# MSDS Report

**Prepared For:** Shenzhen HC Tech Co., Ltd  
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**Product Name:** RECHARGEABLE LI-ION BATTERY  
可充电锂离子电池

**Model:** MLP515783-4P

**Nominal Voltage:** 3.8V

**Typical Capacity:** 15000mAh, 57Wh

**Weight:** 271.0g

**Dimension:** 186.4mm X67.9mm X 13.4mm (L×W×T)

**Prepared By:** Shenzhen NCT Testing Technology Co., Ltd.  
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**Report No.:** NCT17051492M1-1

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**Written by:** Lisa Liu  
**Approved by:** Tu

**Inspected by:** Holy Wang  
**Date:** 2018-01-06
Material Safety Data Sheet

Section 1 - Chemical Product & Company Identification

Product Name: RECHARGEABLE LI-ION BATTERY

Product Name: 可充电锂离子电池

Manufacturer: McNair New Power Co., Ltd

Manufacture: 迈科新能源有限公司

Address: McNair Industrial Estate, 1888 West of Meijing Road, Dalang Town, Dongguan, China.

Address: 中国广东省东莞市大朗镇美景大道西1888号迈科工业园

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Item Code: NCT17051492M1-1

Section 2 - Hazards Identification

第二部分 危险性概述

Hazard Description: Not dangerous with normal use. Do not dismantle, open or shred the battery ingredients contained within or their ingredients products could be harmful.

Hazard Description: 正常使用没有危险，不能拆解、打开或分解电池，里面的材料或成分是有害的。
### Primary Route(s) of Exposure

Inhalation, Ingestion, Skin contact and Eye contact.
吸入、食入、皮肤接触、眼睛接触。

### Potential Health Effects

**Inhalation:** Vapors or mists from a ruptured battery may cause respiratory irritation.
吸入：破裂的电池散发出来的气雾会引起呼吸道刺激。

**Ingestion:** The battery ingredients contained within or their ingredients products can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract.
食入：电池的组成成分或原料可以导致喉、食道和胃肠道的严重化学烧伤。

**Skin:** Skin contact with contents of an open battery can cause severe irritation or burns to the skin.
皮肤：皮肤接触到电池的内部化学材料可能会导致严重的刺激或烧伤皮肤。

**Eye:** Eye contact with contents of an open battery can cause severe irritation or burns to the eye.
眼睛：眼睛接触到电池的内部化学材料可能会导致严重的刺激或烧伤眼睛。

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### Section 3- Composition/Information on Ingredients

### 化学名称

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Concentration or concentration ranges (%)</th>
<th>CAS Number CAS号（化学文摘索引登记号）</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium Cobalt Oxide 钴酸锂</td>
<td>30-35</td>
<td>12190-79-3</td>
</tr>
<tr>
<td>Graphite 石墨</td>
<td>21-24</td>
<td>7782-42-5</td>
</tr>
<tr>
<td>Polyvinylidene Fluoride 聚偏二氟乙烯树脂</td>
<td>2-5</td>
<td>24937-79-9</td>
</tr>
<tr>
<td>SBR 丁苯橡胶</td>
<td>3-6</td>
<td>9003-55-8</td>
</tr>
<tr>
<td>Copper Foils 铜箔</td>
<td>11-15</td>
<td>7440-50-8</td>
</tr>
<tr>
<td>Aluminum Foils 铝箔</td>
<td>8-12</td>
<td>7429-90-5</td>
</tr>
<tr>
<td>Electrolyte 电解质</td>
<td>20-25</td>
<td>N/A</td>
</tr>
<tr>
<td>Other 其他</td>
<td>5-10</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Note: CAS number is Chemical Abstract Service Registry Number.
注意：CAS号是化学文摘服务注册号。
### Section 4- First Aid Measures

<table>
<thead>
<tr>
<th>Inhalation 呼吸</th>
<th>Remove source of contamination or move victim to fresh air. Obtain medical advice. 移除污染源或者将受害者移至新鲜空气处，寻求医生建议。</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingestion 食入</td>
<td>Please rinse mouth thoroughly with water. Induce vomiting under the guidance of professional personage. Please seek medical treatment in time. 立即用清水漱口，在专业人士的指导下催吐，就医。</td>
</tr>
<tr>
<td>Skin contact 皮肤接触</td>
<td>Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid. 脱下已污染衣服，用大量的水冲洗至少15分钟，就医。</td>
</tr>
<tr>
<td>Eye contact 眼睛接触</td>
<td>Irrigate with flowing water for 15 minutes. If irritation persists, consult a physician. 用流动水冲洗15分钟，如刺激持续发生，请求助于医生。</td>
</tr>
</tbody>
</table>

### Section 5- Fire Fighting Measures

<table>
<thead>
<tr>
<th>Characteristics of Hazard 危险特性</th>
<th>Toxic fumes, gases or vapors may evolve on burning. 火灾时可释放有害浓烟、气体或者蒸汽。</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous Combustion Products 燃烧产生的危险物品</td>
<td>Carbon monoxide, carbon dioxide, lithium oxide fumes and so on. 一氧化碳，二氧化碳，锂氧化物烟气等。</td>
</tr>
<tr>
<td>Fire-extinguishing Methods and Extinguishing Media 灭火方法及灭火剂</td>
<td>Please use dry powder fire extinguisher and other proper fire extinguishing media. 请使用干粉灭火器等合适的灭火介质。</td>
</tr>
<tr>
<td>Attention in Fire-extinguishing 灭火注意事项</td>
<td>The firemen should put on antigas masks and full fire-fighting suits. 消防人员须佩戴防毒面具、穿全身消防服。</td>
</tr>
</tbody>
</table>
### Section 6- Accidental Release Measures

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

个人预防措施、防护装备和应急程序

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.

限制区域，直到完成清理工作。请勿触摸泄漏的材料。穿戴适当的个人防护设备，如第8部分所示。

#### Environmental Precautions

环境保护措施

Prevent material from contaminating soil and from entering sewers or waterways.

防止物质污染土壤和进入下水道或水道。

#### Methods and materials for Containment

方法和材料控制

Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean up spills immediately.

出于安全，阻止泄漏，可以用干砂或沙土来遏制液体泄漏，立即清理泄漏。

#### Methods and materials for cleaning up

清理的方法和材料

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.

用惰性吸收剂(干砂或沙土)将溢出的材料吸收。收集所有受污染的吸收剂，并按第13部分的指令处理。用洗涤剂和水清洁污染区域，收集所有受污染的洗涤水进行适当处理。

### Section 7- Handling and Storage

#### Handling

操作

Don't handling the batteries in manner that allows terminals to short circuit. Do not open, disassemble, crush or burn battery.

不要以让接头短路的方式对电池进行操作。不要打开，分解，挤压或燃烧电池。

#### Storage

储存

If the battery is subject to storage for such a long term as more than 3 months, it is recommended to recharge the battery periodically.

如果电池长期存放超过3个月，建议定期对电池充电。

- 1 month: -20°C→+60°C, 45%~90% R.H.
- 1 个月: -20°C→+60°C，相对湿度 45%~90%。
- 3 months: -20°C→+ 45°C, 45%~90% R.H.
- 3 个月: -20°C→+ 45°C，相对湿度 45%~90%。
- 1 year: -20°C→+ 25°C, 45%~90% R.H.
- 1 年: -20°C→+ 25°C，相对湿度 45%~90%。
Section 8 - Exposure Controls/Personal Protection

第八部分 接触控制和个体防护

<table>
<thead>
<tr>
<th>Engineering Controls</th>
<th>Personal Protective Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>工程控制</td>
<td>个人防护设备</td>
</tr>
<tr>
<td>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.</td>
<td>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.</td>
</tr>
</tbody>
</table>
| 操作未破损的电池，没有工程控制要求。对于破损的电池，个人防护用品应包括化学品防护手套和安全眼镜。 | 呼吸保护：当电池排气阀打开时，应尽量使通风设备开至最大，避免将打开排气阀的电芯局限在某一狭小空间内。正常操作条件下，呼吸保护是不必要的。正常使用条件下不必考虑。

**Personal Protective Equipment**

**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.

**Other Protective Clothing or Equipment**

Not necessary under conditions of normal use.

**Personal Protection**

is recommended for venting battery. Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields.

When battery venting is opened, ensure personal protection: respiratory protection, protective gloves, protective suits and safety glass are all necessary.

Section 9 - Physical and Chemical Properties

第九部分 理化特性

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Form: Solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>状态</td>
<td>固体</td>
</tr>
<tr>
<td>Property</td>
<td>Value</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>Color</td>
<td>Black</td>
</tr>
<tr>
<td>Colour</td>
<td>黑色</td>
</tr>
<tr>
<td>Odour</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor</td>
<td>无气味</td>
</tr>
<tr>
<td>(pH), with indication of the concentration</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>沸点初沸点</td>
<td>不适用</td>
</tr>
<tr>
<td>Boiling Point, initial boiling point</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>闪点</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>汽化压</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>热蒸气密度</td>
<td>(Air = 1)</td>
</tr>
<tr>
<td>密度/相对密度</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>溶解性</td>
<td>不溶</td>
</tr>
<tr>
<td>三氯三键醇/水分配系数</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>自燃温度</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>分解温度</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>
Section 10 – Stability and Reactivity

**Stability**

**Conditions to Avoid**

**Hazardous Decomposition Products**

**Possibility of Hazardous Reaction**

Section 11 – Toxicological Information

**Irritation**

**Sensitization**
Section 12 - Ecological Information

General note
通用信息
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
不允许未稀释或大量的产品到达地下水、水道或污水系统。

Anticipated behavior of a chemical product in environment/possible environmental impact/ecotoxicity
化学产品在环境/可能的环境预期的行为的一种生态毒性
Not applicable
不适用

Mobility in soil
土壤中移动性
Not applicable
不适用

Persistence and Degradability
持久性和降解性
Not applicable
不适用

Section 13 – Disposal Considerations

Waste Treatment
废弃处置方法
Recycle or dispose of in accordance with government, state & local regulations.
建议遵照国家和地方法规处置或再利用。

Attention for Waste Treatment
废弃注意事项
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.
废弃电池不能当作普通垃圾。不能丢进火中或置于高温下。不能解体、刺穿、破碎或类似的处理。最好的办法是回收利用。
Section 14 – Transport Information

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

The RECHARGEABLE LI-ION BATTERY (model: MLP515783-4P) tested according to the requirements of the UNITED NATIONS “Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria” Part III, subsection 38.3;

The RECHARGEABLE LI-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 packaging shall be adequate to avoid mechanical damage during transport, handling and stacking.

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

The RECHARGEABLE LI-ION BATTERY can be shipped by air in accordance with Section II/Section IIC of PACKING INSTRUCTION 965, or Section II of PACKING INSTRUCTION 966-967 of the 2018 IATA Dangerous Goods regulations 59th Edition.

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.
- UN number of lithium battery: UN3460 or UN3481;
- Lithium ion battery: UN3460 or UN3481;
- UN Proper shipping name/Description (technical name): Lithium ion batteries or Lithium ion batteries contained in equipment or Lithium ion batteries packed with equipment;
- UN 合适的运输名称/描述 (技术名称)：锂离子电池，锂离子电池内置于设备中或锂离子电池与设备包装在一起;
- UN Classification (Transport hazard class): Class 9 (PI965 Section IB) or N/A (PI965-967 Section II)
- UN 分类（运输危险类别）：9类危险品（包装指令965第IB部分）或/和不适用（包装指令966-967第II部分）

- The International Maritime Dangerous Goods (IMDG) Code.
- 国际海运危险货物（IMDG）规则。
UN number of lithium battery: UN3460 or UN3481;

UN Proper shipping name/Description (technical name): Lithium ion batteries or Lithium ion batteries contained in equipment or Lithium ion batteries packed with equipment;

UN 合适的运输名称/描述（技术名称）：锂离子电池，锂离子电池内置于设备中或锂离子电池与设备包装在一起;

UN Classification (Transport hazard class): N/A

UN 分类（运输危险类别）：不适用

Marine pollutant(Y/N): N

海洋污染物（Y/N）：N

The battery is not restricted according to IMO IMDG Code (inc Amdt 38-16).

海运按照IMO IMDG Code（inc Amdt 38-16）可按普通货物条件办理。

Need to meet the Special Provision: International maritime dangerous goods code (IMDG) 188, 230, 310, 348, 957;

需要符合这些特殊条款：国际海运危险货物规则（IMDG）188, 230, 310, 348, 957;

Section 15 – Regulatory Information

第十五部分 法规信息

《Dangerous Goods Regulations》

《危险物品规则》

《Recommendations on the Transport of Dangerous Goods Model Regulations》

《危险货物运输的建议模型规定》

《International Maritime Dangerous Goods》

《国际海上危险货物运输》

《Technical Instructions for the Safe Transport of Dangerous Goods》

《危险货物安全运输技术指南》

《Classification and code of dangerous goods》

《危险货物分类与代码》

《Occupational Safety and Health Act》 (OSHA)

《职业安全与健康法案》(OSHA)

《Toxic Substance Control Act》 (TSCA)

《有毒物质控制法》（TSCA）

《Consumer Product Safety Act》 (CPSA)

《消费者产品安全法案》（CPSA）

《Federal Environmental Pollution Control Act》 (FEPCA)

《联邦环境污染控制法》（FEPCA）

《The Oil Pollution Act》 (OPA)

《石油污染法》（OPA）
Section 16 – Additional Information

第十六部分 其他信息

The information above is believed to be accurate and represents the best information currently available to us. However, we make 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.

在我们看来上面的信息是准确的，这是我们目前能提供的最佳的信息。但是，对于这些信息，我们不对商品的性能做任何明示的或者暗示的保证，我们也不对使用这些信息造成的后果承担责任。用户应当自己调查研究后决定这些信息是否适用于他们的特定用途。尽管在该文档里提出了合理的预警，但是这仅仅只是给您做参考，考量和调查。这份化学品安全技术说明书提供了安转理和使用该产品的指南，但是它没有，也不能对所有可能发生的情景提出建议，所以您需要根据您对该产品的特定使用情况来决定是否需要其他的预防措施。

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*****End of report 报告结束*****