

Material Safety Data Sheet (MSDS)

LiFe4851

OVERVIEW

To the best of our knowledge, the information contained herein is accurate. However, neither the below named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and

should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

The data/information contained herein has been reviewed and approved for general release on the basis that this document contains no export controlled information.

SECTION 1

Product and Company Identification

Product Name	Rechargeable Li-ion Battery
Model	LiFe4851 51.2V 100Ah 5120Wh
Manufacturer's Name	PowerPlus Energy Pty Ltd
Manufacturer's Address	2 Koornang Road Scoresby VIC 3179 Australia
Telephone	+61 3 8797 5557
Emergency Telephone Call	+61 3 8797 5557
Email Address	support@powerplus-energy.com.au

SECTION 2

Hazards Identification

Explosive Risk	This article does not belong to the explosion dangerous goods.
Flammable Risk	This article does not belong to the flammable material.
Oxidation Risk	This article does not belong to the oxidation of dangerous goods.
Toxic Risk	This article does not belong to the toxic dangerous goods.
Radioactive Risk	This article does not belong to the radiation of dangerous goods.
Mordant Risk	This article does not belong to the radiation of dangerous goods.
Other Risk	The watt-hour rate of the battery is 5120Wh which belong to the Class 9 dangerous goods.

SECTION 3

Composition/Information on Ingredients

Common Chemical Name	Chemical Formula	CAS Number	Wt %
Lithium Iron Phosphate	LiFePO ₄	15363-14-7	49
Polyvinylidene Fluoride (PVDF)	(C ₂ H ₂ F ₂) _n	75-38-7	2.5
Carboxymethyl Cellulose	[C ₆ H ₇ O ₂ (OH) ₂ OCH ₂ COONa] _n	9000-11-7	0.6
Polymerized Styrene Butadiene Rubber (SBR)	(C ₈ H ₈ C ₄ H ₆) _n	9003-55-8	0.5
Carbon	C	7440-44-0	21.6
Polypropylene	(C ₃ H ₆) _n	9003-07-0	3.8
SBR	C36H42X2	61789-96-6	0.8
Lithium hexafluorophosphate(1-)	LiPF ₆	21324-40-3	21.1
Copper	Cu	7440-50-8	6.8
Aluminum	AL	7429-90-5	3.9

SECTION 4

First Aid Measures

Once battery shell ruptures, contact with the battery contents with the human body will produce harm, if contact occurs recipient should take the following emergency measures:

Eye Contact	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin Contact	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	Water, CO ₂ .
Special Fire-Fighting Procedures	Self-contained breathing apparatus.
Unusual Fire and Explosion Hazards	Cell may 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 operators 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 battery 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. Use up the metal lithium inside the lithium metal battery, and delivered to professional institutions for further treatment.

SECTION 7

Handling and Storage

The battery 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 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	The battery may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. 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 cell cores. 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 battery	Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields.

SECTION 9

Physical and Chemical Properties

Physical State	Form	Prismatic
	Ref, No.:	RZUN2024-4850-M1
	Odour	If leaking, smells of medical ether.
Change in Condition		
pH	Not applicable as supplied.	
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.	

SECTION 10

Stability and Reactivity

Stability	Product is stable under conditions described in Section 7.
Conditions to Avoid	Heat above 70°C or incinerate. Deform. Mutilate. Crush. Disassemble. Overcharge. Short circuit. Expose over a long period to humid conditions.
Materials to avoid	Oxidising agents, alkalis, water.
Hazardous Decomposition Products	Toxic Fumes, and may form peroxides.
Hazardous Polymerization	N/A.

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

SECTION 11

Toxicological Information

Signs & symptoms	None, unless battery ruptures. In the event of exposure to internal contents, vapour fumes may be very irritating to the eyes and skin.
Inhalation	Lung irritant.
Skin contact	Skin irritant.
Eye contact	Eye irritant.
Ingestion	Poisoning if swallowed.

Medical conditions generally aggravated by exposure: In the event of exposure to internal contents, moderate to server irritation, burning and dryness of the skin may occur, Target organs nerves, liver and kidneys.

SECTION 12

Ecological Information

Mammalian effects	None known at present.
Eco-toxicity	None known at present.
Bioaccumulation Potential	Slowly Bio-degradable.
Environmental Fate	None known environmental hazards at present.

SECTION 13

Disposal Considerations

Do not incinerate, or subject cells to temperature in excess of 70°C, Such abuse can result in loss of seal leakage, and/or cell explosion. Dispose of in accordance with appropriate local regulations.

SECTION 14

Transport Information

The lithium battery cargo has passed the relevant test requirements of Section 38.3 of the Manual of Tests and Criteria.

Ems No	F-A ,S-1
Marine Pollutant	No
Proper Shipping Name	Lithium ion batteries
Hazard Class	Class 9
UN/ID Number	UN3480
PACKING GROUP II	
Maritime Transport Label for Conveyance	Class 9 lithium battery hazard label. The goods are complied with the requirements of Packing Instruction P903 of IMDG CODE (Amdt. 41-22) (2022 Edition).

SECTION 15

Regulatory Information

Law Information

Dangerous Goods Regulations

Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations

INTERNATIONAL MARITIME DANGEROUS GOODS CODE

List of dangerous goods

Agreement concerning the International Carriage of Dangerous Goods by Road

Technical Instructions for the Safe Transport of Dangerous Goods by Air

Classification and code of dangerous goods

Occupational Safety and Health Act (OSHA)

Toxic Substance Control Act (TSCA)

Consumer Product Safety Act (CPSA)

Federal Environmental Pollution Control Act (FEPCA)

The Oil Pollution Act (OPA)

Superfund Amendments and Reauthorization Act Title# (302/311/312/313) (SARA)

Resource Conservation and Recovery Act (RCRA)

Safety Drinking Water Act (CWA)

California Proposition 65

Code of Federal Regulations (CFR)

In accordance with all Federal, State and local laws.

SECTION 16

Additional Information

Sample photo

