



MATERIAL SAFETY DATA SHEET

VALVE REGULATED LEAD ACID BATTERY

Form No.: MSDS20250105
Revision Date: January 1st, 2025

SECTION1: PRODUCT AND COMPANY IDENTIFICATION

Product Information:

Product name: VRLA BATTERY 6-DZF-20
Product Model: 6-DZF-20
Product Specification: 12V20AH
Product Application: Electric Vehicles

Company Information:

Company Name: SHENZHEN CHAOWEI RENEWABLE ENERGY CO., LTD
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SECTION2: INFORMATION ON INGREDIENTS

Chemical Name	Percent of Content	CAS No.	EC No.
Lead(Pb,PbO ₂ ,PbSO ₄)	70%	7439-92-1	231-100-4
Sulfuric Acid	20%	7664-93-9	231-639-5
Fiberglass Separator	5%	/	/
ABS or PP	5%	9003-56-9/9003-07-0	618-371-8/618-352-4

SECTION3: HAZARDS IDENTIFICATION

The product is outside of the scope of GHS system

- **Main Hazards:**

- **Fire or Explosion Hazard:**

May decompose when heated and generate corrosive and/or toxic fumes.

- **Health Hazards :**

The internal battery materials are corrosive to the eyes, skin , mucous membranes and upper respiratory tract,Cause burns. Avoid directly contact with the internal battery ,Prevent inhalation.

- **Environmental Hazards :**

The internal battery materials may be harmful to the environment, and attention should be paid to water bodies.

SECTION4: FIRST-AID MEASURES

- **Skin Exposure:**

If the internal battery's materials of an opened battery cell come into contact with the skin, remove the contaminated clothing and footwear, immediately flush with plenty of water for at least 20 minutes.

Call a physician.

- **Eye Exposure :**

In case of the internal battery's materials in contact with eyes, lift your eyelids immediately and rinse them with running water for more than 20 minutes. Call a physician.

- **Inhalation Exposure:**

If inhaled the internal battery's materials, immediately remove to fresh air. If breathing is difficult, give oxygen, If not breathing, give artificial respiration. Call a physician.

- **Oral Exposure:**

If swallowed the internal battery's materials, do not induce vomiting. If the staff is awake, drink enough warm water or milk. Call a physician.

SECTION5: FIRE FIGHTING MEASURES

- **Suitable Extinguishing Media:**

Suitable: Dry chemical, Sandy soil, Carbon dioxide or appropriate foam.

- **Specific Hazards Arising from the Chemical :**

May decompose upon combustion to generate irritating, corrosive or toxic fumes when heated.

- **Special Protective Action for Fire-fighters:**

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Fire-extinguishing work is done from the windward. Uninvolved persons should evacuate to a safe place.

SECTION6: ACCIDENTAL RELEASE MEASURES

- **Personal Precautions, Protective Equipment and Emergency Procedures:**

Use personal protective equipment. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Entry to noninvolved personnel should be controlled around the leakage area by roping off. Remove all sources of ignition.

- **Environmental Precautions:**

Avoid leakage to get into the earth, ditches or waters. Avoid directly release the cleaning waste water into the environment.

- **Methods and Materials for Containment and Cleaning up:**

In case of internal materials leak, use dry soil, dry sand or other non-combustible materials to absorb and cover the leakage, Sweep up with spade and transfer to a dry, clean, lidded container for disposal. Avoid raising dust, Ventilate area and wash spill site after material pickup is complete.

SECTION7: HANDLING AND STORAGE

- **Precautions for Safe Handling:**

Operators should be trained and strictly abide by operating procedures. Wear chemical-resistant protective clothing, chemical-resistant protective gloves and a filter gas mask, Keep away from ignition sources, heat and flame, No smoking at working site, Handling is performed in a well ventilated place. Avoid disassembling the battery at will, reversing battery polarity within the battery assembly and overcharging Such batteries must be packed in inner packaging in such a manner as to effectively prevent short circuits and to prevent movement which could lead to short circuits, In case of leakage of the material in the battery, avoid directly contact with eyes and skin. Avoid inhalation. Incompatibilities: Combustible materials, organic chemicals, reducing agents, metals, strong oxidizing agents, bases and water.

- **Conditions for Safe Storage, Including Any Incompatibilities:**

Store in a cool, dry, and well-ventilated area. Keep away from ignition sources, heat and flame. Incompatibilities: Combustible materials, organic chemicals, reducing agents, metals, strong oxidizing agents, bases and water, Such batteries must be packed in inner packaging in such a manner as to effectively prevent short circuits and to prevent movement which could lead to short circuits. Storage place should be equipped with appropriate varieties and quantities of fire fighting equipment and leakage emergency treatment equipment.

SECTION8: EXPLOSURE CONTROL, PERSONAL PROTECTION

- **Control Parameters:**

GBZ 2. 1-2019 Occupational Exposure Limits for Hazardous Agents in the Workplace - Part 1: Chemical Hazardous Agents:

Lead and inorganic compounds, as Pb: Lead dust PC-TWA 0.05 mg/m³; Lead fume PC-TWA 0.03 mg/m³, G2B (Lead), G2A(Lead inorganic compounds)

Sulfuric acid and sulfur trioxide: PC-TWA 1 mg/m³; PC-STEL 2 mg/m³, G1

Polypropylene dust: PC-TWA 5mg/m³ (total dust)

ACGIH:

Lead: TLV-TWA 0.05(Pb)/m³, G2B

Lead compounds: TLV-TWA 0.05 mg(Pb)/m³

Sulfuric acid: TLV-STEL 3 mg/m³; TLV-TWA 1 mg/m³, G1

- **Appropriate Engineering Controls:**

Mechanical exhaust required. Safety shower and eye bath.

Individual Protection Measures :

- **Eye/Face Protection:**

Wear chemical safety glasses.

- **Skin Protection:**

Hand Protection: Wear chemical-resistant protective gloves.

Body Protection: Wear chemical-resistant protective clothing.

- **Respiratory Protection:**

Wear a filter gas mask when you may be exposed to electrolyte fumes.

- **Other Protect:**

No smoking, drinking and eating at working site. Wash thoroughly after handling.

SECTION9: PHYSICAL/CHEMICAL PROPERTIES

- **Appearance:** Multi-color plastics cement shell
- **Odor:**Odorless
- **pH Value:**1-2
- **Solubility:**Partial soluble in water
- **Range Melting Point/Freezing:**>300°C

SECTION10: STABILITY AND REACTIVITY

- **Chemical Stability:**
Stable under normal temperatures and pressures.
- **Conditions to Avoid:**
Avoid misoperation, exposure to heat and open flame. Avoid mechanical or electrical abuse and overcharge.Prevent short circuits, Prevent movement which could lead to short circuits.
- **Incompatible Materials:**
Combustible materials, organic chemicals, reducing agents, metals, strong oxidizing agents, bases and water.
- **Hazardous Decomposition Products:**
Metal oxides,sulfur oxides,sulfuric acid mist, etc.

SECTION11: TOXICOLOGICAL INFORMATION

- **Skin Corrosion/Irritation:**
The electrolyte in the battery causes severe skin burns.
- **Serious Eye Damage/Irritation:**
The electrolyte in the battery causes serious eye damage.
- **Carcinogenicity**
The International Agency on Cancer (IARC) has classified “strong inorganic acid mists containing sulfuric acid” as a category 1 carcinogen (inhalation), a substance that is carcinogenic to humans. Misuse of the product, such as overcharging, may result in the generation of sulfuric acid mist at high levels.

SECTION12: ECOLOGICAL INFORMATION

Lead and its compounds can result in a threat if released into the environment.

In most surface water and groundwater, lead forms compounds with anions such as hydroxides, carbonates, sulfates, and phosphates, and precipitates out of the water column. Lead may occur as sorbed ions or surface coatings on sediment mineral particles or may be carried in colloidal particles in surface water. Most lead is strongly retained in soil, resulting in little mobility. Lead may be immobilized by ion exchange with hydrous oxides or clays or by chelation with humic or fulvic acids in the soil. Leak (dissolved phase) is bio-accumulated by plants and animals, both aquatic and terrestrial.

SECTION13: DISPOSAL CONSIDERATION

- **Disposal Methods :**
The discarded battery is listed in hazardous waste in the “Catalogue of Hazardous Waste”, Number: HW31,Category:Lead-containing Waste.
The disposal of discarded battery shall comply with the requirements of relevant laws, regulations,policies

and standards such as the “Law of the People’s Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste” and “Technical Policy for the Prevention and Control of Waste Battery Pollution”. Contact a licensed professional waste disposal service to dispose of wastes. Used battery being transported for disposal or reclamation should be carefully checked prior to shipment to ensure the integrity of each battery and its suitability for transport.

SECTION 14: TRANSPORT INFORMATION

The battery has passed the vibration test, pressure differential test and leakage test at 55°C according to Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations SPECIAL PROVISION 238.

- **RID/ADR:**

The battery is not subject to RID/ADR according to special provision 238.

- **IATA DGR:**

The battery is not subject to IATA DGR according to special provision A67.

- **IMO IMDG CODE:**

The battery is not subject to IMO IMDG CODE according to special provision 238.

SECTION 15: REGULATORY INFORMATION

- **Domestic Regulations:**

- **Regulations Concerning Road Transportation of Dangerous Goods (JT/T 617-2018):**

The battery has passed the vibration test, pressure differential test and leakage test at 55°C according to Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations SPECIAL PROVISION 238. The battery is not subject to JT/T 617-2018 according to special provision 238.

- **List of Dangerous Goods (GB 12268-2012):**

The battery has passed the vibration test, pressure differential test and leakage test at 55°C According to Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations SPECIAL, PROVISION 238. The battery is not subject to GB 12268-2012 according to special provision 238.

- **List of Dangerous Goods by Rail (TB/T 30006-2022):**

Number: 81530

Name of product: battery[wet, with acid, storage].

The battery has passed the vibration test, pressure differential test and leakage test at 55°C according to Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations SPECIAL PROVISION 238. The product is not subject to TB/T 30006-2022 according to special provision 77.

- **International Regulations:**

- **Directive (EU) 2023/1542 and 2013/56/EU:**

The label, disposal and recycling of the battery shall meet the requirements of EU Directive (EU) 2023/1542 and 2013/56/EU.

SECTION 16: OTHER INFORMATION

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. We make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own

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investigation to determine the suitability of the information for their particular purpose. In no way shall we be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising from using the above information. If necessary (such as: the ingredients change, the governments require, the new hazard affirmed, etc.), this MSDS/SDS shall be amended.

