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## Safety Data Sheet

Version 1

### SECTION 1. IDENTIFICATION

#### 1.1 Product Identifier

**Product Name** LEAD-ACID BATTERIES

#### 1.2 Other means of identification

**SDS#** SCB-001

#### 1.3 Recommended use of the chemical and restrictions on use

**Recommended Use** Battery

#### 1.4 Details of the supplier of the safety data sheet

**SHENG CHANG TECH CO., LTD**

Lot I-1A-CN, My Phuoc 2 IP, My Phuoc ward, Ben Cat Town, Binh Duong Province, Vietnam

### SECTION 2. HAZARDS IDENTIFICATION

**2.1 EMERGENCY OVERVIEW:** This product is a nonspillable lead acid battery. The information below is intended for repeated and prolonged contact with the battery contents in an occupational setting. In the absence of an incident or accident, it is not likely to apply to normal product use. However, this Safety Data Sheet (SDS) contains valuable information critical to the safe handling and proper use of this product. This SDS should be retained and available for employees and other users of this product. Always be aware of the risk of fire, explosion, or burns. Do not short circuit the (+) and (-) terminals with any other metals. Do not disassemble or modify the battery. Do not solder a battery directly. Keep away from fire or open flame.

**Appearance** Battery      **Physical State** Solid containing liquid      **Odor** Characteristic

#### 2.2 Classification

This product is a battery, the classification below is based on the battery acid contained in the battery, which would only be released during an incident.

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 "Proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been 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. FIRST-AID MEASURES****4.1 First Aid Measure**

<b>General Advice</b>	Immediately call a poison center or doctor/physician. Provide this SDS to medical personnel for treatment.
<b>Eye Contact</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>Skin Contact</b>	If ON SKIN(or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
<b>Inhalation</b>	If INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
<b>Ingestion</b>	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 7439-92-1	TWA: 0.05 mg/m <sup>3</sup> pb	TWA: 50 µg/m <sup>3</sup> pb	IDLH: 100 mg/m <sup>3</sup> pb TWA: 0.05 mg/m <sup>3</sup> pb
Sulfuric Acid 7664-93-9	TWA: 0.2 mg/m <sup>3</sup> thoracic fraction	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 15 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>
Tin 7440-31-5	TWA: 2 mg/m <sup>3</sup> Sn except Tin hydride	TWA: 2 mg/m <sup>3</sup> Sn except oxides(vacated) TWA: 2 mg/m <sup>3</sup> Sn except oxides	IDLH: 100 mg/m <sup>3</sup> Sn TWA: 2 mg/m <sup>3</sup> 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**

<b>Physical State</b>	Solid containing liquid		
<b>Appearance</b>	Battery	<b>Odor</b>	Characteristic
<b>Color</b>	Not determined	<b>Odor Threshold</b>	Not determined

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

<b>pH</b>	Not determined
<b>Melting Point/freezing Point</b>	Not determined
<b>Boiling Point/Boiling Range</b>	Not determined
<b>Flash Point</b>	Not determined
<b>Evaporation Rate</b>	Not determined
<b>Flammability (Solid, Gas)</b>	Not determined
<b>Upper Flammability Limited</b>	Not determined
<b>Lower Flammability Limited</b>	Not determined

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<b>Vapor Pressure</b>	Not determined
<b>Vapor Density</b>	Not determined
<b>Specific Gravity</b>	1.3
<b>Water Solubility</b>	Not determined
<b>Solubility other solvents</b>	Not determined
<b>Partition Coefficient</b>	Not determined
<b>Auto-ignition Temperature</b>	Not determined
<b>Decomposition Temperature</b>	Not determined
<b>Kinematic Viscosity</b>	Not determined
<b>Dynamic Viscosity</b>	Not determined
<b>Explosive Properties</b>	Not determined
<b>Oxidizing Properties</b>	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

<b>Eye Contact</b>	Causes severe eye damage.
<b>Skin Contact</b>	Causes severe skin burns.
<b>Inhalation</b>	Harmful by inhalation.
<b>Ingestion</b>	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 <sup>3</sup> (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

Issued Date: Feb.03.2020

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its 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**