BATTSYS
广州丰江电池新技术股份有限公司
GUANGZHOU BATTSYS CO., LTD
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Material Safety Data Sheet

Report No. FJ2021120103

1. Product & Company Identification:

Product	Lithium ion rechargeable battery
Model/Type	13972（3.2V 1500mAh 4.8Wh）
UN Report No.:	FJ20210101U02
The technical name (Chemical Composition) :	LiFePO4
Manufacturer:	GUANGZIIOU BATTSYS CO., LTD.
Address:	No.10 Building, Standard Industrial Garden of Taishi Industrial Zone, Dongyong Town, Nansha, Guangzhou,China.
Telephone:	86-20-34925225
Fax:	86-20-34925229

2. Composition /Information on Ingredients:

Important note: The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.

MATERIAL OR INGREDIENT	PEL (OSHA)	TLV (ACGIH)	%/wt.
Graphite **(CAS# 7782-42-5)**	5mg/m^3 TWA (respirable fraction) 15mg/m^3 TWA(total dust)	2mg/m^3 TWA (respirable fraction)	10~25
Lithium Iron Phosphate **(CAS# 12190-79-3)**	None established	None established	35~50
Lithium Hexafluorophosphate **(CAS# 21324-40-3)**	None established	None established	0~5
Acetylene Black **(CAS# 1333-86-4)**	3.5mg/m^3 TWA (as carbon black)	3.5mg/m^3 TWA(as carbon black)	0~5
Diethyl Carbonate **(CAS# 105-58-8)**	None established	None established	0-20
Dimethyl Carbonate **(CAS# 616-38-6)**	None established	None established	0~20
Ethyl Methyl Carbonate **(CAS# 623-53-0)**	None established	None established	0~20
Propylene Carbonate **(CAS# 108-32-7)**	None established	None established	0~20

Ethylene Carbonate **(CAS# 96-49-1)**	None established	None established	0~20

3. Hazardous Identification:

Appearance , Color and Oder : Solid object with no odor.
Description: Lithium ion rechargeable battery series
Ingestion: No effect under routine handling and use.
Inhalation: No effect under routine handling and use.
Skin contact: No effect under routine handling and use.
Eye contact: No effect under routine handling and use.
Skin absorption: No effect under routine handling and use.
Reported as carcinogen: Not applicable

4. First Aid Measures:

Under normal conditions of use, the battery is hermetically sealed.

Ingestion:

Swallowing a battery can be harmful.

Contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract. If battery or open battery is ingested, do not induce vomiting or give food or drink. Seek medical attention immediately.

Inhalation:

Contents of an open battery can cause respiratory irritation. Inhalation of vapors may cause irritation of the upper respiratory tract and lungs. Provide fresh air and seek medical attention.

Skin Absorption:

Ethylene carbonate, diethyl carbonate and dimethyl carbonate may be absorbed through the skin causing localized inflammation.

Skin Contact:

Contents of an open battery can cause skin irritation and/or chemical burns. Remove contaminated clothing and wash skin with soap and water. If a chemical burn occurs or if irritation persists, seek medical attention.

Eye Contact:

Contents of an open battery can cause severe irritation and chemical burns. Immediately flush eyes thoroughly with water for at least 15 minutes,

lifting upper and lower lids, until no evidence of the chemical remains. Seek medical attention.

Note:

Acetylene black is listed as possible carcinogens by the International Agency for Research on Cancer (IARC).

5. Fire Fighting Measures

If fire or explosion occurs when batteries are on charge, shut off power to charger.

In case of fire where lithium ion batteries are present, flood the area with water. If any batteries are burning, water may not extinguish them, but will cool the adjacent batteries and control the spread of fire. CO_2, dry chemical, and foam extinguishers are preferred for small fires, but also may not extinguish burning lithium ion batteries. Burning batteries will burn themselves out. Virtually all fires involving lithium ion batteries can be controlled with water. When water is used, however, hydrogen gas may be evolved which can form an explosive mixture with air. LITH-X (powdered graphite) or copper powder fire extinguishers, sand, dry ground dolomite or soda ash may also be used. These materials act as smothering agents.

Fire fighters should wear self-contained breathing apparatus. Burning lithium ion batteries can produce toxic fumes including HF, oxides of carbon, aluminum, lithium and copper. Volatile phosphorus pent fluoride may form at a temperature above 230° Fahrenheit.

6. Accidental Release Measures

On hand: Place material into suitable containers and call local fire/police department.

In water: If possible. Remove from water and call local fire/police department.

7. Handling & Storage

Handling: Do not expose the battery to excessive physical shock or vibration. Short-circuiting should be avoided; however, accidental short-circuiting for a few seconds will not seriously affect the battery. Prolonged short circuits will cause the battery to rapidly lose energy, could generate enough heat to burn

skin. Sources of short circuits include jumbled batteries in bulk containers, coins, metal jewelry, metal covered tables, or metal belts used for assembly of batteries in devices. To minimize risk of short-circuiting, the protective case supplied with the battery should be used to cover the terminals when transporting or storing the battery. Do not disassemble or deform the battery. Should an individual cell within a battery become ruptured, do not allow contact with water.

Storage: The lithium ion battery should be between 25% and 75% of full charge when stored for a long period of time. Stored in a cool, dry and well ventilated area. Elevated temperatures can result in loss of battery performance, leakage, or rust. Do not expose the battery to open flames.

8. Exposure Control/Personal Protection

Engineering Control:

Keep away from heat and open flame. Stored in a cool dry place.

Personal Protection:

Respiratory Protection: Not necessary under normal conditions.

Eye/Face Protection:

Not necessary under normal conditions. Wear safety glasses with side shields if handling an open or leaking battery.

Gloves:

Not necessary under normal conditions. Use neoprene or natural rubber gloves if handling an open or leaking battery.

Foot Protection:

Steel toed shoes recommended for large container handling.

9. Physical/Chemical Properties

Physical state	Solid
Color	Various
Odor	Odorless
Shape	Prismatic
Water solubility	Insoluble

10. Stability & Reactivity

Stability: Good stability at standard temperature.
Reactivity: None

Avoid contact with water and acids. Hazardous decomposition products: If Al package foil of battery is damaged, the battery should avoid to contact strong oxidizer, acids and
high temperature, and the electrolyte will be formed HF.

11. Toxicological information

This product does not elicit toxicological properties during routine handling and use.

12. Ecological information

If the battery is scrapped, it should be selected and disposed by professional company.

13. Disposal considerations

Do not dispose of battery into environment or sewerage. It should be recycled and disposed basing on your local legislation and regulations.

14. Transport Information

Lithium batteries shipped as “Lithium batteries” , ”Lithium batteries packed with equipment”,or “Lithium batteries contained in equipment” may not be classified as “Dangerous Goods” when shipped in accordance with “PI965-970section II of IATA-DGR” or “special provision 188 of IMO-IMDG Code”.

Air transportation , according to IATA DGR 63th Edition	
UN Number	UN3480
Proper Shipping Name	Lithium Ion Batteries(limited to a maximum of 30% SOC)
Hazard Class	Class 9
Packaging requirement	PACKING INSTRUCTION 965 of section IB
UN Number	UN3481
Proper Shipping Name	Lithium Ion Batteries Contained in Equipment
Hazard Class	Not restricted
Packaging requirement	PACKING INSTRUCTION 967 of section II
UN Number	UN3481

Material Safety Data Sheet

Report No. FJ2021120103

Proper Shipping Name	Lithium Ion Batteries Packed With Equipment
Hazard Class	Not restricted
Packaging requirement	PACKING INSTRUCTION 966 of section II
Sea transportation, according to IMO IMDG Code (Amend 40-2020)	
UN Number	UN 3480
Proper Shipping Name	Lithium Ion Batteries
Hazard Class	Not restricted
Special provision	sp188
Package instruction	Packaging in accordance P903
EmS No.	F-A, S-1
UN Number	UN 3481
Proper Shipping Name	Lithium Ion Batteries Contained in Equipment
Hazard Class	Not restricted
Special provision	sp188
Package instruction	Packaging in accordance P903
EmS No.	F-A, S-1
Proper Shipping Name	Lithium Ion Batteries Packed With Equipment
Hazard Class	Not restricted
Special provision	sp188
Package instruction	Packaging in accordance P903
EmS No.	F-A, S-1

The watt-hour rating of the battery models listed is not more than 100Wh. The product is safe for air/ sea transportation .

Each package is labeled.The manufacture data is labelled on each battery.

No	ITEMS	RESULT	REMARKS
1	Altitude simulation	Pass	Test 1 to 5 must be conducted in sequence on the same cell or battery
2	Thermal test	Pass	
3	Vibration	Pass	
4	Shock	Pass	
5	External short circuit	Pass	
6	Impact	Pass	
7	Overcharge	Pass	Only battery do need this test item
8	Forced Discharge	Pass	

15. Regulatory Information

Dangerous Goods Regulation(DGR)
Recommendations on the Transport Dangerous Goods Model Regulations
IIntemational Maritime Dangerous Goods(IMDG)
Occupational Safely and Health Act(OSHA)
Toxic Substances Control Act(CFR)
Tehnical Instructions for the Safe Transport of Dangerous Goods
Califomia Proposition 65
Superfund Amendments and Reauthorization Act Title III (302/311/312/313) (SARA)
In accordance with all Federal,State and local laws.

16. Additional Information

According standard:
GB/T 16483-2008 Safety data sheet for chemical products Content and order of sections
ISO 11014:2009(E) Safety data sheet for chemical products-Content and order of sections
Editing date: December 13, 2021
Department:
Guangzhou Battsys Co.,Ltd.
Building No.10 Standard Industrialarea,Taishi Village,Dongchong Town, Nansha District,Guangzhou City,Guangdong Province,P.R.China.
Tel: 86-20-34925225
Other Information:
The above information is believed to be corrent but does not purport to be all inclusive and shall be used only as a guide. We make no warranty of merchantability or any other warranty express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purposes. In no way shall we be liable for any claims, losses,or damage of any third party or for last profits or any special, indirect,consequential or exemplary damages arising forn using the above information.

Date: December 13, 2021

Approved by: Longsheng Liang

Checked by: Longsheng Liang

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