

Material Safety Data Sheet

Issuing Date No data available Revision Date 1-Jan-2019 valid Date 31-Dec-2019 Revision Number 5

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name VALVE-REGULATED SEALED LEAD-ACID BATTERY

Recommended Use

Supplier Address

Kaiying Power Supply & Electrical Equip Co.Ltd.
Kaiying Industrial Area, Chengxiang Town, Anxi,
Quanzhou, Fujian Province, China
362400
CN
Phone: 86-595-68782235
Contact: Eve Hu
Email: sales5@longwaybattery.com
Contact TEL: 86-595-68782235

2. HAZARDS IDENTIFICATION

Emergency Overview

NOTE: Under normal conditions of battery use, internal components will not present a health hazard.

The following information is provided for battery acid and lead exposure that may occur during battery production or container break age or under extreme heat conditions such as fire. In case of rupture: Corrosive. The product causes burns of eyes, skin and mucous membranes.

Appearance Black

Physical State Bonded, fibrous glass web,
Solid.

Odor None

Potential Health Effects

Principle Routes of Exposure

Skin contact.

Acute Toxicity

Eyes

Corrosive to the eyes and may cause severe damage including blindness.

Skin

Causes burns.

Inhalation

Harmful by inhalation. Contact with moist mucous membranes of the respiratory system can cause caustic condition resulting in burns.

Ingestion

Harmful if swallowed. Can burn mouth, throat, and stomach.

Chronic Effects

Lead compounds may be absorbed by ingestion, by inhalation and through the skin. Lead may damage kidney function, the blood forming system and the reproductive system. Avoid repeated exposure.

Main Symptoms

Severe exposures can lead to shock, circulatory collapse, and death. Lead poisoning is characterized by a metallic taste in the mouth, loss of appetite, indigestion, nausea, vomiting, constipation, sleep disturbances and overall weakness.

Aggravated Medical Conditions

None known.



Environmental Hazard

See Section 12 for additional Ecological Information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | Weight % | CAS No | Air Exposure Limits($\mu\text{g}/\text{m}^3$) | | | LD50 ORAL (mg/kg) |
|---------------|----------|-----------|-------------------------------------------------|------|-------|-------------------|
| | | | ACGIH TLV | OSHA | NIOSH | |
| Lead | 60-100 | 7439-92-1 | 150 | 30 | 10 | 500 |
| Sulfuric acid | 15-40 | 7664-93-9 | 1000 | 1000 | 1000 | 2.14 |

4. FIRST AID MEASURES

| | |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General Advice | First aid is upon rupture of sealed battery. |
| Eye Contact | Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. |
| Skin Contact | Immediate medical attention is required. Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. |
| Inhalation | Move to fresh air. Call a physician or Poison Control Center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. |
| Ingestion | Immediate medical attention is required. Call a physician or Poison Control Center immediately. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Remove from exposure, lie down. |
| Notes to Physician | Treat symptomatically. |
| Protection of First-aiders | Use personal protective equipment. Avoid contact with skin, eyes and clothing. |

5. FIRE-FIGHTING MEASURES

| | |
|----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flammable Properties | Not flammable. |
| Flash Point | Not determined. |
| Suitable Extinguishing Media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Uniform Fire Code | <ul style="list-style-type: none"> • Corrosive: Acid-Liquid • Toxic: Solid |
| Hazardous Combustion Products | Hazardous metal fumes and oxides. |
| Explosion Data | |
| Sensitivity to Mechanical Impact | No. |
| Sensitivity to Static Discharge | No. |
| Specific Hazards Arising from the Chemical | The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes. |
| 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. | |



| | | | | |
|-------------|------------------------|-----------------------|--------------------|----------------------------------------|
| NFPA | Health Hazard 3 | Flammability 0 | Stability 2 | Physical and Chemical Hazards - |
|-------------|------------------------|-----------------------|--------------------|----------------------------------------|

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Personal Precautions | Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Do not get in eyes, on skin, or on clothing. |
| Environmental Precautions | Refer to protective measures listed in Sections 7 and 8. |
| Methods for Containment | Prevent further leakage or spillage if safe to do so. |
| Methods for Cleaning Up | In case of rupture: Use personal protective equipment. Dam up. Soak up with inert absorbent material. Take up mechanically and collect in suitable container for disposal. Clean contaminated surface thoroughly. |
| Other Information | Refer to protective measures listed in Sections 7 and 8. |

7. HANDLING AND STORAGE

| | |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Handling | In case of rupture: Wear personal protective equipment. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. |
| Storage | Keep containers tightly closed in a dry, cool and well-ventilated place. |

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|----------------------------|----------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| Lead 7439-92-1 | TWA: 0.05 mg/m ³ | TWA: 50 Åµg/m ³ Action Level: 30 Åµg/m ³ Poison, See 29 CFR 1910.1025 | IDLH: 100 mg/m ³ TWA: 0.050 mg/m ³ |
| 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 |

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value. OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits. NIOSH IDLH: Immediately Dangerous to Life or Health.

| | |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Other Exposure Guidelines | Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d962 (11th Cir., 1992). |
| Engineering Measures | Showers Eyewash stations Ventilation systems |
| Personal Protective Equipment | |
| Eye/Face Protection | Tightly fitting safety goggles. |
| Skin and Body Protection | Wear protective gloves/clothing. |
| Respiratory Protection | No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. |
| Hygiene Measures | Handle in accordance with good industrial hygiene and safety practice. |



9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-----------------------------------|---------------------------|-----------------------------------------------|---------------------------------|
| Appearance | Black. | Odor | None. |
| Odor Threshold | No information available | Physical State | Bonded, fibrous glass web Solid |
| pH | No information available | | |
| Flash Point | No information available. | Autoignition Temperature | No information available |
| Decomposition Temperature | No information available | Boiling Point/Range | No information available |
| Melting Point/Range | No information available | | |
| Flammability Limits in Air | No information available | Explosion Limits | No information available |
| Water Solubility | Immiscible in water | Solubility | No information available |
| Evaporation Rate | No information available | Vapor Pressure | No data available |
| Vapor Density | No data available | Partition Coefficient: n-octanol/water | |

10. STABILITY AND REACTIVITY

| | |
|-----------------------------------------|-------------------------------------------------------------------------------|
| Stability | Stable under recommended storage conditions. |
| Incompatible Products | Incompatible with strong acids and bases. Incompatible with oxidizing agents. |
| Conditions to Avoid | Exposure to air or moisture over prolonged periods. |
| Hazardous Decomposition Products | Thermal decomposition can lead to release of toxic/corrosive gases and vapors |
| Hazardous Polymerization | Hazardous polymerization does not occur. |

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

| | |
|-------------------------------------|-------------------------------------------------------|
| Product Information | In case of rupture: |
| LD50 Oral VALUE | 8699.186 mg/kg (rat) estimated |
| LC50 Inhalation (DUST) VALUE | 4.1463 mg/L (mist) (dust) mg/m ³ estimated |

Chronic Toxicity

| | |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chronic Toxicity | Lead compounds may be absorbed by ingestion, by inhalation and through the skin. Lead may damage kidney function, the blood forming system and the reproductive system. Avoid repeated exposure. |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Chemical Name | ACGIH | IARC | NTP | OSHA |
|---------------|-------|----------|------------------------|------|
| Lead | A3 | Group 2A | Reasonably Anticipated | X |
| Sulfuric acid | A2 | Group 1 | Known | X |

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

Group 3 - Not Classifiable as to Carcinogenicity in Humans

NTP: (National Toxicity Program)

Known - Known Carcinogen

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen



OSHA: (Occupational Safety & Health Administration)

| | |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reproductive Toxicity | Product is or contains a chemical which is a known or suspected reproductive hazard. |
| Developmental Toxicity | Contains ingredients that have suspected developmental hazards |
| Target Organ Effects | Blood. Reproductive system. Damage to fetus possible Central nervous system (CNS). Eyes. Gastrointestinal tract (GI). Gingival Tissue. Kidney. Respiratory system. Skin. Teeth. |

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Harmful to aquatic organisms. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

| Chemical Name | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Daphnia Magna (Water Flea) |
|---------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-------------------------------------|
| Lead | | LC50: 0.44 mg/L (96 h semi-static) Cyprinus carpio LC50: 1.17 mg/L (96 h flow-through) Oncorhynchus mykiss LC50: 1.32 mg/L (96 h static) Oncorhynchus mykiss | | EC50: 600 µg/L (48 h) water flea |
| Sulfuric acid | | LC50: > 500 mg/L (96 h static) Brachydanio rerio | | EC50: 29 mg/L (24 h) Daphnia magna |

13. DISPOSAL CONSIDERATIONS

| | |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Waste Disposal Methods | This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261). Should not be released into the environment. |
| Contaminated Packaging | Do not re-use empty containers. |
| US EPA Waste Number | D002 D008 |

| Chemical Name | RCRA | RCRA - Basis for Listing | RCRA - D Series Wastes | RCRA - U Series Wastes |
|------------------|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------------------|
| Lead - 7439-92-1 | (hazardous constituent - no waste number) | Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K064, K065, K066, K069, K086, K100, K176 | = 5.0 mg/L regulatory level | |

California Hazardous Waste Codes 792

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

| Chemical Name | California EHW | California Carc | California Hazardous Waste | California Waste - Part 2 |
|---------------|----------------|-----------------|----------------------------|----------------------------------|
| Lead | | | Toxic | TCLP (for CA Toxicity): 5.0 mg/L |
| Sulfuric acid | | | Toxic Corrosive | |



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 | 60-100 | 0.1 |
| Sulfuric acid | 7664-93-9 | 15-40 | 1.0 |

SARA 311/312 Hazard Categories

| | |
|-----------------------------------|-----|
| Acute Health Hazard | Yes |
| Chronic Health Hazard | Yes |
| Fire Hazard | No |
| Sudden Release of Pressure Hazard | No |
| Reactive Hazard | No |

Clean Water Act

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

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

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product contains the following substances which are listed hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act:

| Chemical Name | CAS-No | Weight % | HAPS data | VOC Chemicals | Class 1 Ozone Depletors | Class 2 Ozone Depletors |
|---------------|-----------|----------|-----------|---------------|-------------------------|-------------------------|
| Lead | 7439-92-1 | 60-100 | | | | |

CERCLA

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

| Chemical Name | Hazardous Substances RQs | Extremely Hazardous Substances RQs |
|---------------|--------------------------|------------------------------------|
| Lead | 10 lb | |
| Sulfuric acid | 1000 lb | 1000 lb |

U.S. State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals:

| Chemical Name | CAS-No | California Prop. 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 | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---------------|---------------|------------|--------------|----------|--------------|
| Lead | X | X | X | X | X |
| Copper | X | X | X | X | X |
| Calcium | X | X | X | | |
| Sulfuric acid | X | X | X | X | X |

International Regulations

Mexico - Grade

Minimum risk, Grade 0



| Chemical Name | Carcinogen Status | Exposure Limits |
|---------------|-------------------|-------------------------------------------------------------------------------------------------------------|
| Lead | A3 | Mexico: TWA= 0.15 mg/m ³ |
| Copper | | Mexico: TWA= 1 mg/m ³ Mexico: TWA= 0.2 mg/m ³ Mexico: STEL= 2 mg/m ³ |
| Sulfuric acid | A2 | Mexico: TWA 1 mg/m ³ |

Canada

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 CPR.

WHMIS Hazard Class

D2A Very toxic materials

E Corrosive material

D1B Toxic materials



| Chemical Name | NPRI |
|---------------|------|
| Lead | X |
| Sulfuric acid | X |

Legend

NPRI - National Pollutant Release Inventory

16. OTHER INFORMATION

Proper Shipping Name: BATTERIES, WET NON-SPILLABLE ELECTRIC STORAGE

UN Number: UN2800

Hazard Class: Class 8

Packing Group: II

Prepared By (LONGWAY battery)Kaiying Power Supply & Electrical Equip Co., Ltd

Kaiying Industrial Area, Chengxiang Town ,Anxi, Quanzhou, Fujian Province ,China

Revision Date 1-Jan-2019

Revision Note No information available

General 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

