

## MATERIAL SAFETY DATA SHEET

Issued and Revised Date: 26th-Nov.,2014

### 1. Material and Company Identification

#### 1.1 Product Identification

Product Name: Lithium Ion Rechargeable battery

Model: 18650-2000mAh 3.7V

#### 1.2 Manufacturer:

SHENZHEN GREENERGY TECHNOLOGY CO., LTD

2/F, Bldg 7<sup>th</sup>, Townfull Industrial Zone, Huaxing Road, Dalang, Longhua, Shenzhen, China

TEL: (86)755 – 89335286

FAX: (86)755 – 22705210

#### 1.3 Valid Date:2014.01.01-2014.12.31

### 2.Substance Identification

INGREDIENTS	%	CAS NUMBER
Lithium Cobaltate	30.60%	12190-79-3
Graphite powder	15.06%	7782-42-5
Rubber	10.36%	69028-37-1
Carbon black	0.79%	1333-86-4
Styrene-butadiene rubber(SBR)	0.71%	61789-96-6
Polypropylene	1.74%	9003-07-0
Polyethylene	1.27%	9002-88-4
Lithium hexafluoro phosphate	1.275	21324-40-3
Ethylene carbonate (EC)	6.34%	96-49-1
Diethy carbonate (DEC)	4.76%	105-58-8
Propylene carbonate (PC)	1.11%	108-32-7
Polycaprolactam (NYLON 6)	1.11%	25038-54-4
Copper	9.65%	7440-50-8
Aluminium	4.12%	7429-90-5
Nickel	1.27%	7440-02-0
Polymide Film	0.43%	58698-66-1

### 3.Hazards Identification:

Primary routes of entry: Skin contact, Skin absorption; Eye contact, Inhalation.

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: No applicable

### 4. First Aid Measures

This information and recommendations set forth are made in good faith and believed to be accurate as of the date of preparation, **Shenzhen Greenergy Technology Co., Ltd**, makes no warranty, expressed or implied, with respect to this information and disclaims all liabilities from reliance on it.

Ingestion: If swallowed, Obtain medical attention immediately.

Inhalation: Leave area immediately and seek medical attention.

Eye contact: Rinse eyes with water for 15 minutes and seek medical attention.

Skin contact: Wash area thoroughly with soap and water and seek medical attention.

Ingestion: Drink milk/water and induce vomiting; seek medical attention.

## 5. Fire Fighting Measures

Extinguishing Media: Use extinguishing media suitable for the material that are burning.

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

## 6. Accidental Release Measures

On Land: Place material into suitable containers and call local fire/police department.

In water: If possible, Remove from water and call local fire/police department.

## 7. Handling And Storage

Handling: No special protective clothing required for handling individual pack.

Storage: Store in a cool, dry place

## 8. Exposure Controls/Personal Protection

Engineering controls: Keep away from heat and open flame.

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 are 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

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

Sensitization: no	Teratogenicity: no	Reproductive toxicity: no	Acute toxicity: no
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This product does not contain any kinds of the following substances and halogen-type flame retardants including Chlorine and Bromide type harmful flame retardants which are listed in Appendix of TCO documents and relevant international ECO requirements:

Polybromated Biphenyls	(PBB)
Polybromated Biphenyl Ethers	(PBBE)
Polybromated Biphenyl Oxides	(PBBO)
Polybromated Diphenylethers	(PBDE)
Polybromated Biphenyl	(PCB)
Polybromated Diphenylethers	(PCDE)
Tetrabromophenol A	(TBBPA)

Asbestos, Antimonytrioxide, Dioxine

None of the following substances will be exposed, leaked, or emitted during transportation, storage or any operation and any temperature condition:

Chlorinated Fluorohydro carbon (FCKW)

Acrylnitrile, Styrol, Phenol, Benzol

Mercury of greater than 0.0001wt% for alkaline battery Mercury of greater than 0.0005wt% for other battery lithium content of greater than 0.5g/cell, 1.5g/battery Cadmium, Lead, and other harmful heavy metal.

This product does not contain mercury, cadmium and lithium-metal.

Mercury content: N/A

Lithium-metal: N/A

Cadmium content: N/A

If the cells are opened through misuse or damage, discard immediately. Internal components of cell are irritants and sensitizers.

#### 4. ECOLOGICAL INFORMATION

Some materials within the cell are bioaccumulative, under normal conditions, these materials are contained and pose no risk to persons or the surrounding environment.

#### 5. DISPOSAL CONSIDERATIONS

CALIFORNIA REGULATED DEBRIS

RCRA Waste code: Non-regulated

Dispose of according to all federal, state, and local regulations.

#### 14. Transport Information

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For the international transport of lithium ion cells/batteries, they must comply with these regulations: the International Maritime Dangerous Goods (IMDG) Code by International Maritime Organization (IMO), Dangerous Goods Regulations (DGR) by International Air Transport Association (IATA) and Technical Instructions for the Safe Transport of Dangerous Goods by Air (TI) by International Civil Aviation Organization (ICAO). These regulations are based on the UN Recommendations on the Transport of Dangerous Goods, manual of test and Criteria.

Lithium ion cells/batteries which meet the requirement of UN38.3 (UN Manual of tests and criteria, part III, subsection 38.3) could be transported by air and by sea as ordinary goods, otherwise should be transported according to Class 9, Packing Group II hazardous goods.

As the published of the UN Recommendations on the Transport of Dangerous Goods, all these regulations have added some new contents to regulate the transport of lithium ion batteries.

1. For lithium ion cells/batteries, UN ID number is 3480, for lithium ion batteries contained in equipment or lithium ion batteries packed with equipment , UN ID number is 3481.
2. The consignment should be fully described by proper shipping name and packed, marked and in proper condition for carriage by air. The consignment is not classified as dangerous under the current edition of the IATA 55th, 2014, Effective, Dangerous goods regulation and all applicable carrier and government regulations.
3. For transported by air, lithium ion cells/batteries shipped as "Not Restricted" Cargo: Must comply with section II of PI965 according. For cells ,the Watt-hour rating should not be more than 20Wh. For batteries, the watt-hour rating should not be more than 100Wh, Watt-hour rating must be marked on the outside of the battery case (marked by manufacturer).
4. Each consignment must be accompanied with a document such as an air waybill with an indication. For those lithium ion cells/batteries contained in equipment, the equipment must be equipped with an effective means of preventing accidental activation. The telephone number for additional information for Greenergy cells is 86-755-89335286,
5. Each package must be capable of withstanding a 1.2m drop test in any orientation without damage of cells or batteries contained therein.
6. Lithium batteries which meet the requirements of A154 could be transported by air, and the batteries manufactured by Greenergy meet these requirements. (A154 lithium batteries identified by the manufacturer as being defective for safety reasons, or that have been damaged , that have the potential of producing a dangerous evolution of heat, fire or short circuit are forbidden for transport).
7. Cells and batteries must be protected so as to prevent short circuit, this include protection against contact with conductive materials within the same packaging that could lead to short circuit.

## 15. Other Information

The information is not effective to all the batteries manufactured by Greenergy , this information comes from reliable sources, but no warranty is made to the completeness and accuracy of information contained. Greenergy doesn't assume responsibility for any damage or loss because of misuse of batteries.