

# Material Safety Data Sheet

## 1. Product and Company Identification

|                                 |  |
|---------------------------------|--|
| <b>Name of goods</b>            | Lithium-ion Battery  |
| <b>Type / Mode</b>              | <b>ICR18650(7.2V/ 31.68Wh/ 4400mAh)</b>  |
| <b>Manufacturer</b>             | <b>Shenzhen Rishengzhi Electronics Technology Co.,Ltd</b>  |
| <b>Manufacturer address</b>     | 4F, Building8, Huafeng Overseas Students Industrial Park, NO.1 Baolong Road, Longgang District Shenzhen, China |
| <b>Inspection according to</b>  | EEC Directive 93/112/EC<br>UN "Recommendations on the TRANSPORT OF DANGEROUS GOODS"                            |
| <b>Emergency telephone call</b> | 0755-28247932  |

## 2. Composition Information

| Chemical Composition | Chemical Formula  | CAS No.    | Weight (%) |
|----------------------|---|------------|------------|
| Lithium Cobalt Oxide | LiCoO <sub>2</sub>  | 12190-79-3 | 37.11%     |
| Carbon Black         | C   | 1333-86-4  | 1.35%      |
| PVDF                 | (CH <sub>2</sub> -CF <sub>2</sub> ) <sub>n</sub>  | 24937-79-9 | 0.66%      |
| Graphite powder      | C   | 7782-42-5  | 19.35%     |
| CMC                  | [C <sub>6</sub> H <sub>7</sub> O <sub>2</sub> (OH) <sub>2</sub> CH <sub>2</sub> COONa] <sub>n</sub> | 9004-32-4  | 0.37%      |
| SBR                  | (C <sub>8</sub> H <sub>8</sub> C <sub>4</sub> H <sub>6</sub> ) <sub>x</sub>                         | 9003-55-8  | 0.46%      |
| Electrolyte          | LiPF <sub>6</sub>   | 21324-40-3 | 13.51%     |
| Copper Foil          | Cu  | 7440-50-8  | 8.77%      |
| Aluminum Foil        | Al  | 7429-90-5  | 3.18%      |
| Aluminum strip       | Al  | 7429-90-5  | 0.10%      |
| Nickel strip         | Ni  | 7440-02-0  | 0.40%      |
| Steel case           | Fe  | 7439-89-6  | 6.68%      |
| Steel cap            | Fe  | 7439-89-6  | 5.96%      |
| Separator            | -[CH(CH <sub>3</sub> )CH <sub>2</sub> ] <sub>n</sub> -  | 9002-88-4  | 2.10%      |

### 3. Hazards Identification

|                         |  |
|-------------------------|--|
| <b>Explosive risk</b>   | This article does not belong to the explosion dangerous goods  |
| <b>Flammable risk</b>   | This article does not belong to the flammable material   |
| <b>Oxidation risk</b>   | This article does not belong to the oxidation of dangerous goods   |
| <b>Toxic risk</b>       | This article does not belong to the toxic dangerous goods  |
| <b>Radioactive risk</b> | This article does not belong to the radiation of dangerous goods   |
| <b>Mordant risk</b>     | This article does not belong to the corrosion of dangerous goods   |
| <b>Other risk</b>       | This article is Lithium-ion Battery, Watt hour rate 31.68Wh, 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 measure

**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 incinerate, 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. Do not 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.

**9. Physical and chemical properties**

**Appearance:** Cylinder shape

**Ref, No.:**

**Odour:** 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. Stability and reactivity**

**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:** Oxidising 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 alkalies, halogenated hydrocarbons.

**11. Toxicological information**

**Signs & symptoms:** None, unless battery ruptures.

In the event of exposure to internal contents, vapour 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 severe 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 in excess of 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.

**UN Number**: UN3480

**Packaging Group**: N/A

**EmS No**:4.1-06

**Marine pollutant**: No

**Proper Shipping name**: Lithium ion batteries

**Hazard Classification**: The goods shall be complied with the requirements of Section II of Packing Instructions 965 of 58<sup>th</sup> DGR Manual of IATA (2017 edition) or special provision 188 of IMDG CODE (Amdt.37-14) 2014 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)  
《Superfund Amendments and Reauthorization Act Title III (302/311/312/313)》  
(SARA)  
《Resource Conservation and Recovery Act》 (RCRA)  
《Safety Drinking Water Act》 (CWA)  
《California Proposition 65》  
《Code of Federal Regulations》 (CFR)

#### **16. Other information**

The data in this Material Safety Data Sheet relates only to the specific material designate herein.

For more information, please contact:

Tony.x

Address: 4F,Building8,Huafeng Overseas Students Industrial Park,NO.1 Baolong Road,Longgang District Shenzhen,China

Tel: 86-755-28247932

Fax: 86-755-28401683

Email: Tony.x@szsz.com

MSDS Creation Date : 2017-01-04