

MSDS Report

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| Prepared For : | Electro Static Technology 31 Winterbrook Rd Mechanic Falls, ME 04256, USA |
| Product Name: | Lithium ion Battery |
| Model : | PL156085 |
| Nominal Voltage: | 7.4V |
| Typical Capacity: | 5000mAh, 37Wh |
| Weight: | 175.2g |
| Dimension : | 95.0mm×60.0mm×13.2mm (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.: | TCT161025M004 |

Written by: Jessi Dai

Approved by: M. King

Inspected by: Carol Xiong

Date: 2016-10-23



Material Safety Data Sheet

Section 1- Chemical Product & Company Identification

Product Name: Lithium ion Battery

Manufacture: Shenzhen GuoJu Energy Co., Ltd.

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Item Code: TCT161025M004

Section 2- Hazards Identification

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| hazard categories | Not dangerous with normal use. Do not dismantle, open or shred, Lithium ion Battery the ingredients contained within or their ingredients could be harmful. |
| Appearance, Color, Odor | Solid object with no odor, no color. |
| Primary Route(s) of Exposure | These chemicals are contained in a sealed stainless steel enclosure. Risk of exposure occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, exposure to the electrolyte solution contained within can occur by Inhalation, Ingestion, Eye contact and Skin contact. |
| Potential Health Effects | <p>ACUTE (short term): See Section 8 for exposure controls In the event that this battery has been ruptured, the electrolyte solution contained within the battery would be corrosive and can cause burns.</p> <p>Inhalation: Inhalation of materials from a sealed battery is not an expected route of exposure. Vapors or mists from a ruptured battery may cause respiratory irritation.</p> <p>Ingestion: Swallowing of materials from a sealed battery is not an expected route of exposure. Swallowing the contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract.</p> <p>Skin: Contact between the battery and skin will not cause any harm. Skin contact with contents of an open battery can cause severe irritation or burns to the skin.</p> |

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| | Eye: Contact between the battery and the eye will not cause any harm. Eye contact with contents of an open battery can cause severe irritation or burns to the eye. NIC (long term): see Section 11 for additional toxicological data. |
| Reported as carcinogen | Not applicable |

Section 3- Composition/Information on Ingredients

| Hazardous Ingredients (Chemical Name) | Concentration or concentration ranges (%) | CAS Number |
|--|--|------------|
| Lithium Cobalt Oxide | 25.22 | 12190-79-3 |
| Graphite powder | 24.11 | 7782-42-5 |
| Rubber | 3.47 | 69028-37-1 |
| Carbon Black | 8.02 | 1333-86-4 |
| Styrene-butadiene rubber(SBR) | 1.15 | 61789-96-6 |
| Polypropylene | 1.24 | 9003-07-0 |
| Polyethylene | 1.23 | 9002-88-4 |
| Lithium hexafluorophosphate | 5.12 | 21324-40-3 |
| Ethylene carbonate(EC) | 2.46 | 96-49-1 |
| Diethyl carbonate(DEC) | 3.21 | 105-58-8 |
| Propylene carbonate(PC) | 1.04 | 108-32-7 |
| Polycaprolactam (NYLON 6) | 1.03 | 25038-54-4 |
| Copper | 11.64 | 7440-50-8 |
| Aluminium | 11.06 | 7429-90-5 |

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

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| Inhalation | If contents of an opened battery are inhaled, remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid. |
| Skin contact | If skin contact with contents of an open battery occurs, as quickly as possible remove contaminated clothing, shoes and leather goods. Immediately flush with lukewarm, gently flowing water for at least 30 minutes. If irritation or pain persists, seek medical attention. Completely decontaminate clothing, shoes and leather goods before reuse or discard. |
| Eye contact | If eye contact with contents of an open battery occurs, immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes while holding the eyelids open. Normal saline solution may be used as soon as it is available. If necessary, continue flushing during transport to emergency care facility. Take care not to rinse contaminated water into the unaffected eye or onto face. Quickly transport victim to an emergency care facility. |
| Ingestion | If ingestion of contents of an open battery occurs, never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. Do not induce vomiting. Have victim drink 60 to 240 mL (2-8 oz.) of water. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Have victim rinse mouth with water again. Quickly transport victim to an emergency care facility. |

Section 5- Fire Fighting Measures

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| Flammable Properties | In the event that this battery has been ruptured, the electrolyte solution contain within the battery would be flammable. Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of flammable or corrosive materials. |
| Suitable extinguishing Media | Use extinguishing media suitable for the materials that are burning. |
| Unsuitable extinguishing Media | Not available |
| Explosion Data | Sensitivity to Mechanical Impact: This may result in rupture in extreme cases ; Sensitivity to Static Discharge: Not Applicable |
| Specific Hazards arising from the chemical | Fires involving Lithium ion Battery can be controlled with water. When water is used, however, hydrogen gas may evolve. In a confined space, hydrogen gas can form an explosive mixture. In this situation, smothering agents are recommended to extinguish the fire. |
| Protective Equipment and precautions for firefighters | As for any fire, evacuate the area and fight the fire from a safe distance. Wear a pressure-demand, self-contained breathing apparatus and full protective gear. Fight fire from a protected location or a safe distance. Use NIOSH/MSHA approved full-face self-contained breathing apparatus (SCBA) with full protective gear. |
| NFPA | Health: 0 Flammability: 0 Instability: 0 |

Section 6- Accidental Release Measures

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| Personal Precautions, protective equipment, and emergency procedures | 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. |
| Environmental Precautions | Prevent material from contaminating soil and from entering sewers or waterways. |
| Methods and materials for Containment | Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean up spills immediately. |
| Methods and materials for cleaning up | 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

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| Handling | <p>The battery should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container.</p> <p>Do not short circuit terminals, or over charge the battery, forced over-discharge, throw to fire.</p> <p>Do not crush or puncture the battery, or immerse in liquids.</p> |
| Storage | <p>Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided.</p> <p>Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.</p> <p>The voltage for a long time storage shall be 7.4V~8.4V range.</p> |
| Other Precautions | <p>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.</p> |

Section 8 - Exposure Controls/Personal Protection

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| Engineering Controls | Use local exhaust ventilation or other engineering controls to control sources of dust, mist, fumes and vapor. Keep away from heat and open flame. Store in a cool, dry place. |
| Personal Protective Equipment | Respiratory Protection: Not necessary under normal conditions. Skin and body Protection: Not necessary under normal conditions, Wear suitable protective clothing and gloves if handling an open or leaking battery. Hand protection: Wear suitable gloves if handling an open or leaking battery. Eye Protection: Not necessary under normal conditions, Wear safety glasses if handling an open or leaking battery. |
| Other Protective Equipment | Have a safety shower and eye wash fountain readily available in the immediate work area. |
| Hygiene Measures | Do not eat, drink, or smoke in work area. Maintain good housekeeping. |

Section 9- Physical and Chemical Properties

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| Physical State | Form: Solid |
| | Color: Blue |
| | Odour: Monotony |
| Change in condition: | |
| pH, with indication of the concentration | Not applicable |
| Melting point/freezing point | Not available. |
| Boiling Point, initial boiling point and Boiling range: | Not available. |
| Flash Point | Not available. |
| Upper/lower flammability or explosive limits | Not available. |
| Vapor Pressure: | Not applicable |
| Vapor Density: (Air = 1) | Not applicable |
| Density/relative density | Not available. |
| Solubility in Water: | Insoluble |
| n-octanol/water partition coefficient | Not available. |
| Auto-ignition temperature | 130°C |
| Decomposition temperature | Not available. |

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| Odour threshold | Not available. |
| Evaporation rate | Not available. |
| Flammability (soil, gas) | Not available. |
| Viscosity | Not applicable |

Section 10 – Stability and Reactivity

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| Stability | The product is stable under normal conditions. |
| Conditions to Avoid (e.g. static discharge, shock or vibration) | Do not subject Lithium ion Battery to mechanical shock. Vibration encountered during transportation does not cause leakage, fire or explosion. Do not disassemble, crush, short or install with incorrect polarity. Avoid mechanical or electrical abuse. |
| Incompatible Materials | Not Available |
| Hazardous Decomposition Products | This material may release toxic fumes if burned or exposed to fire |
| Possibility of Hazardous Reaction | Not Available |

Section 11 – Toxicological Information

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| Irritation | Risk of irritation occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, irritation to the skin, eyes and respiratory tract may occur. |
| Sensitization | Not Available |
| Neurological Effects | Not Available |
| Teratogenicity | Not Available |
| Reproductive Toxicity | Not Available |
| Mutagenicity (Genetic Effects) | Not Available |
| Toxicologically Synergistic Materials | Not Available |

Section 12-Ecological Information

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| General note: | Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. |
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| Anticipated behavior of a chemical product in environment/possible environmental impact/ ecotoxicity | Not Available |
| Mobility in soil | Not Available |
| Persistence and Degradability | Not Available |
| Bioaccumulation potential | Not Available |
| Other Adverse Effects | Not Available |

Section 13 – Disposal Considerations

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| Product disposal recommendation | Observe local, state and federal laws and regulations. |
| Packaging disposal recommendation | Be aware discarded batteries may cause fire, tape the battery terminals to insulate them. Don't disassembly the battery. Completely discharge containers may be recycled or re-used. Observe local, state and federal laws and regulations. The potential effects on the environment and human health of the substances used in batteries and accumulators, the desirability of disposing of waste batteries and accumulators as unsorted municipal waste and of participating in their separate collection so as to facilitate treatment and recycling. |

Section 14 – Transport Information

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| UN number | 3481 |
| UN Proper shipping name | Lithium ion Batteries contained in equipments (Including lithium ion polymer batteries) |
| Transport hazard class(es) | 9 |
| Packing group (if applicable) | - |
| Marine pollutant (Yes/No) | No |
| Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code) | No information available. |
| 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 | |

Transport information: The transportation of lithium cells and batteries is regulated by the International Air Transport Association (According to Section II of PACKING INSTRUCTION 967 of IATA DGR 57th Edition for transportation), International Civil Aviation Organization, International Maritime Dangerous Goods Code and the US Department of Transportation.

The batteries must meet the following criteria for shipment:

Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185.

Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "IATA-DGR" or "special provision 188 of IMO-IMDG Code".

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 TitleIII(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

The information above is believed to be accurate and represents the best information currently available to us. However, Concorde 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.: TCT161025M004

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