

Material Safety Data Sheet

LiFePO4 Battery

Report Number: BST-MSDS-45
Chemistry: Lithium Iron Phosphate (LiFePO4)
Type: IFR26650
Manufacturer: BST POWER (SHENZHEN) LIMITED

Material Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION	
Name of goods	Lithium Iron Phosphate Rechargeable Battery
Type/Mode	LiFePO4 IFR26650 3.2V 6.6Ah 21.12Wh
Manufacturer	BST POWER (SHENZHEN) LIMITED
Manufacturer Address	No.37 Xinlong Road, Dakang, HenggangStreet ,Longgang District, Shenzhen, P. R. China
Inspection according to	EEC Directive 93/112/EC UN "Recommendations on the TRANSPORT OF DANGEROUSGOODS"
Emergency telephone	0755-84260300
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Edited by:
Xianbing Yin

Checked by:
Xiaoqiu Liang

Approved
Ping Chen

2. COMPOSITION INFORMATION

Chemical Composition	Chemical Formula	CAS No.	Weight (%)
Lithium Iron Phosphate (LiFePO ₄)	LiFePO ₄	15365-14-7	32
Carbon, as Graphite	C	7440-44-0	14
Aluminum	Al	7429-90-5	4.5
Copper	Cu	7440-50-8	10
Iron	Fe	7439-89-6	17
Electrolyte	-	-	15
Ethylene carbonate	C ₃ H ₄ O ₃	96-49-1	3
Polylene carbonate	C ₄ H ₆ O ₃	108-32-7	1
Ethyl acetate	C ₄ H ₈ O ₂	141-78-6	6
Ethyl methyl carbonate	C ₄ H ₈ O ₃	623-53-0	3
Lithium hexafluorophosphate	F ₆ LiP	21324-40-3	2

3. 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 corrosion of dangerous goods
other risk	Watt hour rate 21.12Wh, which belong to the Lithium-ion batteries (Including lithium ion polymer batteries)

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

It is recommended to discharge the battery to the end, to use up the metal lithium inside the battery, and to bury the discharged battery in soil.

7. Handling and storage

The battery should not be opened, destroyed, or incinerated, 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. Don't 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.

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.

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9. Physical and chemical properties

Appearance: Cylindrical

Odor: 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. Physical and chemical properties

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: Oxidizing 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 alkalis, halogenated hydrocarbons.

11. Toxicological information

Signs & symptoms: None unless battery ruptures.

In the event of exposure to internal contents, vapor 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

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

14. Transport information

Label for conveyance:

Lithium Battery Label, Class 9 Label, Cargo Aircraft Only

UN Number:

UN3480/UN3481

Packaging Group:

N/A

Marine pollutant:

No

Proper Shipping name:

Lithium Iron Phosphate

Hazard Classification:

The goods shall be complied with the requirements of Packing Instruction 965 ~ 967 of 63th DGR Manual of IATA. and Package complies with the special provision 188 of IMDG CODE (Amdt. 40-20) 2020 Edition., including the passing of the UN38.3 test.

15. Regulation information

Law information

- 《Dangerous Goods Regulations 》
- 《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 Substance Control Act》 (TSCA)
- 《Consumer Product Safety Act》 (CPSA)
- 《Federal Environmental Pollution Control Act 》 (FEPCA)
- 《The Oil Pollution Act》 (OPA)
- 《302/311/312/ 313》
- 《Superfund Amendments and Reauthorization Act TitleIII (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.

16. Other information

Users should read this file carefully and use the batteries in correct method. BST POWER (SHENZHEN) LIMITED doesn't assume responsibility for any damage or loss because of misuse of batteries.