

This chemical is not considered hazardous by the **2012 OSHA Hazard Communication Standard** (29 CFR 1910.1200). This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery.

Acute toxicity-Oral	Category 4
Acute toxicity-Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Reproductive toxicity	Category 1A
Specific target organ toxicity (repeated exposure)	Category 2

2.3 Signal Word

Danger

2.4 Hazard Statements

- Harmful if swallowed
- Harmful if inhaled
- Causes severe skin burns and eye damage
- May damage fertility or the unborn child
- May cause damage to organs through prolonged or repeated exposure



2.5 Precautionary Statements-Prevention

- Obtain special instruction before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required
- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Use only outdoor or in a well-ventilated area
- Do not breathe dust/fume/gas/mist/vapors/spray

2.6 Precautionary Statement-Response

- Immediately call a POISON CENTER or doctor/physician all exposures
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

IF ON SKIN(or hair): Remove/Take off immediately 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: Rinse mouth. Do NOT induce vomiting

2.7 Precautionary Statement-Storage

Store locked up

2.8 Precautionary Statement-Disposal

Dispose of contents/container to an approved waste disposal plant

2.9 Other Hazards

Very toxic to aquatic life with long lasting effects

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Nam	CAS No.	Weight-%
Lead	7439-92-1	65-75
Sulfuric Acid	7664-93-9	14-20
Tin	7440-31-5	<.5
Calcium	7440-70-2	<.1
Fiberglass Separator	Proprietary	5
Case Material: Acrylonitrile Butadine Styrene(ABS)	Proprietary	5-10

**If Chemical Name/CAS No. is "Proprioetary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has beedn withheld as a trade secret. **inorganic lead and electrolyte(sulfuric acid) are the main components of every Valve Regulated Lead Acid battery supplied by SHENG CHANG TECH CO., LTD. Other ingredients may be present dependent upon the specific battery type. For additional information contact SHENG CHANG TECH CO., LTD Technical Department.

SECTION 4. FRIST-AID MEASURES

4.1 First Aid Measure

General Advice Immediately call a poison center or doctor/physician. Provide this SDS to medical personnel for treatment.

Eye Contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Skin Contact	If ON SKIN(or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
Inhalation	If INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Ingestion	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

4.2 Most important symptoms and effects

Symptoms Harmful if swallowed. Harmful if inhaled. Causes severe skin burns and eye damage. May damage fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure.

4.3 Indication of an immediate medical attention and special treatment needed

Noted to Physician Treat symptomatically

SECTION 5. FIRE-FIGHTING MEASURE

5.1 Suitable Extinguishing Media

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

5.1.1 Unsuitable Extinguishing Media Not determined

5.2 Specific Hazards Arising from the Chemical

Not determined

5.2.1 Hazardous Combustion Product

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

Lead Compounds: High temperatures above the melting point are likely to produce toxic metal fume, vapor, or dust; contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas.

5.3 Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions Use personal protective equipment as required.

6.2 Methods and material for containment and cleaning up

Methods for Containment There is no release of material unless the case is damaged or battery is misused/overcharged. If release occurs stop flow of materials, contain/absorb all spill with dry sand, earth, or vermiculite. Do not use combustible materials. Neutralize

spilled material with soda ash, sodium bicarbonate, lime, etc. Wear acid-resistant clothing, boots, gloves, and face shield. Dispose of as hazardous waste. Do not discharge acid to sewer.

Method for Clean-Up

Spent Batteries- send to secondary Lead smelter for recycling. Follow applicable federal, state and local regulations Neutralize as in preceding step. Collect neutralized material in sealed container and handle as hazardous waste as applicable. A copy of this SDS must be supplied to any scrap dealer or secondary lead smelter with the battery.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on Safe Handling

Handle in accordance with good industrial hygiene and safety practice. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wash face, hands, and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Do not breathe dust/ fume/ gas/mist/ vapors/spray. Due to the battery's low internal resistance and power density, high levels of cables on the battery. Use insulated tools only. Follow all installation instructions and diagrams when installing or maintaining battery systems.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Store batteries in a cool, dry, well ventilated area that are separated from incompatible materials and any activity which may generate flames, sparks, or heat. Keep clear of all metallic articles that could contact the negative and positive terminals on a battery and create a short circuit condition.

Incompatible Materials

Sulfuric acid: Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agent, metals sulfur trioxide gas, strong oxidizers, and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.

act with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, and reducing agents.

SECTION 8. EXPOSURE CONTROLAS/PERSONAL PROTECTION

8.1 Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Lead	TWA: 0.05 mg/m ³ pb	TWA: 50 µg/m ³ pb	IDLH: 100 mg/m ³ pb

7439-92-1			TWA: 0.05 mg/m ³ pb
Sulfuric Acid 7664-93-9	TWA: 0.2 mg/m ³ thoracic fraction	TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³	IDLH: 15 mg/m ³ TWA: 1 mg/m ³
Tin 7440-31-5	TWA: 2 mg/m ³ Sn except Tin hydride	TWA: 2 mg/m ³ Sn except oxides(vacated) TWA: 2 mg/m ³ Sn except oxides	IDLH: 100 mg/m ³ Sn TWA: 2 mg/m ³ except Tin oxides Sn

8.2 Appropriate engineering controls

Engineering Controls Store and handle batteries in a well ventilated area. If mechanical ventilation is used, components must be acid resistant.

8.3 Individual protection measures, such as personal protective equipment

Eye/Face Protection None needed under normal conditions. If handling damaged or broken batteries use chemical splash goggles or face shield.

Skin and Body Protection None needed under normal conditions. If battery case is damaged use rubber or plastic below length gauntlets. In case of damaged or broken battery use an acid resistant apron. Under severe exposure or emergency conditions wear acid resistant clothing.

Respiratory Protection None needed under normal conditions. If battery is overcharged and concentrations of sulfuric acid are known to exceed PEL use NIOSH or MSH approved respiratory protection.

General Hygiene Considerations Handle batteries carefully to avoid damaging the case. Do not allow metallic articles to contract the battery terminals during handling. Avoid contact with the internal components of the battery.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical State	Solid containing liquid	Odor	Characteristic
Appearance	Battery	Odor Threshold	Not determined

9.2 Property This product is a battery and typical remarks/ Method
Physical/chemical properties do not apply.

pH Not determined
Melting Point/freezing Point Not determined

Boiling Point/Boiling Range	Not determined
Flash Point	Not determined
Evaporation Rate	Not determined
Flammability (Solid, Gas)	Not determined
Upper Flammability Limited	Not determined
Lower Flammability Limited	Not determined
Vapor Pressure	Not determined
Vapor Density	Not determined
Specific Gravity	1.3
Water Solubility	Not determined
Solubility other solvents	Not determined
Partition Coefficient	Not determined
Auto-ignition Temperature	Not determined
Decomposition Temperature	Not determined
Kinematic Viscosity	Not determined
Dynamic Viscosity	Not determined
Explosive Properties	Not determined
Oxidizing Properties	Not determined

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity

Not reactive under normal conditions.

10.2 Chemical Stability

Stable under recommended storage conditions.

10.3 Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization Hazardous Polymerization does not occur.

10.4 Conditions to Avoid

Keep out of reach of children.

10.5 Incompatible Materials

Sulfuric acid: Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide gas, strong oxidizers, and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.

Lead Compounds: Avoid contact with strong acids, bases, halide, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, and reducing agent.

10.5 Hazardous Decomposition Products

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

Lead Compounds: High temperatures above the melting point are likely to produce toxic metal fume, vapor, or dust; contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on likely route of exposure

Product Information

Eye Contact Causes severe eye damage.

Skin Contact Causes severe skin burns.

Inhalation Harmful by inhalation.

Ingestion Harmful if swallowed.

11.2 Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Sulfuric Acid 7664-93-9	=2140 mg/kg (Rat)	-	=510 mg/m ³ (rat) 2h
Tin 7440-31-5	=700 mg/kg (Rat)	-	-

11.3 Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

11.4 Delayed and immediate effect as well as chronic effects from short and long-term exposure

Carcinogenicity The table below indicates whether each has listed any ingredient as a carcinogen. However the product as a whole has not tested. IARC has classified “strong inorganic acid mist containing sulfuric acid” as a category 1 carcinogen, substance that is carcinogenic to humans. This classification does not apply to liquid forms of generated under normal use of this product. Misuse of the product, such as overcharging, may result in the generation of sulfuric acid mist. Hazardous exposure to lead can occur only when product is heated, oxidized, or otherwise processed or damaged to create dust, vapor or fume.

Chemical Name	ACGIH	IARC	NTP	OSHA
Lead 7439-92-1	A3	Group 2A	Reasonably Anticipated	X
Sulfuric Acid 9664-93-9	A2	Group 1	Known	X

Legend

ACGIH(American Conference of Governmental Industrial Hygienists)

A2- Suspected Human Carcinogen

A3- Animal Carcinogen

IARC(International Agency for Research on Cancer)

Group 1 – Carcinogenic to Humans

Group 2A – Probably Carcinogenic to Humans

NTP(National Toxicology Program)

Known- Known Carcinogen

Reasonably Anticipated- Reasonably anticipated to be a Human Carcinogen

OSHA(Occupational Safety and Health Administration of the US Department of Labor)

X – Present

Reproductive toxicity May damage fertility or the unborn child.

STOT- repeated exposure Causes damage to organs through prolonged or repeated exposure.

11.5 Numerical measures of toxicity

Not determined

SECTION 12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Very toxic to aquatic life with long lasting effect.

Chemical Name	Algae/ Aquatic Plants	Fish	Toxicity to Microorganisms	Crustacea
Lead 7439-92-1		0.44: 96h Cyprinus carpio mg/L LC50 semi-static 1.17: 96h Oncorhynchus mykiss mg/L LC50 flow-through 1.32:96h Oncorhynchus mykiss mg/L LC50 static		600:48h water flea µg/L EC50
Sulfuric Acid 7664-93-9		500:96h Brachydanio rerio mg/L LC50 static		29:24h Daphnia magna mg/L EC50

12.2 Persistence/Degradability

Not determined

12.3 Bioaccumulation

Not determined

12.4 Mobility

Not determined

12.5 Others Adverse Effects

Not determined

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

Disposal of Wastes Spent Batteries-send to secondary lead smelter for recycling. Follow applicable federal state and local regulations Neutralize as in preceding step. Collect neutralized material in sealed container and handle as hazardous waste as applicable. A copy of this SDS must be supplied to any scrap dealer or secondary lead smelter with the battery.

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

Chemical RCRA	RCRA	RCRA-Basis for Listing	RCRA-D Series Wastes	RCRA-U Series Wastes
Lead 7439-92-1		Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K069, K086, K100, K176	5.0 mg/L regulatory level	

13.2 California Hazardous Waste Status 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
Lead 7439-92-1	Toxic
Sulfuric Acid 7664-93-9	Toxic Corrosive

SECTION 14. TRANSPORT INFORMATION

14.1 Note SHENG CHANG's nonspillable lead acid batteries are regulated as Class 8 Corrosive hazardous materials/ dangerous goods by the U.S. Department of Transportation(DOT) and international dangerous goods regulations referenced below(i.e., IATA Dangerous Goods Regulations and IMDG Code). However, SHENG CHANG's nonspillable batteries are excepted from these regulations because the batteries meet all of the testing, packing and marking requirements found in the U.S. and international dangerous goods regulations. Therefore, the batteries do not need to be shipped and transported as fully-

regulated Class 8 Corrosive hazardous materials/ dangerous goods when packaged in accordance with these regulations.

14.2 UN number

2800

14.3 DOT

49 CFR 173.159(f) and 49 CFR 173.159a

The batteries have been tested in accordance with the vibration and pressure differential tests found in 49 CFR 173.159(f) and “crack test” found at 49 CFR 173.159a; When offered for transport, the batteries must be protected against short circuits and securely packaged in accordance with 49 CFR 173.159a; and The batteries and outer packaging must be marked NONSPILLABLE BATTERY as required by 49 CFR 173.159a

14.4 IATA

Packing Instruction 872 and Special Provision A67

The batteries have been tested in accordance with the vibration and pressure differential tests found in Packing Instruction 872 and “crack test” found in special Provision international Air Transport Association(IATA) Dangerous Goods Regulations When offered for transport , the batteries must be protected against short circuits and securely packaged in accordance with Special Provision A67

14.5 IMDG

Special Provision 238.1 and 238.2

The batteries have tested in accordance with the vibration and pressure differential tested and “crack test” found in Special Provision 238.1 and 238.2. When offered for transport, the batteries must be protected against short circuits and securely packaged in accordance with Special Provision 238.1 and 238.2.

SECTION 15. REGULATORY INFORMATION

15.1 International Inventories

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Lead	Present	X		Present		Present	X	Present	X	X
Sulfuric Acid	Present	X		Present		Present	X	Present	X	X
Tin	Present	X		Present			X	Present	X	X
Calcium	Present	X		Present			X	Present	X	X

Legend:

TSCA- United State Toxic Substance Control Act Section 8(b) Inventory

DSL/NDSL- Canadian Domestic Substance List/Non-Domestic Substance List

EINECS/ELNCS- European Inventory of Existing Chemical Substance/European List of Notified Chemical Substances

ENCS- Japan Existing and New Chemical Substance

IECSC- China Inventory of Existing Chemical Substance

KECL- Korean Existing and Evaluated Chemical Substance

PICCS- Philippines Inventory of Chemicals and Chemical Substance

AICS- Australian Inventory of Chemical Substance

15.2 US Federal Regulations

15.2.1 CERCLA

Chemical Name	Hazardous Substance RQs	CERCLA/SARA RQ	Reportable Quantity(RQ)
Lead 7439-92-1	10 lb		RQ 10lb final RQ RQ 4.54 kg final RQ
Sulfuric Acid 7664-93-9	1000 lb	1000 lb	RQ 100 lb final RQ RQ 454 kg final RQ

15.2.2 SARA 313

Section 313 of Title 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%
Lead 7449-92-1	7449-92-1	65-75	0.1
Sulfuric Acid 7664-93-9	7664-93-9	14-20	1.0

15.2.3 CWA(Clean Water Act)

Chemical Name	CWA-Reportable Quantities	CWA-Toxic Pollutants	CWA-Priority Pollutants	CWA-Hazardous Substance
Lead		X	X	
Sulfuric Acid	1000 lb			X

15.3 US State Regulations

15.3.1 California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Lead 7439-92-1	Carcinogen Developmental Female Reproductive Male Reproductive
Sulfuric Acid 7664-93-9	Carcinogen

15.3.2 U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Lead 7439-92-1	X	X	X
Sulfuric Acid 7664-93-9	X	X	X
Tin 7440-31-5	X	X	X
Calcium 7440-70-2	X	X	X

SECTION 16. OTHERS INFORMATION

NFPA	Health Hazards	Flammability	Instability	Special Hazards
	3	0	2	-
HMIS	Health Hazards	Flammability	Instability	Special Hazards
	Not determined	Not determined	Not determined	Not determined

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of it's publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

The information provided is true and correct under penalty of perjury of the law