MATERIAL SAFETY DATA SHEET

Jan. 2, 2020

SECTION 1 – Chemical Product and Company Identification

Product Information:
Product Name: Rechargeable Lithium-ion Battery
Model: VHR TL48100LFP-3U
Company Information:
Company Name: ZHEJIANG HENGRUI TECHNOLOGY CO., LTD.
Address: 8F, Building 3, Tianxing International Center, No. 508 Fengtan Road, Hangzhou, China.
Post code: 310000
Tel: +86 571 88189800
Fax: +86 571 87896688
Email: info@hresys.com
Website: www.hresys.com
Emergency Phone: +86 571 86876615
Company Information:
Name: Aeson Power Pty Ltd
Address: 18 / 40 Ricketts Rd, Mount Waverley, VIC, 3149, Australia
E-mail address: info@aesonpower.com.au
Phone number: +61-3-95455993
Website: www.aesonpower.com.au

SECTION 2 – Hazards Identification

Health Hazards (Acute and Chronic)

These chemicals are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrically abused. Contact of electrolyte and extruded lithium with skin and eyes should be avoided.

Sign/Symptoms of Exposure

A shorted lithium battery can cause thermal and chemical burns upon contact with the skin.

SECTION 3 – Composition/Information On Ingredient

Chemical Composition		Molecular Formula	CAS No.	Weight (%)
Steel		---	65997-19-5	21-23
Cell	Can	Al	7429-90-5	8-10
	Lithium Iron Phosphate	$LiFePO_4$	15365-14-7	23-25
	Carbon as Graphite	C	7440-44-0	12-13
	Aluminum Metal	Al	7429-90-5	2-3
	Copper Metal	Cu	7440-50-8	5-7
Electrolyte	Ethylene Carbonate	$C_3H_4O_3$	96-49-1	14-16
	Propylene Carbonate	$C_4H_6O_3$	108-32-7	
	Ethyl Methyl Carbonate	$C_4H_8O_3$	623-53-0	
	Lithium Hexafluorophate	$LiPF_6$	21324-40-3	
BMS		---	---	<1

SECTION 4 – First Aid Measures

Eye

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin

Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.

Inhalation

Remove from exposure and move to fresh air immediately. Use oxygen if available.

Ingestion

Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Call a physician.

SECTION 5 – Fire Fighting Measures

Flash Point: N/A.

Auto-Ignition Temperature: N/A.

Extinguishing Media： Dry chemical, CO2

Special Fire-Fighting Procedures

Self-contained breathing apparatus.\

Unusual Fire and Explosion Hazards

Cell my vent when subjected to excessive heat-exposing battery contents.

Hazardous Combustion Products

Carbon monoxide, carbon dioxide, lithium oxide fumes.

SECTION 6 – Accidental Release Measures

Steps to be taken in case Material is Released or Spilled

If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the batteries to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.

Waste Disposal Method

It is recommended to discharge the battery to the end, handing in the abandoned batteries to related department unified, dispose of the batteries in accordance with approved local, state, and federal requirements. Consult state environmental protection agency and/or federal EPA.

SECTION 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 over charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.

Precautions to be taken in handing and storing

Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at night temperatures should be avoi ded. Do not place the battery near heating equipment, nor expose to direct sunlight for lo ng periods.

Other Precautions

Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperature. Do not short or install with incorrect polarity.

SECTION 8 – Exposure Controls, Personal Protection

Respiratory Protection

In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting batteries. Respiratory protection is not necessary under conditions of normal use.

Ventilation

Not necessary under conditions of normal use.

Protective Gloves

Not necessary under conditions of normal use.

Other Protective Clothing or Equipment

Not necessary under conditions of normal use.

Personal Protection is recommended for venting batteries: Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields.

SECTION 9 – Physical and Chemical Properties

Type	VHR TL48100LFP-3U					
Nominal Voltage	48V					
Rated Capacity	100Ah					
Electric Energy	4800Wh					

Appearance Characters: quadrate, odorless, solid battery.

Chemical Used: Backup power.

SECTION 10 – Stability and Reactivity

Stability

Stable

Conditions to avoid

Heating, mechanical abuse and electrical abuse.

Hazardous Decomposition Products

N/A

Hazardous Polymerization

N/A

If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons.

SECTION 11 – Toxicological Information

Inhalation, skin contact and eye contact are possible when the battery is opened. Exposure to internal contents, the corrosive fumes will be very irritation to skin, eyes and mucous membranes. Overexposure can cause symptoms of non-fibrotic lung injury and membrane irritation.

SECTION 12 – Ecological Information

When promptly used or disposed the battery dose not present environmental hazard.
When disposed, keep away from water, rain and snow.

SECTION 13 – Disposal Considerations

Appropriate method of disposal of substance or preparation

If batteries are still fully charged or only partially discharged, they can be considered a reactive hazardous waste because of significant amount of uncreated or unconsumed lithium remaining in the spent battery. The batteries must be neutralized through an approved secondary treatment facility prior to disposal as a hazardous waste. Recycling of battery can be done in authorized facility, through licensed waste carrier.

SECTION 14 – Transport Information

IMDG

The transportation of Lithium Ion Batteries is regulated by the International Maritime Dangerous Goods (IMDG) 4.1.4. These regulations classify these types of batteries as dangerous goods. Refer to IMDG Code Packaging Instructions P903 for more details pertaining to the transportation of Lithium Ion Batteries. Additional requirements, or relief from some requirements, may be found in special provisions 188 and 230.

Shipping information as follows:
Proper Shipping Name: Lithium Ion Battery
UN Identification: UN3480
Hazard Class: 9
Packaging Group: II
Packing Instructions: P903

Label/Placard: Miscellaneous

IATA:

The transportation of Lithium Ion Batteries is regulated by the International Air Transport Association (IATA) Dangerous Good Regulations (DGR) 5.9. These regulations classify these types of batteries as dangerous goods. Refer to IATA Packaging Instructions 965 and special provision A164 for more details pertaining to transportation of Lithium Ion Batteries.

Shipping information as follows:
Proper Shipping Name: Lithium Ion Battery
UN Identification UN3480
Hazard Class: 9
Packaging Group: II
Packing Instructions: 965
Label/Placard: Miscellaneous
Additional Labeling: Lithium battery handling label (As defined in PI968)

Cargo Aircraft: Packing Instruction 965
Section IA
IMP: RBI
Max of 35 kg gross

Cargo Aircraft: Packing Instruction 965
Section IB
IMP: RBI
Max of 10 kg gross

SECTION 15 – Regulatory Information

Dangerous Goods Regulations
Recommendations on the Transport of Dangerous Goods-Model Regulations (20th revised edition)
Recommendations on the Transport of Dangerous Goods-Manual of Tests and Criteria
International Air Transport Association (IATA)
International Maritime Dangerous Goods (IMDG Code 2018 Edition Amdt 39-18)
Technical Instructions for the Safe Transport of Dangerous Goods
Classification and code of dangerous goods (GB 6944-2012)
2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Toxic Substance Control Act (TSCA)

Code of Federal Regulations

In accordance with all Federal, State and local laws

SECTION 16 – Additional 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 this particular purpose.