

**MATERIAL SAFETY DATA SHEET**

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**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION****PRODUCT IDENTIFICATION****Lithium Ion Rechargeable Battery****MANUFACTURER****JIANGSU TENPOWER LITHIUM CO., LTD****ADDRESS****JINFENG TOWN, ZHANGJIAGANG CITY, JIANGSU PROV. CHINA****DATE :****2012-10-26****TELEPHONE:****86- 512 – 58539605****FAX:****86-512 – 58539610****2. COMPOSITION INFORMATION**

<b>INGREDIENTS</b>	<b>%</b>	<b>CAS NUMBER</b>
Aluminum Foil	2-10	7429-90-5
Metal Oxide (proprietary)	20-50	Confidential
Polyvinylidene Fluoride (PVDF)	<5	24937-79-9
Copper Foil	2-10	7440-50-8
Carbon (proprietary)	10-30	7440-44-0
Electrolyte (proprietary)	10-20	Confidential
Aluminum and inert materials	Remainder	N/A

**3. HAZARDS IDENTIFICATION****PRIMARY ROUTES OF ENTRY****Skin contact, Skin absorption, Eye contact, Inhalation, and 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**

Not applicable

**4. FIRST AID MEASURES**

**INHALATION, EYE CONTACT, and SKIN CONTACT** : Not a health hazard.

**INGESTION**

If swallowed, obtain medical attention immediately.

If exposure to internal materials within cell due to damaged outer casing, the following actions are recommended.

**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****GENERAL HAZARD**

Cell is not flammable but internal organic material will burn if the cell is incinerated.  
Combustion products include, but are not limited to hydrogen fluoride, carbon monoxide and carbon dioxide.

#### EXTINGUISHING MEDIA

Use extinguishing media suitable for the materials that are burning.

#### SPECIAL FIREFIGHTING INSTRUCTIONS

If possible, remove cell(s) from fire fighting area. If heated above 120 °C, cell(s) can explode/vent.

#### 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 cells.

#### STORAGE

Store in a cool, dry place.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### ENGINEERING CONTROLS

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

#### 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 cells.

Foot protection: Steel toed shoes 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.

### HAZARDOUS DECOMPOSITION PRODUCTS

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

### CONDITIONS TO AVOID

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

## 11. TOXICOLOGICAL INFORMATION

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)

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Polybromated Biphenyl Oxides	(PBBO)
Polybromated Diphenylethers	(PBDE)
Polychlorinated Biphenyl	(PCB)
Polychlorinated 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 Fluorohydrocarbon (FCKW)  
Acrylonitrile  
Styrol  
Phenol  
Benzol  
Mercury of greater than 0.0001 wt% for alkaline battery  
Mercury of greater than 0.0005 wt% for other battery  
Lithium content of greater than 0.5g/battery cell  
Cadmium, lead, and other harmful heavy metal

And will comply with the regulation of 49 CFR (DOT regulation), International Air Transport Association (IATA), and Deuche Forschungsgemeinschaft (DFG) regarding concentrations of emitted substances.

This product does not contain mercury and lithium-metal.

Mercury content: <

Lithium-metal content: <

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

## 12. 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.

## 13. DISPOSAL INFORMATION

Recommended methods for safe and environmentally preferred disposal :

**Product(waste from residues)**

Do not throw out a used battery cell. Recycle it through the recycling company.

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**Contaminated packaging**

Neither a container nor packing is contaminated during normal use. When internal materials leaked from a battery cell contaminates, dispose as industrial wastes subject to special control.

RCRA Waste Code: Nonregulated

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

## 14. TRANSPORTATION INFORMATION

Lithium ion batteries containing no more than 1.5g/cell and 8g/battery pack of lithium can be treated as “Non-dangerous goods” under the United Nations Recommendations on the Transport of Dangerous Goods, Special Provision 188, provided that packaging is strong and prevent the products from short-circuit.

With regard to air transport, the following regulations are cited and considered:

- The International Civil Aviation Organization (ICAO) Technical Instructions (2006-2007Edition)
- The International Air Transport Association (IATA) Dangerous Goods Regulations (52th Edition: complies with current IATA Section II of PI965-967)
- The International Maritime Dangerous Goods (IMDG) Code (2002 Edition),
- The US Hazardous Materials Regulation (HMR) pursuant to a final rule issued by RSPA (Part 49 CFR Sections 100-185),
- The Office of Hazardous Materials Safety within the US Department of Transportation’s (DOT) Research and Special Programs Administration (RSPA), and
- The UN Recommendations on the Transport of Dangerous Goods Model Regulations and the Manual of Tests and Criteria.

Our products are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to all the applicable international and national governmental regulations, no limited to the above mentioned. We further certify that the enclosed products have been tested and fulfilled the requirements and conditions in accordance with UN Recommendations (T1-T8) on the Transport of Dangerous Goods Model Regulations and the Manual of Testes and Criteria that can be treated as “Non-Dangerous Goods”.

### Test results of the UN Recommendation on the Transport of Dangerous Goods

Manual of Test and Criteria (38.3 Lithium battery)		Test Results	Remark
No	Test item	Pass	
T1	Altitude Simulation	Pass	
T2	Thermal Test	Pass	
T3	Vibration	Pass	
T4	Shock	Pass	
T5	External Short Circuit	Pass	
T6	Impact	Pass	
T7	Overcharge	Pass	For pack only
T8	Forced Discharge	Pass	For cell only

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**15. REGULATORY INFORMATION**

OSHA hazard communication standard (29 CFR 1910.1200)

Hazardous       Non-hazardous

**16. OTHER INFORMATION**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide.

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Prepared and Approved By  
Jingsu Tenpower Lithium Co., Ltd

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