

0303-0036 0311-0050
 0303-0034 3011-0118

MAXPOWER ENTERPRISES CO., LTD
 Add: WeiHong Industrial Park,SanDong Avenue.East HuaDu,
 GuangZhou, China
 Tel: +86 20 86963755 Fax: +86 20 86963757



Material Safety Data Sheet

| Section 1 (Product Identification) | | |
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| MAXPOWER ENTERPRISES CO., LTD WeiHong Industrial Park,SanDong Avenue, East HuaDu,GuangZhou,China | | Tel: +86-20-86963755 Fax: +86-20-86963757 |
| Product name: CMICR18650F 3.7V 2200mAh Lithium ion battery | | |
| Section 2 (Ingredients and its standard) | | |
| Ingredient | Content | CAS NO |
| Lithium Cobalt Oxygen | 48.02% | 12190-79-3 |
| polyvinylidene fluoride | 1.15% | 24937-79-9 |
| Carbon | 25.35% | 7440-44-0 |
| Aluminum foil | 4.42% | 7429-90-5 |
| Copper foil | 9.77% | 7460-50-8 |
| Polypropylene | 1.09% | 9003-07-0 |
| Lithium hexafluorophosphate | 2.02% | 21324-40-3 |
| Ethylene carbonate | 3.27% | 96-49-1 |
| Dimethyl carbonate | 4.35% | 616-38-6 |
| Raney Nickel | 0.56% | 7440-02-0 |
| Section 3 – Hazards Identification | | |
| <p>Do not short circuit, recharge, puncture, incinerate, crush, immerse, force discharge or expose to temperatures above the declared operating temperature range of the product. Risk of fire or explosion. The Lithium ion batteries described in this Material Safety Data Sheet are sealed units which are not hazardous when used according to the recommendations of the manufacturer</p> <p>Under normal condition of use, the electrode materials and liquid electrolyte they contain are not exposed to the outside, provided the battery integrity is maintained and seals remain intact. Risk of exposure only in case of abuse (mechanical, thermal, electrical) which leads to the activation of safety valves and/or the rupture of the battery containers. Electrolyte leakage, electrode materials reaction with moisture/water or battery vent/explosion/fire may follow, depending upon the circumstances.</p> <p>In case of leakage or explosion:</p> <ul style="list-style-type: none"> • The most common way to invade human body: suck, split Carcinogenicity NTP, IARC, OSHA, regulated • Physical effects: : <ul style="list-style-type: none"> ○ Short term effects –Vapor or mist is irritating to the eyes, mucous membranes and respiratory tract. ○ Long term effects – Long term contact may lead to fiberization of lung. ○ Symptom after contact of electrolyte : Eyes and the respiratory tract get irritated. <p>The bellow symptom will aggravate due to contact of electrolyte: asthma and other respiratory symptoms, skin allergy, eczema.</p> | | |

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Section 4 – Emergency and First Aid Procedures

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes and turn help to the hospital for cure. Electrolyte will burn the eyes

In case of contact of skin, immediately flush eyes with copious amounts of water, to avoid contacting hot water and wearing skin. Go to hospital for cure at once if no any recovery.

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

If takes in, drink copious amounts of water, drink milk when necessary. Vomiting is forbidden. Go to hospital for cure at once instead of giving any food to the comatose injurer.

Section 5 – First aid on firing

Flash point: N/A

Self-kindled temperature: N/A

Kindling point: N/A

Danger: Water is prohibited

Types of fire extinguisher: D grade Lithium-X dry powder, fire extinguisher, lithium chloride dry powder, graphite powder, Pyrenees G-1.

Special fire extinguisher procedures: cover with D grade Lith-X dry powder, fire extinguisher, lithium chloride, graphite powder. Water is profited. Wet sand, CO₂ dry powder fire extinguisher, ABC grade or barilla fire extinguisher are recommended. To wear breath-protection veil automatic oxygen feeder or air purifier while extinguishing fire is required.

Danger of fire and explosion under special conditions: Short circuit, overcharge, over discharge (discharge till the voltage is lower than 0V), crush or exposure at high temperature of 150°C are profited. In case of that, the leakage, explosion will occur. D grade fire extinguisher is recommended instead of water.

Section 6 – Precautions for incidental leakage

Incidental leakage: To breath steam and touch the liquid empty-handed are avoided (See Part 4)

Disposal method: To set up special disposal area and arrange the specially trained persons to prevent the leakage with barilla or calces is recommended. The veil filtered by NIOSH certified acid gas or automatic oxygen feeder must be worn. The leaked battery, barilla and baking soda must be disposed as dangerous substance.

Other: Take reference for the management regulation of reaction to emergency item 138, which is concerned about the battery ejectable explosions.

Section 7 – Usage and storage

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| Handling | Do not crush, pierce, short(+) and (-) battery terminal with conductive (i.e. metal) goods. Do not directly heat or solder. Do not throw into fire. Do not mix batteries of different types and brands. Keep batteries in non conductive trays. |
| Storage | Store in a cool (preferably below 30°C) area, away from moisture, sources of heat, open flames, food and drink. Keep adequate clearance between walls and batteries. Short circuit or exposed at the temperature higher than 150°C overcharge, over discharge, nail penetrate crush are prohibited. Keep batteries in original packaging |

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| | until use and do not jumble them. |
| Other | Follow manufacturers recommendations regarding maximum recommended currents and operating temperature range. The batteries are profited to be stored at high temperature for long time. |

Section 8 – Sealed management and individual protection

When the internal substance is utilized:

- Respiratory protection: NIOSH certified acid gas filter acid gas, automatic oxygen feeder.
- Protective gloves: nitrate or PVC, the thickness of the glove should more than 15ml.
- Eye protection: Chemical safety glasses or veil.
- Ventilation: Vacuum chemical experiment ventilate tank.
- Other protective garments and devices: Special glasses for chemical lab, protective apron, acid-proof experiment garments, veil.
- Sanitation regulations: Consummate chemical sanitation training should be taken, and to take in food during operation of chemical medicine is profited to avoid touching with chemical medicine.

Section 9 – Physical and chemical character

| | |
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| Boiling point: | 110 ~ 130°C |
| Steam pressure: | 8mmHg(20°C) |
| Steam density: | 3.6 (AIR=1) |
| Solubility of water solvent: | Electrolyte: Resolve immediately contact with water |
| Proportion: | Electrolyte: 1.2 ~ 1.4 |
| Melting point: | Electrolyte: -80°C ~ -20°C |
| Volatility: | N/A |
| Reaction with water: | Electrolyte is resolved into CO ₂ and HF then formed into strongly acid liquor. |
| Appearance and odor: | Electrolyte: flint or jasmine, of strong excitive odor |

Section 10 – Stability and Disintegrant

Stability: Stable under conditions described in Section 7

To be avoided: Higher than 150°C, long time on the high humidity environment.

Incompatibility: N/A

Dangerous disintegrant: Carbon Dioxide, Hydrogen Fluoride

Danger of Polymer: not exist

Other: N/A

Section 11 – Toxicity

Virulent:

Electrolyte:

LC₅₀: (Acute oral toxicity): 10 mg (Mouse)

LD₅₀: (Acute oral toxicity): 3 mg (Rabbit)

Effect on eyes: Cauterization

Effect on skin: Cauterization

LiPF₆:

Toxicity: Have side effect on the growth of bones and behaviors.

Section 12 – Eco effect

Toxicity to water environment: LCO \geq 1000mg/L (48h)

The enter of internal substances into ocean environment is prohibited to avoid leakage to the gullet, cloacae or the underground water.

Section 13 – Disposal Precautions

Proper name for transportation: Disposed rechargeable battery

UN No: UN3480

Grade of danger: Non-dangerous goods

Package pattern: II

Trademark requirement: Mixed dangerous disposal

Disposal code: D003

Other: All the Lithium-ion battery must be disposed with the certified disposal tools for dangerous wastes, and the disposal tools of Battery Engineer Company are recommended.

Section 14 – Requirement for transportation

It must comply with standards US DOT (per CFR 172.101) and IATA/ICAO.

Proper name for transportation: Li-ion battery

UN No: UN3480

Grade of danger: Non-dangerous goods

Package pattern: II

Trademark requirement: Non-dangerous goods

The Li ion batteries which are produced by MINMAX ENERGY TECHNOLOGY CO., LTD. meet with all the requirements of UN Manual of Tests and criteria Part III, subsection 38.3

Section 15 – Adjusted information

Occupational Safety and Health Act of America: The standard of dangerous goods according to the Occupational Safety and Health Act of America Part 29:

Requirement for transportation: All the lithium battery and battery packs must comply with the requirement of sea transportation 49 CFR 173.185. All the lithium batteries whose lithium content is between 0.5~12g must comply with the transportation regulations of DOT and IATA. The single cell whose lithium content is less than 0.5g and the battery packs whose lithium content is less than 1.0g and be transported at any way. The batteries with its lithium content or the lithium alloy content is more than 12g must be limited for its transportation by government, and they can not be transported according to the above mentioned regulations.

IATA: The lithium batteries must be stored separately in the insulated container to avoid the external short circuit. Every container can not store batteries whose lithium content is more than 500g. Every UN certified

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fiber carton, metal pail, plastic pail and wooden pail must be separated by fire-proof materials of at least one inch. The package for battery transportation must be marked the signs of UN. (The sixth part of the transportation Regulation IATA).

Section 16 – Other information

This information has been compiled from sources considered to be dependable and is, to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty (either expressed or implied) or guarantee is made to the accuracy, reliability or completeness of the information contained here in.

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