

## 1. IDENTIFICATION

### Product Identifier

**Product Name** Sealed lead acid battery (VRLA BATTERY)

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

**Recommended Use** It is used for solar energy storage, uninterrupted power supply, communication equipment supply, etc.  
Restrictions on use: Do NOT use it in an application which may contaminate food or do harm to human health.

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

**Manufacturer:** JYC Battery Manufacturer Co.,Ltd.

**Address:** JYC Industrial Park,WengCheng Town,ShaoGuan  
City,GuangDong,Province.China.

Tel.: +86-20 23355707 Email: sales@jycbattery.cn


**Emergency Contact :** +86-18676290933 Vickie Wong

## 2. HAZARDS IDENTIFICATION


Classification of the substance or mixture according to Regulation (EC) No 1272/2008 [CLP/GHS]

Material is an article. No health effects are expected during normal use of this product as sold. Hazardous exposure may occur when the product is heated, oxidized or otherwise processed, damaged or subjected to misuse. Follow manufacturer's instructions for installation, service and use.

### Health


GHS code	Hazard class/category		Hazard statements	2008/98/EC code	Labels
H302	Acute Toxicity (Oral)	Category 4	Harmful if swallowed	HP 6	
H314	Skin corrosion	Category 1A	Causes severe skin burns and eye damage	HP 8	
H335	Specific target organ toxicity, single exposure, Respiratory tract irritation	Category 3	Might cause respiratory irritation	HP5	
H361	Reproductive toxicity	Category 2	Suspected damaging of fertility or the unborn child	HP 10	

### Environment

GHS code	Hazard class/category		Hazard statements	2008/98/EC code	Labels
H 411	Hazardous to the aquatic environment, acute hazard	Category 2	Toxicity to aquatic life with long lasting effect	HP 14	

### Physical

Under abnormal use in not ventilated rooms may form explosive air/gas mixture during charging or when extreme overcharging / Extremely flammable gas (hydrogen) / Explosive, fire, blast or projection hazard.

GHS code	Hazard class/category		Hazard statements	2008/98/EC code	Labels
H203	Explosives	Division 1.3	Explosive; fire, blast or projection hazard	N/A	



# Safety Data Sheet

## 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  
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

## Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician for 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

## Precautionary Statements - Storage

Store locked up

## Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

## Other Hazards

Very toxic to aquatic life with long lasting effects

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	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 JYC Battery Manufacturer Co.,Ltd. Other ingredients may be present dependent upon the specific battery type. For additional information contact JYC Battery Corporation Technical Department.

### 4. FIRST-AID MEASURES

#### First Aid Measures

**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.

<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.

### Most important symptoms and effects

<b>Symptoms</b>	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.
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### Indication of any immediate medical attention and special treatment needed

<b>Notes to Physician</b>	Treat symptomatically.
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## 5. FIRE-FIGHTING MEASURES

### Suitable Extinguishing Media

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

**Unsuitable Extinguishing Media** Not determined.

### Specific Hazards Arising from the Chemical

Not determined.

**Hazardous Combustion Products** 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.

### 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.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions** Use personal protective equipment as required.

### 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 material, contain/absorb all spills 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.

**Methods 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.

**7. HANDLING AND STORAGE**

**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 high power density, high levels of short circuit current can be developed across the battery terminals. Do not rest tools or cables on the battery. Use insulated tools only. Follow all installation instructions and diagrams when installing or maintaining battery systems.

**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 activities 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 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, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, and reducing agents.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**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: 0.050 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

**Appropriate engineering controls**

**Engineering Controls**

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

**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 elbow 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 required 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 contact the battery terminals during handling. Avoid contact with the internal components of the battery.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

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

### Property

**This product is a battery and typical physical/chemical properties do not apply.** **Remarks • Method**

<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 Limits</b>	Not determined
<b>Lower Flammability Limit</b>	Not determined
<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 in 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

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive under normal conditions.

### Chemical Stability

Stable under recommended storage conditions.

### Possibility of Hazardous Reactions

None under normal processing.

**Hazardous Polymerization** Hazardous polymerization does not occur.

### Conditions to Avoid

Keep out of reach of children.

## 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, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, and reducing agents.

## Hazardous Decomposition Products

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.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### Product Information

**Eye Contact** Causes severe eye damage.

**Skin Contact** Causes severe skin burns.

**Inhalation** Harmful by inhalation.

**Ingestion** Harmful if swallowed.

### 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 ) 2 h
Tin 7440-31-5	= 700 mg/kg ( Rat )	-	-

### Information on physical, chemical and toxicological effects

**Symptoms** Please see section 4 of this SDS for symptoms.

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

#### Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen. However, the product as a whole has not been 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 sulfuric acid or sulfuric acid solutions contained within a battery. Inorganic acid mist is not 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 7664-93-9	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



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**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.

**Numerical measures of toxicity**

Not determined

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

Very toxic to aquatic life with long lasting effects.

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

**Persistence/Degradability**

Not determined.

**Bioaccumulation**

Not determined.

**Mobility**

Not determined

**Other Adverse Effects**

Not determined

## 13. DISPOSAL CONSIDERATIONS

**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 Packaging**

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

Chemical Name	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	



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**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

## 14. TRANSPORT INFORMATION

### Note

Sealed 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, JYC nonspillable VRLA batteries are exempted from these regulations because the batteries meet all of the testing, packaging 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.

### UN Number

2800

### 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.

### 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 A67 of the 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.

### IMDG

Special Provision 238.1 and 238.2

The batteries have been tested in accordance with the vibration and pressure differential tests 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.

## 15. REGULATORY INFORMATION

### 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





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**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
- IECSC - 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**

**CERCLA**

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

**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 %
Lead - 7439-92-1	7439-92-1	65-75	0.1
Sulfuric Acid - 7664-93-9	7664-93-9	14-20	1.0

**CWA (Clean Water Act)**

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

**US State Regulations**

**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

**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



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## 16. OTHER INFORMATION

**NFPA**

**Health Hazards**

3

**Flammability**

0

**Instability**

2

**Special Hazards**

-

**HMIS**

**Health Hazards**

Not determined

**Flammability**

Not determined

**Physical Hazards**

Not determined

**Personal Protection**

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 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**