



**SHENZHEN GREPOW BATTERY CO.,LTD.**

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Date: Dec 03, 2014

Report No:GRP-MSDS-2014001

# **MATERIAL SAFETY DATA SHEET REPORT**

ADD: WUSHIGANG, CHUANGYIROAD, TONGFUYUINDUSTRIALPARK, LONGHUA VILLAGE,  
BAOANDISTRICT, SHENZHEN, CHINA

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**Section 1. Product Identification**

Product Name:	Rechargeable Lithium Polymer Battery
Company of Producing:	ShenZhen Grepow Battery Co.,Ltd
Models:	Rechargeable Lithium Polymer Battery684764-2500mAh-7.4V
Address:	Tongfuyu Industrial Zone,Gao Feng,Dalang St,Baoan,Shenzhen,Guangdong
Tel:	0755-27043518
Fax:	0755-61558171
Post code:	518100

**Section 2. Hazards Identification**

No harm at the normal use. If contact the electrolyte in the battery, reference as follows:

**Classification of the substance or mixture****Classification according to GHS**

Not a dangerous substance according to GHS

**Label elements****Labelling according to Regulation (EC) No 1272/2008[CLP]**

**Hazard pictogram(s):** No available

**Signal word:** No available

**Hazard statement(s):** No available

**Precautionary statement(s):**

**Prevention:** No available

**Response:** No available

**Disposal:** No available

**Other hazards** No information available.

**Section 3. Composition,Information on Ingredients**

Composition	CAS NO	EC#	Weight (%)
Lithium Cobalt Oxide	12190-79-3	235-362-0	42.86
PVDF	24937-79-9	200-867-7	0.57
Graphite	7782-42-5	231-955-3	21.23
Electrolyte	21324-40-3	244-334-7	13.3
CMC	9004-32-4	900-432-4	0.4
Copper Foil	7440-50-8	231-159-6	13.19
Aluminum Foil	7429-90-5	231-072-3	7.25
Aluminum	7429-90-5	231-072-3	0.08
Nickel	7440-02-0	231-853-9	0.23
Carbon	1333-86-4	231-153-3	0.89

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### Section 4. First Aid Measures

#### Description of first aid measures

**General information** No special measures required.

#### After eye contact

Flush eyes with plenty of water for several minutes while holding eyelids open. Get medical attention if irritation persists.

#### After skin contact

Remove contaminated clothing and shoes. Immediately wash with water and soap and rinse thoroughly. Wash clothing and shoes before reuse. If irritation occurs, get medical attention.

#### After inhalation

Remove victim to fresh area. Administer artificial respiration if breathing is difficult. Seek medical attention.

#### After swallowing

Do not induce vomiting. Get medical attention.

#### Information for doctor:

#### Indication of any immediate medical attention and special treatment needed

No further relevant information available.

### Section 5. Fire Fighting Measure

**Flammability:** Not available.

#### Extinguishing media

#### Suitable extinguishing agents

Use extinguishing agent suitable for local conditions and the surrounding environment. Such as dry powder, CO<sub>2</sub>.

#### Special hazards arising from the substance or mixture

Battery may burst and release hazardous decomposition products when exposed to a fire situation. Lithium ion batteries contain flammable electrolyte that may vent, ignite and produce sparks when subjected to high temperature(>150°C (302°F)), when damaged or abused (e.g. mechanical damage or electrical overcharging); May burn rapidly with flare-burning effect; may ignite other batteries in clothes proximity.

#### Advice for firefighters

**Protective equipment:** Wear self-contained respirator. Wear fully protective impervious suit.

### Section 6. Accidental Release Measures

#### Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation.

#### Environmental precautions

Do not allow material to be released to the environment without proper governmental permits.

#### Steps to be taken in case material is spilled or released

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Remove ignition sources, evacuate area. Sweep up using a method that does not generate dust. Collect as much of the spilled material as possible, placed the spilled material into a suitable disposal container. Keep spilled material out of sewers, ditches and bodies of water.

**Waste disposal method**

All waste must refer to the United Nations, the national and local regulations for disposal.

**Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## Section 7. Handling and storage

**Handling****Precautions for safe handling**

Consumption of food and beverage should be avoided in work areas.

Wash hands with soap and water before eating, drinking.

Ground containers when transferring liquid to prevent static accumulation and discharge.

**Information about fire and explosion protection**

Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures.

Do not short or install with incorrect polarity.

**Conditions for safe storage, including any incompatibilities****Requirements to be met by storerooms and receptacles**

Store in a cool, dry, well-ventilated place.

**Information about storage in one common storage facility**

Keep away from heat, avoiding the long time of sunlight.

**Further information about storage conditions**

Keep container tightly sealed.

**Specific and use**

No further relevant information available.

## Section 8. Exposure Controls, Person Protection

**Control parameters****Ingredients with limit values that require monitoring at the workplace:**

12190-79-3 Lithium Cobalt Oxide

TLV (USA)	0.02mg/m <sup>3</sup>
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MAK(Germany)	0.1mg/m <sup>3</sup>
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**Exposure controls**

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**Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

**Respiratory Protection**

Use suitable respirator when high concentrations are present.

**Section 9. Physical and Chemical Properties**

## Information on basic physical and chemical properties

## General information

Appearance	Silver
Form:	quadrate
Odour:	Odorless
PH:	Not available
Change in condition:	Not available
Melting point:	Not available
Boiling point:	Not available
Freezing point:	Not available
Flash point:	Not available
Flammability:	Not available
Ignition temperature:	Not available
Decomposition temperature:	Not available
Self-igniting	Not available
Danger of explosion:	Not available
Explosion limits:	
Lower:	Not available
Upper:	Not available
Oxplosion limits:	Not available
Vapour pressure:	Not available
Density:	Not available
Relative density:	Not available
Vapour density:	Not available
Evaporation rate:	Not available
Solubility in water	Insoluble
n-octanol/water partition coefficient:	Not available
Viscosity:	Not available
Dynamic:	Not available
Kinematic:	Not available

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Other information:	
Voltage:	7.4V
Electric capacity:	2500mAh

## Section 10. Stability and Reactivity

**Reactivity:** Data not available.**Chemical stability:** Stable.**Possibility of hazardous reactions:** Data not available.**Conditions to Avoid**

Flames, sparks, and other sources of ignition, incompatible materials.

**Incompatibilities**

Oxidizing agents, acid, base.

**Hazardous Combustible Products**

Carbon monoxide, carbon dioxide, lithium oxide fumes.

**Hazardous Polymerization**

N/A.

## Section 11. Toxicological Information

**Information on toxicological effects****Acute toxicity****LD/LC50 Values relevant for classification:**

Not available.

**Primary irritant effect**

No further relevant information available.

**Sensitization:**

No further relevant information available.

**Additional toxicological information:****Toxicological, metabolism and distribution:**

No further relevant information available.

**Acute effects (acute toxicity, irritation and corrosivity):**

No further relevant information available.

**CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):**

No further relevant information available.

## Section 12. Ecological Information

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### Toxicity

**Aquatic toxicity:** No further relevant information available.

**Persistence and degradability:** No further relevant information available.

### Behaviour in environmental systems

**Bioaccumulative potential:** No further relevant information available.

**Mobility in soil:** No further relevant information available.

### Ecological effects

#### Additional ecological information

#### General notes:

Do not allow material to be released to the environment without proper governmental permits.

**Other adverse effects:** No further relevant information available.

## Section 13. Disposal Considerations

### Waste treatment methods

#### Recommendation:

Consult state, local or national regulations to ensure proper disposal.

#### Uncleaned packaging

**Recommendation:** Disposal must be made according to official regulations.

## Section 14. Transport Information

This report applies to by sea, by air and by land;

The Li-ion Battery tested according to the requirements of the 5th revised edition amend1 of the UN manual of tests and Criteria, Part III, subsection 38.3;

Lithium ion battery was protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to short circuit;

The LITHIUM ION BATTERY according to Section II of PACKING INSTRUCTION 967 of the 2014 IATA Dangerous Goods regulations 55th Edition may be transported and applicable U.S.DOT regulations for the safe transport of Li-ion Battery.

The packaging shall be adequate to avoid mechanical damage during transport, handling and stacking. The materials and pack design shall be chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of moisture.

The package must be handled with care and that a flammability hazard exists if the package is damaged;

Each package must be labeled with a Li-ion Battery handling label or in addition to the Class 9 hazard label.

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

- The International Civil Aviation Organization (ICAO) Technical Instructions.
- The International Air transport Association (IATA) Dangerous Goods Regulations.
- The International Maritime Dangerous Goods (IMDG) Code.

For lithium-ion batteries by sea, provided that packaging is strong and prevent the products from short-circuit.

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UN Classification (Transport hazard class): Non dangerous; Marine pollutant (Y/N): Y;  
Special Provision: International maritime dangerous goods code (IMDG) 188, 230, 310, 348, 957;  
- The US Hazardous Materials Regulation (HMR) pursuant to a final rule issued by RSPA  
- The Office of Hazardous Materials Safety within the US Department of Transportations' (DOT) Research and Special Programs Administration (RSPA)

### Section 15. Disposal Considerations

OSHA hazard communication standard (29 CFR 1910.1200)

Hazardous \_\_\_\_\_ Non-hazardous V \_\_\_\_\_

### Section 16. Additional Information

#### Abbreviations and acronyms

CLP: EU regulation (EC) No 1272/2008 on classification, labelling and packaging of chemical substances and mixtures.  
CAS: Chemical Abstracts Service (Division of the American Chemical Society).  
ACGIH: American Conference of Governmental Industrial Hygienists  
TLV: Threshold Limit Value  
IATA: International Air Transport Association  
IMDG: International Maritime Dangerous Goods  
LC50: lethal concentration, 50 percent kill  
LD50: lethal dose, 50 percent kill  
TWA: Time Weighted Average  
TSCA: United States Toxic Substances Control Act Section 8(b) Inventory  
EINECS: European Inventory of Existing Commercial Chemical Substances  
Model: Recommendations on the Transport of Dangerous Goods Model  
Regulations: Regulations

#### Declare to reader

The above information is based on the data of which we are aware and is believed to be correct as of the data hereof. Since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data made available subsequent to the data hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

MSDS Creation Date: December 3, 2014

\*\*\*End of Report\*\*\*

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