# Safety Data Sheet (SDS)

Section 1: Identification

Chemical Product name: Traction lead-acid battery Recommended use: Power supply Company name: Huainan TongBa Storage Battery CO.,LTD Address: Anhui Huainan xiejiaji District Industrial park China. Phone number: +86 554 86655161 Emergency phone number: +86 554 6655161

Section 2: Hazard identification

**Acute hazard:** Do not open the battery and avoid touching internal components. The internal components contain lead and electrolyte. The electrolyte is corrosive and touching it can cause skin pain and chemical burns. Electrolyte - causes severe pain and burns to the eyes, nose and throat. If ingested, it can cause severe burns and vomiting. Lead - direct contact with the skin or eyes can cause local pain. Dusts or mists inhaled or ingested with lead can cause headaches, nausea, vomiting, abdominal cramps, fatigue, sleep disorders, wasting, anemia, and leg, arm, and joint pain.

**Sub-chronic and chronic health effects:** Electrolyte - repeated contact with the electrolyte of a sulfuric acid battery can result in dry skin and eventually pain, dermatitis and skin burns. Repeated exposure to sulfuric acid mist can lead to tooth decay, chronic eye pain and/or chronic nose, throat and lung inflammation. Lead - long-term exposure can lead to central nervous system damage, gastrointestinal disorders, anemia, carpal tunnel syndrome, and kidney dysfunction. Pregnant women should avoid excessive exposure and prevent lead from crossing the placental barrier and causing neurological disorders in infants.

**Warning**: the battery's poles, terminals and related accessories contain lead and lead compounds, which are believed to cause cancer and harm reproductive health, produce an inorganic acid mist with sulfuric acid when charging, and wash your hands after handling.

**Medical conditions where exposure usually worsens:** if the battery is damaged or material spills out of it, people with symptoms of the following diseases must take precautions: pulmonary edema, bronchitis, emphysema, tooth erosion and tracheobronchitis.

**Entry mode:** Inhalation; Intake; Eye contact; Skin contact.

# Section 3: Composition/information on ingredients

#### Mixture

Ingredient	CAS No.	Composition
		(In % by weight)
Lead	7439-92-1	46.5%
Lead dioxide	1309-60-0	22.2%
Sulfuric acid	7664-93-9	9.4%
Polypropylene	9003-07-0	4.4%
Tin	7440-31-5	1.2%
Water	7732-18-5	15.6%

## Section 4: First-aid measures

#### Description of first aid measures

- Emergency and first aid procedures: If the battery is opened, damaged or spilled, so the person contacts the internal components.
- Inhalation: transfer to a place with fresh air and supply medical oxygen when needed. Ask for medical assistance.
- Skin: rinse the contact area with plenty of water for at least 15 minutes.Remove contaminated clothing and request medical assistance when needed.
- Eye: immediately wash your eyes with water for at least 15 minutes, keeping your eyelids open. Ask for medical assistance.
- Ingestion: to induce vomiting. Drink plenty of water/milk if you are conscious.Ask for medical assistance. Do not pour anything into the stupor through the mouth.

# Section 5: Fire-fighting measures

		Flammable limit as a	
Fuel point	NA	percentage of air	H2 Lower limit 4.1%
		volume (In	upper limit 74.2%
		charging)	
Extinguishing media	Type ABC、CO2、 halide	autoignition temp.	polypropylene 675°F

Special fire extinguishing measures: lead acid batteries will not burn, or very difficult to burn.Do not use water to extinguish fire in the presence of molten metal. Extinguish fire with chemicals suitable for surrounding burning materials. If exposed to fire, cool the outer surface of the battery to avoid rupture. Fog and steam produced by heat or combustion are corrosive.

Abnormal fire and explosion hazards: excessive charging and breakage of polypropylene shells can produce hydrogen and sulfuric acid vapors. Hydrogen is flammable or explosive when mixed with air, oxygen or chlorine. Avoid open flame/spark/other sources near the battery. To avoid the risk of fire or explosion, keep the spark or other source away from the battery and do not allow the metal to contact both the anode and the cathode of the battery at the same time.Sulfuric acid reacts violently with water/organics.

#### Section 6: Accidental release measures

- Cleaning step: stop leakage if possible. Avoid contact with any overflow material. Put the spill into the container and isolate the danger area to prevent it from entering. Only emergency personnel are allowed. Neutralize with sodium bicarbonate, alkali powder, lime or other neutralizer. Place the battery in a suitable container for disposal. Dispose of contaminated material in accordance with applicable local regulations. There should be sodium bicarbonate, alkali powder, sand, lime or other neutralizer to neutralize the spill.
- Personal protective measures: acid proof work skirts, boots and protective clothing. Goggles, preferably with side/face guard. Ventilation the enclosed area.
- Environmental protection: lead and its compounds and sulphuric acid may pose a serious environmental threat. Avoid polluting water, soil and air.

## Section 7: Handling and storage

- Handling and storage: keep away from fire during and after charging. Burning or overcharging produces or releases toxic and harmful gases and liquids, including hydrogen, sulfuric acid fog, sulfur dioxide, sulfur trioxide, antimonial, arsenate and sulfuric acid. Store the battery in a cool, dry, well-ventilated area. Do not short circuit the battery terminal or remove the ventilator bolt while storing or recharging. Protect the battery from physical damage.
- Other precautions: good personal hygiene and work habits must be maintained.No eating or smoking in the workplace. Wash your hands, face, neck and arms thoroughly before eating or smoking. Wash the dirty clothes before you wear them. Empty batteries contain harmful acid residues.

## Section 8: Exposure controls/personal protection

**Occupational exposure limits** 

CAS#	ACGIH(mg/m <sup>3</sup> )	NIOSH (mg/m <sup>3</sup> )	OSHA(mg/m <sup>3</sup> )	
7439-92-1	TLV-TWA 0.05	REL-TWA 0.05	PEL-TWA 0.05	
1309-60-0	N/A TLV-	N/A	N/A	
7664-93-9	TWA 0.2 (thoracic)	REL-TWA 1	PEL-TWA 1	
7440-36-0	TLV-TWA 0.5	REL-TWA 0.5	PEL-TWA 0.5	

Appropriate engineering controls: ventilation must be done every 15 minutes when charging in closed Spaces, recommended as general mechanical ventilation for fixed applications.

Personal protective equipment:

- > Eyes Protection: Goggles with side/face panels are recommended.
- Respiratory Protection: Wear appropriate breathing apparatus. A full face positive pressure supplied-air respirator or a self contained breathing apparatus should be used when large spilled or fire.
- Hand Protection: When pouring electrolyte into a battery, wear rubber or plastic acidproof gloves that extend the length of the armguard to the elbow.
- > Other protective clothing or equipment: acid proof rubber or plastic aprons, boots and protective clothing. Safe shower and eye bath.

# Section 9: Physical and chemical properties

Physical State: Battery: polypropylene or hard rubber case, solid. Lead: grey solid metal. Electrolyte: colorless oily liquid.

Color: Black

Odor: It smells stink when battery gets hot or you charge the battery.

Odor threshold: N/A

pH: < 2 (Electrolyte)

Melting range: N/A

Freezing Point: N/A

Boiling Point: N/A

Flash Point: ≈235°F (Electrolyte)

Explosive limits, vol% in air: N/A

Vapor Pressure: 1mmHg@145.8°F (Electrolyte)

Vapor Density (Air=1): H<sub>2</sub>0.069; Electrolyte 3.4

Relative density of the vapour/air-mixture at 20  $^\circ\!\!\!\!\!^\circ$  (air=1):N/A

Density(H<sub>2</sub>0 = 1): 1.250 - 1.320 (Electrolyte)

Solubility: dissolve completely (Electrolyte)

Octanol/water partition coefficient as log Pow: N/A

Auto-ignition Temperature: N/A

Decomposition temperature: N/A Evaporation rate: N/A Viscosity: N/A Particle characteristics: N/A Flammability (solid, gas): N/A

# Section 10: Stability and reactivity

Chemical stability: Stable under normal storage and handling conditions.

Conditions to Avoid: High temperature. Avoid overcharging, rapid overcharging, and avoid smoke or sparks near the battery.

Incompatibilities materials: Strong acids, strong oxidizers, strong alkali, conductive material, ect.

Harmful polymerization: polymerization does not occur.

Section 11 – Toxicological information

Acute toxicity:

CAS No.	LD50/LC50	
7439-92-1	No data available	
1309-60-0	No data available	
	LD50=2140mg/kg(Rat, Oral)	
7664-93-9	LC50=0.375mg/L (Rat, Inhalation: mists (1-hour	
	exposure))	
7440-36-0	LD50 =7,000mg/kg (Rat, Oral)	
7440-31-5	No data available	
7440-38-2	LD50=763 mg/kg (Rat, Oral)	

Routine: the main route of exposure to lead is ingestion or inhalation of dust fumes. Acute:

Ingestion/inhalation: exposure to lead and its compounds can lead to headaches, nausea, vomiting, abdominal cramps, fatigue, sleep disorders, wasting, anemia, and leg, arm, and joint pain.Acute exposure can lead to kidney damage and anemia. Chronic:

Inhalation/ingestion: long-term exposure to lead and its compounds causes many symptoms of short-term exposure, as well as central nervous system damage, gastrointestinal disorders, anemia, and carpal attrition. Symptoms of central nervous system injuries include fatigue, headache, jitter, high blood pressure, hallucinations, convulsions and psychosis. Kidney dysfunction and possible injuries are also linked to chronic lead poisoning. Chronic consequences of excessive exposure to lead-based environments may impair the ability of men and women to reproduce, but such damage has not yet been demonstrated. Pregnant women should avoid excessive exposure to lead. Lead can penetrate the placental barrier, exposing unborn children to nerve damage or developmental disabilities as a result of excessive exposure to lead in pregnant women.

## Section 12 - Ecological information

In most surface waters and groundwater, lead binds to anions (such as hydroxide ions, carbonate ions, sulfate ions, and phosphate ions) to form compounds that are precipitated from water. Lead may appear in the form of absorbed ions or surface layers on precipitated mineral particles, or it may be carried in surface water in the form of colloidal particles. Most lead remains firmly in the soil and is therefore mobile. Lead can be immobilized by ion exchange with hydrated oxides and clays, or by cooperation with humus or brown acid chelates in the soil. Lead (in solution) can be enriched by aquatic or terrestrial plant and animal life.

Section 13 - Disposal considerations

Disposal should be in accordance with applicable regional, national and local laws and regulations. Lead acid batteries can be completely recycled. Please return used batteries to distributors, manufacturers or lead plants for recycling. Please call us for information about returning the battery to our company for recycling. Neutralized residue should be placed in an acid proof container together with the adsorbent or sand and treated according to local regulations on acid and lead compounds. Instructions for handling, storage and worker protection please refer to section 7 for handling and handling and section 8 for contact control/personal protection.

## Section 14 - Transport information

Air transport (ICAO-IATA/DGR ) UN Number: 2794 UN Proper Shipping Name: Battery, wet, contains acid Transport hazard class: 8 Subsidiary risk: N/A

#### Packaging group: III

Sea transport (IMO IMDG CODE) UN Number: 2794 UN Proper Shipping Name: Battery, wet, contains acid Transport hazard class: 8 Subsidiary risk: N/A Packaging group: III

# Section 15: Regulatory information

Regulatory information: refer to local, domestic, EU, international regulations. Danger sign: Xn-harmful; T-toxic; C-corrosion products; N-Environmental pollutant

Section 16 – Other information

#### Issue Time: 2021-3-1

The information in this SDS is compiled based on the information of the relevant materials we currently have, only for the purpose of describing the health, safety and environmental requirements of this product, so that the parties concerned can better understand and trust this product. This information is provided only to you for consideration, research and validation. Some of these descriptions are not unique. Therefore, this SDS cannot be used as a guarantee to achieve any specific purpose. It is the responsibility of all users concerned to complete the safety and other tests of the product in advance to judge whether it meets your purpose.

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