



天宇通訊科技(昆山)有限公司
Tian Yu Telecomtek (K.S.)Co.,Ltd

MATERIAL SAFETY DATA SHEET

1. Product and manufacturer

Name : Battery pack
Product number : BI-USP01-4KXBSX-01
Manufacturer name : Tian Yu Communication Technology (Kunshan) Co., Ltd
Tel : +86-512-82600088 +886-2-2218-8888

2. Composition ingredients/identity

Portion	Material name	Concentration/ Concentration range
Positive electrode	Lithium transition metal oxidate(Li[M]m[O]n*2	20~60
Positive electrode`s base	Aluminum	1~10
Negative electrode	Carbon	10~30
Negative electrode`s	Copper	1~15
Electrolyte	Organic electrolyte principally involves ester carbonate	5~25
Outer case	Aluminum,iron,aluminum laminated plastic	1~30

3. Hazard identification

Class name: Not applicable for regulated class
Hazard: It may cause heat generation or electrolyte leakage if battery terminals contact with other metals. Electrolyte is flammable. In case of electrolyte leakage, move the battery from fire immediately.

4. First Aid Measures



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First aid measures of exposure :

The product contains organic electrolyte. In case of electrolyte leakage from the battery, actions described below are required.

- Inhalation : Remove to fresh air immediately. Take a medical treatment.
- Skin contact : Wash the contact areas off immediately with plenty of water and soap. If appropriate procedures are not taken, this may cause sores on the skin.
- Eye contact : Flush the eyes with plenty of clean water for at least 15 minutes immediately, without rubbing. Take a medical treatment. If appropriate procedures are not taken, this may cause an eye irritation.

5. Fire Fighting Measures

Extinguishing Media: Plenty of water, Water fog spray, Dry chemical powder or Carbon dioxide

Possible special hazard : If heated above 120°C, battery pack can explode/vent.

Special Fire Fighting instructions : If possible, remove battery pack from fire fighting area

Firefighting equipment : Use NIOSH/MSHA approved full-face self-contained breathing apparatus (SCBA) with full protective gear.

6. Accidental Release Measures

Points for personal attention : Leave from contaminated area. In case of contact with electrolyte, wash out electrolyte with plenty of water at least 15 minutes. If irritation persists, consult a physician immediately. After cooling, remove spilled electrolyte and batteries with absorbent not to contact with electrolyte.

Cleaning method : Take up with absorbent cloth.

7. Handling and Storage

Handling :

The risk of heat, fire, explosion:

Do not dip or wet the battery in water.

Do not put the battery into a fire or heat it.

Do not solder the battery directly.

Do not use or leave the battery in a place near fire or heaters.

Do not disassemble. Do not apply heavy impact to the battery.

Do not connect the battery reversed in positive (+) and negative (-) terminals in the charger or equipment.

Do not use any battery charger not specified by manufacturer, also, follow the charge conditions specified by manufacturer.



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Do not connect the battery directly to an electric outlet or cigarette heater socket in a car.

Storage :

Store in cool place (preferably below 30°C/86°F) but prevent condensation on cells or batteries.

Charge the battery every 6 months to the amount specified by the manufacturer, even if the battery is not used.

8. Exposure Controls

Engineering controls : Keep away from heat and open flame. Store in a cool dry place.

Personal protection :

Respiratory protection : Not required during normal operations. SCBA required in the event of a fire.

Hand protection : Steel toed shoes recommended for large container handling.

Eye protection : Not required beyond safety practices of employer.

Skin and body protection : Steel toed shoes recommended for large container handling.

9. Physical and Chemical Properties

Physical state : Solid	Appearance : N/A
Color : Black	Odour : N/A
PH : N/A	Boiling point : N/A
Melting point : N/A	Flash point : N/A °F N/A °C
Autoignition : N/A	Explosion point : N/A
Vapor pressure : N/A	Vapor density : N/A
Density : N/A	Water solubility : N/A

10. Stability and reactivity

Stability : None

Reactivity : None during normal operation. Avoid exposure to heat, open flame, and corrosives.

Conditions to avoid : None during normal operating conditions. If cells are opened, hydrogen fluoride and carbon monoxide may be released.

Substance to avoid : Avoid exposure to heat and open flame. Do not puncture, crush or incinerate

Hazardous decomposition : None

11. Toxicological information



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Acute toxicity : NO
Teratogenicity : NO
Sensitization : NO
Reproductive toxicity : NO
Special toxicity : NO

12. Ecological information

General : Lithium ion batteries can be disposable in accordance with appropriate federal, state and local regulations. However, we recommend recycling, since these batteries contain recyclable material (LiCoO₂).

13. Disposal information

Waste disposal : Do not incinerate or subject batteries to temperatures in excess of 100 °C (212°F). Such handling may cause heat generation, explosion, or fire.

14. Transportation information

Based on a United Nations recommendation, the regulation for lithium/lithium ion cells and batteries has been revised in the International Air Transport Association (IATA) dangerous goods regulations (**2014 IATA Dangerous Goods Regulations 55th edition Packing Instruction 965 Section II is applied**). Packaging and transportation are formally regulated according to the amount of lithium contained in lithium ion batteries. Transportation of lithium ion batteries must conform to this regulation. If batteries meet special requirements and contain no more than 1.5 grams of lithium equivalent weight (LEW)*1 for lithium ion cell or no more than 8.0 grams of LEW for lithium ion batteries, they will be classified as "non- hazardous." Please conform to other regulations besides IATA, such as the International Civil Aviation Organization (ICAO), the International Maritime Organization (IMO), and other local regulations at the point of actual transportation. All Maxell lithium ion cells and batteries are classified as "non- hazardous." under above regulations. Battery has been tested under provisions of the UN Manual of Tests and Criteria.

*1) $LEW(g) = \text{Rated Capacity (Ah)} \times 0.3 (g/Ah)$ They can be transported in rigid package not to short-circuit under above regulations.

15. Regulatory information

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

The UN Model Regulations, United Nations UN/ ST/SG/AC.10/12, Recommendations on the Transport of Dangerous Goods,



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The International Civil Aviation Organization (ICAO): Technical Instructions for Safety Transport of Dangerous Goods by Air 2003-2004 Edition (to be published),
The International Air Transport Association (IATA): Dangerous Goods Regulations, 55th Edition,
International Maritime Organization(IMO): International Maritime Dangerous Goods(IMDG) Code.

16. Others

Notice: The information and recommendations set forth are made in good faith and are believed to be accurate as of the date of preparation. Tian Yu makes no warranty expressed or implied.