

MSDS Report

Prepared For :	Shenzhen Pinnuo Energy Co., Ltd. Building C, Zhongxinbao Low-carbon Technologies Industrial Park, Baihuadong Industrial 1st Road, Guangming New District, Shenzhen, Guangdong
Product Name:	Polymer Li-ion Battery
Model :	PN301430
Nominal Voltage:	3.7V
Typical Capacity:	100mAh, 0.37Wh
Weight:	2.4g
Dimension :	30.1mm×14.4mm×2.9mm (L×W×T)
Prepared By :	Shenzhen TCT Testing Technology Co., Ltd. 1F, No.1 Building, No.1 Chongqing Road, Yibaolai Industrial Park, Qiaotou Village, Fuyong Town, Baoan District, Shenzhen
Report No.:	TCT170110M020

Written by: Carry Wang

Approved by: _____

Inspected by: Allen Qin

Date: _____



Material Safety Data Sheet

Section 1- Chemical Product & Company Identification

Product Name: Li-ion Battery

Manufacture: Shenzhen Pinnuo Energy Co., Ltd.

Address: Building C, Zhongxinbao Low-carbon Technologies Industrial Park, Baihuadong
Industrial 1st Road, Guangming New District, Shenzhen, Guangdong

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Item Code: TCT170110M020

Section 2- Hazards Identification

<i>Classification of Danger</i>	See section 14
<i>Primary Route(s) of Exposure</i>	Eye, skin contact, ingestion
<i>Health Hazard</i>	The batteries are not hazardous when used according to the instructions of manufacturer under normal conditions. In case of abuse, there's risk of rupture, fire, heat, leakage of internal components, with could cause casualty loss. Abuses include but not limited to the following cases: charged for long time, short circuited, put into fire, whacked with hard object, punctured with acute object, crushed, and broken.
Reported as carcinogen	Not applicable

Section 3- Composition/Information on Ingredients

<i>Hazardous Ingredients (Chemical Name)</i>	<i>Concentration or concentration ranges (%)</i>	<i>CAS Number</i>
Lithium Cobalt Oxide (CoLiO ₂)	15-40	12190-79-3
Graphite	10-30	7782-42-5
Phosphate(1-), hexafluoro-, lithium	10-30	21324-40-3
Copper	7-13	7440-50-8
Aluminum foil	5-10	7429-90-5
Nickel	1-5	7440-02-0

Labeling according to EC directives.

No symbol and risk phrase are required.

Note: CAS number is Chemical Abstract Service Registry Number.

N/A=Not apply.

Section 4- First Aid Measures

<i>Eye</i>	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
<i>Skin</i>	Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.
<i>Inhalation</i>	Remove from exposure and move to fresh air immediately. Use oxygen if available.
<i>Ingestion</i>	Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Call a physician.

Section 5- Fire Fighting Measures

<i>Characteristics of Hazard</i>	Toxic fumes; gases or vapors may evolve on burning.
<i>Hazardous Combustion Products</i>	Carbon monoxide, carbon dioxide, lithium oxide fumes.
<i>Fire-extinguishing Methods and Extinguishing Media</i>	Water, CO ₂ . Don't use Halon fire extinguisher. May use dry powder, sand, earth.
<i>Attention in Fire-extinguishing</i>	The Firemen should put on antigas masks and full fire-fighting suits.

Section 6- Accidental Release Measures

<i>Personal Precautions, protective equipment, and emergency procedures</i>	Restrict access to area until completion of clean-up. Do not touch the spilled material. Wear adequate personal protective equipment as indicated in Section 8.
<i>Environmental Precautions</i>	Prevent material from contaminating soil and from entering sewers or waterways.
<i>Methods and materials for Containment</i>	Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean up spills immediately.
<i>Methods and materials for cleaning up</i>	Absorb spilled material with an inert absorbent (dry sand or earth). Scoop contaminated absorbent into an acceptable waste container. Collect all contaminated absorbent and dispose of according to directions in Section 13. Scrub the area with detergent and water; collect all contaminated wash water for proper disposal.

Section 7- Handling and Storage

<i>Handling</i>	Don't handling the batteries in manner that allows terminals to short circuit
<i>Storage</i>	Store and used far away from heat, sparks, open flame, or other heat ignition sources, and under room temperature(<30°C) in ventilating and dehumidifying environments.
<i>Other Precautions</i>	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.

Section 8 - Exposure Controls/Personal Protection

<i>Engineering Controls</i>	No engineering controls are required for handling batteries that have not been damaged. Personal protective equipments for damaged batteries should include chemical resistant gloves and safety glasses.
<i>Personal Protective Equipment</i>	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. Not necessary under conditions of normal use. Protective Gloves: Not necessary under conditions of normal use.

	<p>Other Protective Clothing or Equipment: Not necessary under conditions of normal use.</p> <p>Personal Protection is recommended for venting battery: Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields.</p>
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Section 9- Physical and Chemical Properties

<i>Physical State</i>	Appearance: Square
	Color: Silvery
	Odour: If leaking, smells of medical ether.
<i>Change in condition:</i>	
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.

Section 10 – Stability and Reactivity

<i>Stability</i>	Stable under normal temperatures and pressures.
<i>Conditions to Avoid</i>	Heat above 70°C or incinerate. Deform. Mutilate. Crush. Disassemble. Overcharge. Short circuit. Expose over a long period to humid conditions.
<i>Hazardous Decomposition Products</i>	Toxic Fumes, and may form peroxides.
If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalies, halogenated hydrocarbons.	

Section 11 – Toxicological Information

<i>Irritation</i>	In the event of exposure to internal contents, vapour fumes may be very irritating to the eyes and skin.
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<i>Sensitization</i>	Not Available
<i>Reproductive Toxicity</i>	Not Available
<i>Toxicologically Synergistic Materials</i>	Not Available

Section 12-Ecological Information

<i>General note:</i>	Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
<i>Anticipated behavior of a chemical product in environment/possible environmental impact/ ecotoxicity</i>	Not Available

Section 13 – Disposal Considerations

<i>Waste Treatment</i>	Recycle or dispose of in accordance with government, stat & local regulations.
<i>Attention for Waste Treatment</i>	Deserted batteries couldn't be treated as ordinary trash. Couldn't be thrown into fire or placed in high temperature. Couldn't be dissected, pierced, crushed or treated similarly. Best way is recycling.

Section 14 – Transport Information

<i>UN number</i>	3480 & 3481
<i>UN Proper shipping name</i>	Lithium ion Batteries (limited to a maximum of 30% SoC) or ; Lithium ion Batteries contained in equipments or Lithium ion Batteries packed with equipment (Including lithium ion polymer batteries)
<i>Transport hazard class(es)</i>	9
<i>Marine pollutant (Yes/No)</i>	No
<i>Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)</i>	No information available.
<i>Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises</i>	

Transport information:

The goods can be shipped by air in accordance with International Civil Aviation Organization (ICAO), TI or International Air Transport Association (IATA), DGR Packing Instructions (PI) 965 Section II/Section IB, PI966 Section II and PI967 Section II appropriate of IATA DGR 58th (2017 Edition) for transportation.

According to the special provision 188 of IMDG CODE (Amdt. 38-16) 2016 Edition, the products are not subject to dangerous goods.

Other requirements for the US Department of Transportation (DOT) Subchapter C, Hazardous Materials Regulations if shipped in compliance with 49 CFR 173.185.

Separate batteries when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport.

More information concerning shipping, testing, marking and packaging can be obtained from label master at <http://www.labelmaster.com/>.

Transport Fashion: By air, by sea, by railway, by road.

Section 15 – Regulatory 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)

In accordance with all Federal, State and local laws

Section 16 – Additional Information

MSDS creation date: 2017/01 Version: 1.0



The information above is believed to be accurate and represents the best information currently available to us. However, TCT makes no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. This material safety data sheet provides guidelines for the safe handling and use of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required.

The data/information contained herein has been reviewed and approved for general release on the basis that this document contains no export controlled information.

*****End of report*****

Report No.: TCT170110M020

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