Material Safety Data Sheet

MSDS Code: EBO1603015-M039 **Date of Issue: March 9, 2016**

SEALED LEAD ACID BATTERY

1. Identification Of Substance

Product Details

Product Name: **SEALED LEAD ACID BATTERY**

Manufacturer/Supplier By: **MUST POWER LIMITED**

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2. Composition/Data On Components

COMPONENT	CAS #	% by wt.
Electrode plate: Lead	7439-92-1	66.2%
Electrolyte: Dilute sulphuric acid	7664-93-9	24.5%
Separator: Fiberglass	65997-17-3	2.7%
Battery shell: ABS	9003-56-9	6.6%

3. Hazards Identification

Hazard description: 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, 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.

4. First aid Measures

Eyes: Irrigate thoroughly with water for at least 15 minutes. Obtain medical attention.

Skin: Wash off skin thoroughly with water. Remove contaminated clothing and wash before reuse. In severe cases obtain medical attention.

Inhalation: Remove from exposure, rest and keep warm. In severe cases obtain medical

attention.

Ingestion: Wash out mouth thoroughly with water and give plenty of water to drink. Obtain medical attention.

Further treatment: All cases of eye contamination, persistent skin irritation and casualties who have swallowed this substance or been affected by breathing its vapours should be seen by a Doctor.

5. Fire Fighting Measures

Extinguishing Media: Water, CO2.

Special Fire-Fighting Procedures: Self-contained breathing apparatus.

Unusual Fire and Explosion Hazards: Battery may vent when subjected to excessive heat-exposing battery contents.

Hazardous Combustion Products: Carbon monoxide, carbon dioxide and other irritating and toxic fumes.

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

The batteries should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container.

Do not short circuit terminals, or forced over-discharge, throw to fire.

Do not crush or puncture the battery, or immerse in liquids.

Precautions to be taken in handling and storing

Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided.

Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.

Other Precautions

Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures.

8. Exposure Controls And Personal Protection

Engineering Controls (Ventilation):	Store and handle in well-ventilated area. If mechanical ventilation is used, components must be acid-resistant. Handle batteries cautiously, do not tip to avoid spills. Make certain vent caps are on securely. If battery case is damaged, avoid bodily contact with internal components. Wear protective clothing, eye and face protection, when filling, charging, or handling batteries. Do not allow metallic materials to simultaneously contact both the positive and negative terminals of the batteries. Charge batteries in areas with adequate ventilation. General dilution ventilation is acceptable.
Respiratory Protection (NIOSH/MSHA approved):	NONE REQUIRED FOR NORMAL HANDLING OF THE FINISHED PRODUCT. When concentrations of sulfuric acid mist are known to exceed PEL, use NIOSH or MSHA-approved respiratory protection.
Skin Protection:	NONE REQUIRED FOR NORMAL HANDLING OF THE FINISHED PRODUCT. If battery case is damaged, use rubber or plastic acid-resistant gloves with elbow-length gauntlet, acid-resistant apron, clothing and boots.
Eye Protection:	NONE REQUIRED FOR NORMAL HANDLING OF THE FINISHED PRODUCT. If necessary to handle damage product where exposure to the organic electrolyte is a possibility, chemical splash goggles and a face shield are recommended.
Other Protection:	In areas where water and sulfuric acid solutions are handled in concentrations greater than 1%, emergency eyewash stations and showers should be provided, with unlimited water supply. Chemically impervious apron and face shield recommended when adding water or electrolyte to batteries. Wash Hands after handling.

9. Physical And Chemical Properties

Form:	Battery
Color:	Multicolor
Odor:	Odorless

Chemical Uses:	Power supply for electronic products.
pH:	Not applicable unless individual components exposed.
Flash point:	Not applicable unless individual components exposed.
Flammability:	Not applicable unless individual components exposed.
Relative density:	Not applicable unless individual components exposed.
Solubility (water):	Not applicable unless individual components exposed.
Solubility (other):	Not applicable unless individual components exposed.

10. Stability And Reactivity

Stability:	Stable
Hazardous Decomposition Products:	N/A.
Conditions to Avoid:	Heating, mechanical abuse and electrical abuse.
Hazardous Polymerization:	If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons.

11. Toxicological Information

Under normal conditions of use, this product does not present a health hazard. The following information is provided for organic electrolyte and lead exposure that may occur due to container breakage or under extreme conditions such as fire. Organic electrolyte – reacts with moisture/water to produce hydrofluoric acid in trace quantities. Hydrofluoric acid is extremely corrosive and toxic. In severe exposures it acts as a systemic poison and causes severe burns. The reaction may be delayed. Any contact with this material, even minor, requires immediate medical attention.
Inhalation, skin contact and eye contact are possible when the battery is opened.
Exposure to internal contents, the corrosive fumes will be very irritating to skin, eyes and mucous membranes.
Overexposure can cause symptoms of non-fibrotic lung injury and membrane irritation.

12. Ecological Information

Environmental Impact:

Proper use and disposal of the battery will not harm the environment.
Dispose of the battery, away from water, rain and snow.

13. Disposal Considerations

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.

14. Transport Information

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, Nonspillable batteries are excepted 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. Regulations

Law Information

《Dangerous Goods Regulation》

《Recommendations on the Transport of Dangerous Goods Model Regulations》

《International Maritime Dangerous Goods》

《Technical Instructions for the Safe Transport of Dangerous Goods》

《Classification and code of dangerous goods》

OSHA Hazard Communication Standard Status

EU

Toxic Substances Control Act (TSCA) Status

SARA Title III

RCRA

In accordance with all Federal, State and Local laws

16. Other Information

The above information is based on the data of which we are aware and is believed to be correct as of the data hereof. Since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data made available subsequent to the data hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.