# Material Safety Data Sheet

## Section 1 – IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product Name:** Li-ion Battery

**Battery type:** Li-ion Battery

| Model | Voltage | Capacity（Ah） | | | Energy（Wh） |
|---|---|---|---|---|---|
| | | Typical | Min | MAX | |
| LF280K | 3.2V | 280 | / | / | 896 |

**Product Use**: Energy Storage System

**MSDS Date of Preparation**: April 6th, 2021 ； Updated：/

**Company Identification:**

**Name**： EVE POWER Co., Ltd.

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## Section 2 - Hazards Identification

- **Health Hazards (Acute and Chronic)**

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

- **Sign/Symptoms of Exposure**

A shorted battery can cause thermal and chemical burns upon contact with the skin. Maybe a reproductive hazard.

These products are classified as Articles under REACH and are not subject to the requirements for Information in the Supply Chain (Safety Data Sheets and Labels). While batteries may release hazardous substances if damaged, this is not an intended release as defined under REACH. Batteries are not classified as hazardous under the CLP.

The following information is provided to assist in the safe use of our products.

CAUTION: Battery can explode or leak if heated, disassembled, shorted, recharged, exposed to fire or high temperature or inserted incorrectly. Keep in original package until ready to use. Do not carry batteries

loose in your pocket or purse. Keep batteries away from children. If swallowed, consult a physician at once.

Under certain misuse conditions and by abusively opening the battery, exposed lithium can react with water or moisture in the air causing potential thermal burns or fire.

## Section 3 – Composition/Information on Ingredient

| Material or ingredient | Chemical Formula | CAS No. | Wt % |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Lithium iron phosphate | $LiFePO_4$ | / | 37.0 |
| Phosphate(1-),hexafluoro,lithium | $LiPF_6$ | (CAS-No.)21324-40-3<br>(EC-No.)244-334-7 | 3.2 |
| Graphite | C | (CAS-No.)7782-42-5<br>(EC-No.)231-955-3 | 19.1 |
| Aluminum | Al | (CAS-No.)7429-90-5<br>(EC-No.)231-072-3<br>(EC Index-No.)013-002-00-1 | 4.6 |
| Copper | Cu | (CAS-No.)7440-50-8<br>(EC-No.)231-159-6 | 7.5 |
| Polypropylene | PP | (CAS-No.) 9003-07-0<br>(EC-No.)618-352-4 | 4.8 |

## Section 4 - First Aid Measures

- **General Advice**

  The chemicals in this product are contained in a sealed package. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused.

- **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.

- **Note to Physician**

  Published reports recommend removal from the esophagus be done endoscopically (under direct visualization). Batteries beyond the esophagus need not be retrieved unless there are signs of injury to the GI tract or a large diameter battery fails to pass the pylorus. If asymptomatic, follow up x rays are necessary only to confirm the passage of larger batteries. Confirmation by stool inspection is preferable under most circumstances. Potential leakage of less than 50 milligrams of dimethoxyethane and propylene carbonate. Dimethoxyethane rapidly evaporates. Do not give ipecac.

## Section 5 - Fire Fighting Measures

- **Fire and Explosion Hazards**: Batteries may burst and release hazardous decomposition products when exposed to a fire situation.
- **Extinguishing Media**

  $CO_2$.

- **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 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**

  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 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.
- **Storage**

  Store batteries in a dry place at normal room temperature.

## Section 8 - Exposure Controls, Personal Protection

- **Exposure Limits**: No exposure to the battery components should occur during normal use.
- **Ventilation:** Not necessary under conditions of normal use.
- **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.
- **Skin Protection:** None required for normal use. Use butyl rubber gloves when handling leaking

batteries..

- **Eye Protection:** None required for normal use. Wear safety goggles when handling leaking batteries.
- **Protective Gloves**

  Not need
- **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

**Appearance and Odor:** prismatic cell, no odor.

**Water Solubility:** Insoluble

**Flash Point**: Not Applicable

## 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.

## Section 11 - Toxicological Information

- **Potential Health Effects**: The chemicals in this product are contained in a sealed package. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused.
- **Eye Contact**: Contact with battery contents may cause irritation.
- **Skin Contact**: Contact with battery contents may cause irritation.
- **Inhalation**: Inhalation of vapors or fumes released due to heat or a large number of leaking batteries may cause respiratory and eye irritation.
- **Ingestion**: Seek immediate medical advice. Batteries lodged in the esophagus should be removed immediately since leakage, caustic burns and perforation package occur as soon as two hours after ingestion. Irritation to the internal/external mouth areas, may occur following exposure to a leaking battery.

## Section 12 - Ecological Information

When promptly used or disposed the battery does 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 not reaction or unconsumed lithium remaining in the spent battery. The battery 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.

  lithium ion cell batteries are labeled in compliance with the EU Battery Directive 2006/66/EC.

## Section 14 - Transport Information

***Emergency Phone Number:***

**CHEMTREC 24 Hour Emergency Response Hotline （+86-752-2606966）**

**Persons who prepare or offer lithium batteries for transport are required by regulation to be trained and certified.**

The information provided below is for informational purposes only.

| Lithium Ion Batteries |
|---|
| UN No.：UN3480 |
| EmS No.:F-A,S-I |
| Marine pollutant:No |
| Proper shipping name:Lithium ion battery（Including lithium ion ploymer batteries） |
| Hazard classification: The goods shall be complied with the requirements of section IA of Packing Instructions 965 of 61 th DGR Manual of IATA（2020）Edition and special provision 188 of IMDG CODE（Amdt.39-18）Edition,including the passing of the UN38.3 test. |

The products meet all the requirements of the IATA DGR 61th edition, under special provisions including UN 38.3 test . If the package exceeds the table 965 - the - standard, so it belongs to the ninth category of dangerous goods. Only cargo transport. According to the packing instructions 965 Part IA IATA 61th version of the DGR requirements.

Lithium ion cells and batteries must be offered for transport at a state of charge (SoC) not exceeding 30% of their rated design capacity from 1 April 2016.

Shipping packages containing rechargeable lithium batteries must be labeled, regardless of size or number of batteries, with a lithium battery handling label.

More information concerning shipping, testing, marking and packaging can be obtained from Label master at http://www.labelmaster.com.

Separate battery when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport. Take in a cargo of them without falling, dropping, and breakage. Prevent

collapse of cargo piles and wet by rain.

## Section 15 - Regulatory Information

- **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》

  《Occupational Safety and Health Act》(OSHA)

  《Toxic Substances 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 III (302/311/312/313)》(SARA)

  《Resource Conservation and Recovery Act》(RCRA)

  《Safety Drinking Water Act》(CWA)

  《California Proposition 65》

  《Code of Federal Regulations》(CFR)

**EU BATTERY DIRECTIVE:** These batteries comply with the Directive substance limits and labeling requirements.

**EU REACH REGISTRATION:** These products are manufactured articles and not subject to REACH registration requirements.

**EU Labeling:** lithium ion cell batteries are labeled in compliance with the EU Battery Directive 2006/66/EC.

## Section 16 – Other Information

**EVE Hazard Rating:** Health: 0 Fire: 0 Reactivity: 0

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Data supplied is for use only in connection with occupational safety and health.

**DISCLAIMER**: This MSDS is intended to provide a brief summary of our knowledge and guidance regarding the use of this material. The information contained here has been compiled from sources considered by EVE to be dependable and is accurate to the best of the Company's knowledge. It is not meant to be an all inclusive document on worldwide hazard communication regulations.