



MATERIAL SAFETY DATA SHEET

ROOFER Battery Co., Ltd
983855AL-1800mAh

MSDS No: P1/P2-10-1051/A/A

Product Name: Lithium Ion Battery Cell

Issued and Revised Date: 7-SEPTEMBER-2016

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Lithium Ion Battery Cell
Applicable Models/Sizes: All

Supplier Identification:

ROOFER Battery Co., Ltd.
No 138, Xikeng Road, Longhua Town, Fucheng Street, Shenzhen City,
China
TEL: 86-755-33863066 FAX: 86-755-33863111,

Contact Point:

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2. COMPOSITION / INFORMATION ON INGREDIENTS

Information about the chemical nature of product:

Composition	Molecular formula	CAS No.	Weight (%)
Lithium cobalt oxide	LiCoO ₂	12190-79-3	41-49%
Carbon	C	7440-44-0	24-26%
Lithium hexafluorophosphate	LiPF ₆	21324-40-3	3-7%
PVDF	(CH ₂ -CF ₂) _n	24937-79-9	0.8-1.5%
Acetylene Black	C	1333-86-4	0.7-1.2%
SBR	(C ₈ H ₈ .C ₄ H ₆) _x	9003-55-8	0.4-0.9%
EC	C ₃ H ₄ O ₃	96-49-1	4-5%
DMC	C ₃ H ₆ O ₃	616-38-6	2.9%
Aluminium	Al	7429-90-5	4-5%
Copper	Cu	7440-50-8	6-9%
Dissepiment	/	/	0.2-0.8%
Others	/	/	3-8%

3. HAZARDS IDENTIFICATION

All chemical materials of lithium ion battery cell are stored in a hermetically sealed metal case, designed to withstand temperatures and pressures encountered

during normal use. There is no physical danger of ignition or explosion and chemical

danger of hazardous materials' leakage during normal use. However, if exposed to a fire, added mechanical shocks, decomposed, added electric stress by miss-use, the gas release vent will be operated and hazardous materials may be released.

Potential Health Effects:

Cobalt and Cobalt compounds are considered to be possible human carcinogen(s). These chemicals may cause allergic skin sensitization (rash) and irritate eyes, skin, nose, throat, respiratory system.

Since electrolyte is flammable liquid, it does not bring close to fire. It may cause moderate to severe eye irritation, dryness of the skin. Breathing of its mist, vapor or fume may irritate nose, throat and lungs. Exposure of electrolyte material in the area which contains water may generate hydrofluoric acid, which can cause immediate burns on skin, severe eye burn. The ingestion of electrolyte can cause serious chemical burns of mouth, esophagus and gastrointestinal tract.

4. FIRST-AID MEASURES

- ▶ Eyes: Flush with water for at least 15 minutes. If irritation occurs and persists, contact a medical doctor.
- ▶ Skin: Remove contaminated clothing and thoroughly wash with soap and plenty of water. If irritation persists, contact a medical doctor.
- ▶ Inhalation: Remove to fresh air. If breathing difficulty or discomfort occurs and persists, see a medical doctor. If breathing has stopped, give artificial respiration and see a medical doctor IMMEDIATELY.

5. TOXICOLOGICAL INFORMATION

Eco Toxicological Information: No information available.

Local Environmental Effects: Unknown.

Since some internal materials remain in the environment, do not bury or throw out into the environment.

6. FIRE-FIGHTING MEASURE

- ▶ Hazardous Combustion Products: When burned, hazardous products of combustion including fumes of carbon monoxide, carbon dioxide, and fluorine can occur
- ▶ Extinguishing Media: Water, carbon dioxide, dry chemical, or foam.
- ▶ Basic Fire Fighting Procedures: Wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
- ▶ Unusual Fire & Explosion Hazards: This material does not represent an unusual fire or explosion hazard.

Flash Point: 38°C (CC) (100F)

Autolgnition Temperature: No Data.

Flammability Limits in Air, Lower, % by Volume: 1.4

Flammability Limits in Air, Upper, % by Volume: 11

7. ACCIDENTAL RELEASE MEASURES

- ▶ Procedure for Release and Spill: Sweep up and place in a suitable container, dispose or waste according to all local, state and Federal Laws and Regulations.
- ▶ Before cleanup measures begin, review the entire MSDS with particular attention Potential Health Effects; and on Recommended Personal Protective Equipment.

8. HANDLING AND STORAGE

- ▶ Handling

Specific safe handling advice: Never throw out cells in a fire or expose to high temperatures. Do not soak cells in water and seawater. Do not expose to strong oxidizers.

Do not give a strong mechanical shock or throw down. Never disassemble, modify or deform. Do not connect the positive terminal to the negative terminal with electrically conductive material.

► Storage conditions (suitable, to be avoided): Do not place the battery cell near heating equipment, nor expose to direct sunlight for long periods. Elevated temperatures can result in shortened battery cell life and degrade performance.

Store in cool place (temperature: -20-45C, humidity: 45-75%).

Incompatible products: Conductive materials, water, seawater, strong oxidizers and strong acids

Packing material (recommended, not suitable): Insulative and tearproof materials are recommended.

9. EXPOSURE CONTROLS / PERSONAL PROTECTION

► Engineering controls: Investigate engineering techniques to reduce exposures use with adequate ventilation and recommended personal protective equipment.

► Eye/Face protection: Use good industrial practice to avoid eye contact. Processing of this product releases vapors or fumes which may cause eye irritation. Where eye contact may be likely wear chemical goggles and have eye flushing equipment available

► Skin protection: Minimize skin contamination by following good industrial hygiene practices. Wearing protective gloves is recommended. Wash hands and contaminated skin thoroughly after handling.

► Respiratory protection: Avoid breathing dust and processing vapors. When adequate ventilation is not available, wear a NIOSH/MSHA respirator approved for protection against inorganic dusts.

► Special clothing: Robber gloves.

10. PHYSICAL DATE

Physical state: Solid

Form: Geometric solid

Color: Metallic color (without outer PVC cover)

Odor: No odor

pH: Not Applicable

Flash point: Not Applicable

Explosion properties: Not Applicable

Density: Not Applicable

Solubility: Not Soluble

11. STABILITY AND REACTIVITY

Hazardous reactions may occur under some specific conditions.

► Conditions to avoid: When a battery cell is exposed to an external short-circuit, crushes, modification, high temperature above 100 degree C, it will be the cause of heat generation and ignition. Avoid to be exposed to direct sunlight and high humidity.

► Materials to avoid: Conductive materials, water, seawater, strong oxidizers and strong acids.

► Hazardous decomposition products: Acrid or harmful gas is emitted during fire.

12. ECOLOGICAL INFORMATION

Ecological Information: No information available.

13 DISPOSAL INFORMATION

Waste disposal must be in accordance with the applicable regulations. Disposal of the lithium ion battery cells should be performed by permitted, professional disposal Page:

firms knowledgeable in State or Local requirements of hazardous waste treatment and hazardous waste transportation. Incineration should never be performed by battery but users, eventually by trained professional in authorized facility with proper gas and fume treatment.

14. TRANSPORTATION/SHIPPING INFORMATION

In the case of transportation, confirm no leakage and no overspill from a container. Take in a cargo of them without falling, dropping and breakage. Prevent collapse of cargo piles and wet by rain. The container must be handled carefully. Do not give shocks that result in a mark of witting on a cell. Please refer to section 8- HANDLING AND STORAGE also.

Codes and classifications according to:

International regulations for transport Air IATA-DGR: Section IBOF PI 965/966/967 of IATA-DGR.

International regulations for transport Sea IMDG CODE: special provision 188
National regulations for transport land GB12268-2005.

The UN classification number: class 9 3480

However, since it corresponds to special provision Section IB OF PI 965/966/967 of IATA-DGR, special provision 188 of IMDG CODE, GB12268-2005 of land regulations, this battery cell can be conveyed normally.

Lithium battery dose not contains any recalled/defective battery and meeting Packing Instruction section IB OF PI 965/966/967 of IATA-DGR.

Production of MSDS proving UN manual of Tests and Criteria, part III, sub-section 38.3 is met on MSDS.

15. REGULATORY INFORMATION

Special requirement be according to the local regulatories.

16. OTHER INFORMATION

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

For more information contact:

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Remark: products in transportation are safe, if there is explosion or flame in transportation, we suggest using dry powder fire extinguisher.

Approval: 

Auditing: 

Organization: 