) or the ICAO.

### **IMDG**

This product is not classified as dangerous goods by the IMO.

### **RID**

This product is not classified by the United Nations Economic Commission for Europe to be dangerous goods.

### **ADR**

This product is not classified by the United Nations Economic Commission for Europe to be dangerous goods.

### **ADN**

Not regulated.

## **SECTION 15: REGULATORY INFORMATION**

### **National regulations(Canada): WHMIS Classification:**

This product does not meet the classification criteria of the Controlled Products Regulations.

*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.*

### **Canada DSL:**

The following substances are listed on the Canadian DSL:

Lead (7439-92-1); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2);  
Calcium (7440-70-2)

### **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:

Lead (7439-92-1); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2); Calcium (7440-70-2).

National regulations(European Union): Classification:

Xi

Risk Phrases: R36, R38.

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

The following components are listed on the EU EINECS:

Lead (7439-92-1); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2); Calcium (7440-70-2)

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

**National regulations(Japan):**

The following chemicals are on the Japanese ENCS:

Lead (7439-92-1); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2); Calcium (7440- 70-2).

**National regulations(Korea):**

The following substances are listed on the Korean KECL:

Lead (7439-92-1); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2); Calcium (7440- 70-2).

**National regulations(United States):**

The following substances are on the MA, NJ, and PA Right To Know Lists:

Lead (7439-92-1); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2); Calcium (7440- 70-2).

The following substances are on the TSCA inventory:

Lead (7439-92-1); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2); Calcium (7440- 70-2).

**SECTION 16: OTHER INFORMATION**

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

**Hazard Abbreviations:**

Xi: Irritant.

Xn: Harmful.

N: Dangerous for the environment T: Toxic.

F: Highly Flammable.

**Risk Phrases:**

R15: Contact with water liberates extremely flammable gases.

R20/22: Harmful by inhalation and if swallowed R23/25: Toxic by inhalation and if swallowed.

R33: Danger of cumulative effects R36: Irritating to eyes.

R38: Irritating to skin.

R50: Very toxic to aquatic organisms.

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic.

environment R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R53: May cause long-term adverse effects in the aquatic environment R61: May cause harm to the unborn child.

R62: Possible risk of impaired fertility.

**Safety Phrases:**

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

S2: Keep out of the reach of children S8: Keep container dry.

S20/21: When using do not eat, drink, or smoke.

S24/25: Avoid contact with skin and eyes.

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice S28: After contact with skin, wash immediately with plenty of water.

S30: Never add water to this product.

S43: In case of fire use CO2, dry chemical, or foam. Never use water.

S45: In case of accident or if you feel unwell seek medical advice immediately (show the label where possible) S53: Avoid exposure – obtain special instructions before use.

S60: This material and its container must be disposed of as hazardous waste.

S61: Avoid release to the environment. Refer to special instructions/safety data sheet.

**Hazard statements:**

H313: May be harmful in contact with skin.

H315: Causes skin irritation.

H335: May cause respiratory irritation EUH201A: Warning! Contains lead.

**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.

Individuals receiving this information must exercise their independent judgement in determining its appropriateness for a particular process. Universal Power Group, Inc. will not accept responsibility for damages resulting from use of reliance upon this information.



# 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



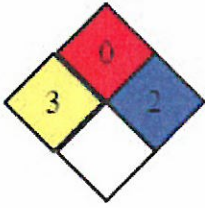
Xn: Harmful



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 <sup>3</sup>	Thoracic fraction
TWA (CA ON)				0.2 mg/m <sup>3</sup>	Thoracic
STEL(CA QU)				3 mg/m <sup>3</sup>	
TWA(CA QU)				1 mg/m <sup>3</sup>	
STEL (CH)				2 mg/m <sup>3</sup>	
TWA(CH)				1 mg/m <sup>3</sup>	
STEL(FI)				1 mg/m <sup>3</sup>	
TWA(FI)				0.2 mg/m <sup>3</sup>	
Ceiling(DE)				0.1 mg/m <sup>3</sup> peak	Inhalable fraction
MAK(DE)				0.1 mg/m <sup>3</sup>	Inhalable fraction
Ceiling(JP)				1 mg/m <sup>3</sup>	
TWA(ME)				1 mg/m <sup>3</sup>	
TWA(NIOSH)				1 mg/m <sup>3</sup>	
TWA(OSHA)				1 mg/m <sup>3</sup>	

### 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/cm<sup>3</sup>): 10.1392-11.2658 lbs/gal.

Bulk density (kg/m<sup>3</sup>): 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/m <sup>3</sup>	Guinea Pig	LCLo	7 Days (con.)
Acute inhalative toxicity (vapor)	510 mg/m <sup>3</sup>	Rat	LC50	2 Hours

Acute inhalative toxicity (vapor)	3 mg/m <sup>3</sup>	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.**

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