

# Material Safety Data Sheet



**Sample name :** LiFePO4 Battery

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**Consignor :** Zylux Energy Pty. Ltd.

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## Material Safety Data Sheet

| 1. Identification of the product and supplier |   |
|---|---|
| <b>Name of goods</b>                          | LiFePO4 Battery   |
| <b>Type/Model</b>                             | 12.8V120Ah<br>12.8V, 120Ah, 1536Wh  |
| <b>Commissioned by</b>                        | Zylux Energy Pty. Ltd.  |
| <b>Commissioner address</b>                   | 166 Christmas Street<br>Fairfield, VIC, 3078, Australia                             |
| <b>Factory</b>                                | Zylux Energy Pty. Ltd.  |
| <b>Factory's address</b>                      | 166 Christmas Street<br>Fairfield, VIC, 3078, Australia                             |
| <b>Inspection according to</b>                | EEC Directive 93/112/EC<br>UN "Recommendations on the TRANSPORT OF DANGEROUS GOODS" |
| <b>Emergency telephone call</b>               | +61 (3) 9482 2203   |
| Receiving date: 2022-03-14                    | Issue date: 2022-04-08  |

Tested by:



Reviewed by:



Approved by:




| <b>2. Composition/Information on Ingredient</b> |   |            |
|---|---|------------|
| Hazardous Ingredients<br>(Chemical Name)        | Concentration or concentration ranges (%) | CAS Number |
| Lithium iron phosphate (LiFePO4)                | 32.4                                      | 15365-14-7 |
| Copper Foil                                     | 7.93                                      | 7440-50-8  |
| Graphite  | 16.3                                      | 7782-42-5  |
| Ethylene Carbonate                              | 15.53                                     | 96-46-1    |
| Aluminum Foil                                   | 4.29                                      | 7429-90-5  |
| Other   | 23.55                                     | --         |

| <b>3. Hazards Identification</b> |   |
|----------------------------------|---|
| 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 corrosion of dangerous goods  |
| other risk                       | This article is LiFePO4 Battery, Watt hour rate 1536Wh, which belong to the Class 9 - Lithium Battery hazard goods. |

## 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.

## 5. Fire-fighting measures

**Flash Point:** N/A.

**Auto-Ignition Temperature:** N/A.

**Extinguishing Media:** Water, CO2.

### 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.

## 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 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

Disposal of the battery should be performed by professional disposal firms knowledgeable in Federal, State or Local requirements of hazardous waste treatment and hazardous waste transportation. The battery should be completely discharged prior to disposal and/or the terminals taped or capped to prevent short circuit. When completely discharged it is not considered hazardous. The battery contains recyclable materials. Recycling options available in your local area should be considered when disposing of this product.

## 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.

## 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.

### 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.

## 9. Physical and chemical properties

**Appearance:** Cuboid shape

**Ref. No.:** ATSU220314871

**Odour:** If leaking, smells of medical ether.

**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.

## 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.

## 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.

## 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.

## 13. Disposal consideration

Disposal of the battery should be performed by professional disposal firms knowledgeable in Federal, State or Local requirements of hazardous waste treatment and hazardous waste transportation. The battery should be completely discharged prior to disposal and/or the terminals taped or capped to prevent short circuit. When completely discharged it is not considered hazardous. The battery contains recyclable materials. Recycling options available in your local area should be considered when disposing of this product.

## 14. Transport information

**Label for conveyance:** Class 9 lithium battery hazard label, Cargo Aircraft Only Label

**UN Number:** UN3480

**Packing Group:** II

**Land transport (ADR/RID):** Class 9

**Sea transport (IMDG):** Class 9

**Air transport (ICAO-TI/IATA DGR):** Class 9

**Proper Shipping name:** Lithium ion batteries (including Lithium ion polymer batteries)

**Hazard Classification:** The goods shall be complied with the requirements of Section IA of Packing Instructions 965 of 63rd DGR Manual of IATA (2022 edition), including the passing of the UN38.3 test. And also complies with the P903 of IMDG CODE (Amdt 40-20) 2020 Edition.

## 15. Regulation information

Major applicable regulations for the transportation of lithium-ion cells and batteries are as follows:

The UN Model Regulations: United Nations ST/SG/AC.10/1/Rev.20. Recommendations on the Safe Transport of Dangerous Goods

The International Civil Aviation Organization (ICAO) Technical Instructions for the Safe Transport of Dangerous Goods by Air Transport

The International Air Transport Association (IATA) Dangerous Goods Regulations (62nd Edition 2021)

International Maritime Organization (IMO): International Maritime Dangerous Goods Code. (P903 of IMDG CODE (Amdt 39-18) Edition)

OSHA Hazard communication standard (29 CFR 1910)

\_\_\_\_\_ ✓ \_\_\_\_\_ Hazardous \_\_\_\_\_ Non-hazard

## 16. Other information

This information is not effective to all the batteries manufactured by Zylux Energy Pty. Ltd. This information comes from reliable sources, but no warranty is made to the completeness and accuracy of information contained. ATS electronic Technology Co., Ltd. doesn't assume responsibility for any damage or loss because of misuse of batteries. User's should grasp the correct use method and be responsible for the use of batteries.