德章電子技術(深圳)有限公司

MATERIAL SAFETY DATA SHEET

MSDS NO.: **MSDS2201003**

Issue or revised date: Jan. 01, 2022

1. Product and Company Identification	
Product Name	Rechargeable Li-Polymer Battery
Model Name	GKIDT-03-17-3S2P-0
Ratings	3S2P,11.4V,8200mAh,93.48Wh,GF
Manufacturer:	BMSPow Electronic Co., Ltd.
Manufacturer address	No. 401, 3C & No. 201, 6F Juyin Tech Industrial area,1 Ganli Road, jihua Street, Long Gang District, Shenzhen City, Guangdong Province,P.R.China
Emergency Telephone	+86-755-28225151
Fax	+86-755-28225016

2. Hazards Identification

Primary routes of entry: Skin contact, Skin absorption; Eye contact, Inhalation, And ingestion: No.
Symptoms of exposure: Skin contact, No effect under routine handling and use.
Skin absorption: No effect under routine handling and use.
Eye contact: No effect under routine handling and use.
Inhalation: No effect under routine handling and use.
Reported as carcinogen: Not applicable

3. Composition / Identification on Ingredients

Substance: Lithium Ion Battery
CAS number: Not specified
UN Class: Even classified as lithium batteries, they are exempted from dangerous goods.
UN-Recommendations on the Transport of Dangerous Goods Model Regulations.
(ST/SG/AC.10/11/Rev. 4)
Lithium ion battery is not subject to the UN and IATA Regulations if they meet the following provisions.

Cell:
The equivalent Lithium content is not more than 1.5g and Power is not more than 20 watt-hours.
Battery Pack:
The equivalent Lithium content is not more than 9g and Power is not more than 100 watt-hours.

Composition:
2-1. Case: N/A
2-2. Printed Circuit Board Assembly：Not dangerous
2-3. Lithium-ion Cell:

MATERIAL OR INGREDIENT	PEL(OSHA)	TLV(ACGIH)	wt%
Graphite (CAS# 7782-42-5)	5mg/m3 TWA (respirable fraction) 15mg/m3 TWA (tatal dust)	2mg/m3 TWA (respirablefraction)	7~25
Layered Mn-Ni-Co Cathode Materials For Lithium Ion Battery (This substance is a proprietaryformulation of Lithium CobaltManganese Nickel Oxide,and does not have a CAS number.)	0.1mg/m3 TWA(as Co) 1.0mg/m3 TWA(as Ni)	0.02mg/m3 TWA (asCo) 0.2mg/m3 TWA(as Ni) 0.2mg/m3 TWA(as Mn)	6~16(asCo) 6~16(asNi) 6~16(asMn)
Hexafluoropropylene-vinyliden efluoride Copolymer (CAS#9011-17-0)	None established	None established	3~15
Lithium Hexafluorophosphate (CAS#21324-40-3)	None established	None established	0~5
Acetylene Black (CAS#1333-86-4)	3.5mg/m3 TWA (as carbonate black)	3.5mg/m3 TWA (as carbonate black)	0-2
Diethyl Carbonate (CAS#105-58-8)	None established	None established	0-15
Dimethyl Carbonate (CAS#616-38-6)	None established	None established	0-15
Ethyl Methyl Carbonate (CAS#623-53-0)	None established	None established	0-15
Propylete Carbonate (CAS#108-32-7)	None established	None established	0-15
Ethylene Carbonate(CAS#96-49-1)	None established	None established	0-15

4. First Aid Measures

Inhalation: Make the victim blow his/her nose, gargle. Seek medical attention if necessary.
Skin contact: Remove contaminated clothes and shoes immediately. Wash extraneous matter contact region with soap and plenty of water immediately.
Eye contact: Do not rub one's eyes. Immediately flush eyes with water continuously for at least 15 minutes. Seek medical attention immediately.
Ingestion: Make the victim vomit. When it is impossible or the feeling is not well after vomiting, seek medical attention.

5. Fire Fighting Measures

Flash Point: N/A
Auto-Ignition Temperature: N/A
Extinguishing Media : Dry powder, 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

The preferred response is to leave the area and allow the batteries to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and Place material into suitable containers

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.

7. Handling and 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. Store in a cool, dry, well ventilated area. And temperature above 100 degree can result in loss of battery performance, leakage, or rust. Do not expose the battery to open flames.

8. Exposure Controls / Personal Protection

Engineering Controls: Keep away from heat and open flame. Store in a cool dry place
Personal Protection:
Respirator: Not required during normal operations. SCBA required in the event of a fire.
Eye/Face Protection: Not required beyond safety practices of employer.
Gloves: Not required for handling of battery.
Foot Protection: Steel toed shoes recommended for large container handling.

9. Physical and Chemical Properties

State	Solid
Odor	N/A
PH	N/A
Vapor pressure	N/A
Vapor density	N/A
Boiling point	N/A
Solubility in water	Insoluble
Specific gravity	N/A
Density	N/A

10. Stability and Reactivity

Reactivity: None
Incompatibilities: None during normal operation. Avoid exposure to heat, open flame, and corrosives.
Conditions to Avoid: Avoid exposure to heat and open flame. Do not puncture, crush or incinerate.

11. Toxicological Information

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

12. Ecological Information

Lithium ion battery pack can be disposable in accordance with appropriate federal, state and local regulations.

13. Disposal Consideration

Recommended methods for safe and environmentally preferred disposal:
Product(waste from residues)
Do not throw out a used battery cell. Recycle it through the recycling company.
Contaminated packaging
Neither a container nor packing is contaminated during normal use. When internal materials leaked from a battery cell contaminates, dispose as industrial wastes subject to special control.

14. Transport Information

ICAO and IATA, The lithium battery should according with the International Air Transport Association (IATA DGR 63th edition)requirements for transportation. The battery or cell should be packed and signed as following table（If the package according with PI-965 to PI-967 Section II，it is not classified as dangerous cargo）
meets all requirements under UN Manual of Tests and Criteria Part III, subsection 38.3

UN NO.	Proper Shipping Name	Power	Package requirements	Label which need to paste
UN3480	Lithium Ion Batteries (limited toa maximum of 30% SoC)	Cell≤20Wh Battery≤100Wh	PI965 section II	lithium battery handling labelCargo Aircraft Only label
		Cell≤20Wh Battery≤100Wh	PI965 section IB	Class 9 hazard labellithium battery handling labelCargo Aircraft Only label
		Cell≤20Wh Battery≤100Wh	PI965 section IA	Class 9 hazard labelCargo Aircraft Only label
UN3481	Lithium Ion Batteries Containedin Equipment	Cell≤20Wh Battery≤100Wh	PI967 section II	lithium battery handling label
		Cell≤20Wh Battery≤100Wh	PI967 section I	Class 9 hazard label
UN3481	Lithium Ion Batteries PackedWith Equipment	Cell≤20Wh Battery≤100Wh	PI966 section II	lithium battery handling label
		Cell≤20Wh Battery≤100Wh	PI966 section I	Class 9 hazard label

The goods can be shipped by air in accordance with International Civil Aviation Organization (ICAD), TI or International Air Transport Association(IATA), DGR Packing Instructions (PI) PI965 Section Ⅱ appropriate or IATA DGR 63th (2022 Edition) for transportation
The article is not restricted to IMO IMDG Code according to special provision 188.
The goods are packaged according to the packaging requirement of ordinary goods.
Lithium cells and batteries listed in this report were manufactured under the quality management programme as described in IMDG CODE (2018) EDITION 2.9.4.5.
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.

Regulations specifically applicable to the product: Special Prevision A88, A99, A154 and A164
IATA UN 3480 (Li-ion Batteries) and UN3481 (Li-ion Batteries with equipment)
US Department of Transportation (DOT) 49 code of Federal Regulations [USA]
International Civil Aviation Administration (ICAO)
suggestion according to IMO IMDG Code (2018) Edition

15. Regulatory Information

Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria (ST/SG/AC.10/11/Rev.4)
OSHA Hazard communication standard (29 CFR 1910.1200)
Hazardous ： Non-hazardous：√

16. Other Information

The information contained in this Safety data sheet is based on the present state of knowledge and current legislation.
This safety data sheet provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.
Chemical substances information: Japan Advanced Information center of Safety and Health
International Chemical Safety Cards (ICSCs):
International Occupational Safety and Health Information Centre (CIS) 1999 TLVs and BEIs:
American Conference of Governmental Industrial Hygienists (ACGIH)
Wastes Disposal and Public Cleaning Law [Japan]
Law for Promotion of Effective Utilization of resources [Japan]
Production of MSDS proving UN Manual of Tests and Criteria, Part III, sub-section 38.3 is **met.**