## MSDS Report

### Prepared For:
申请商：
SHENZHEN PKCELL BATTERY CO., LTD.
深圳市比苛电池有限公司
7th Floor, block B, Yicheng Huanzhi center, Renmin Road, Longhua District, Shenzhen, China.

### Product Name:
产品名称：
Li-ion Battery Pack

### Model:
型号：
ICR18650 10050mAh 3.7V

### Nominal Voltage:
标称电压：
3.7V

### Typical Capacity:
典型容量：
10050mAh, 37.185Wh

### Weight:
重量：
150.1g

### Dimension:
尺寸：
Max.69.0mm X 56.5mm X 19.0mm (L×W×T)

### Prepared By:
编制单位：
Shenzhen NCT Testing Technology Co., Ltd.
深圳诺测检测技术有限公司
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### Report No.:
报告编号：
NCT22014131XM1-1

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**Written by** 郑重：
Doris Ye

**Inspected by** 审核人：
Hely Wang

**Approved by** 签发单位（盖章）：
Boris Lin

**Date of Issue** 签发日期：
2022.04.15
Section 1- Chemical Product & Company Identification

Product Name: Li-ion Battery Pack

Manufacture: SHENZHEN PKCELL BATTERY CO., LTD.

Address: 7th Floor, block B, Yicheng Huanzhi center, Renmin Road, Longhua District, Shenzhen, China.

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Item Code: NCT22014131XM1-1

Section 2- Hazards Identification

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.

Primary Route(s): Inhalation, Ingestion, Skin contact and Eye contact.

危险性描述：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。
吸入、食入、皮肤接触、眼睛接触。
of Exposure

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嘴，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。

Section 3- Composition/Information on Ingredients

第三部分 成分/组成信息

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Concentration or concentration ranges (%)</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium Cobalt Oxide 镍酸锂</td>
<td>35-38</td>
<td>12190-79-3</td>
</tr>
<tr>
<td>Graphite 石墨</td>
<td>20-22</td>
<td>7782-42-5</td>
</tr>
<tr>
<td>Copper 铜</td>
<td>9-10</td>
<td>7440-50-8</td>
</tr>
<tr>
<td>Aluminum 铝</td>
<td>5-6</td>
<td>7429-90-5</td>
</tr>
<tr>
<td>Ethylene carbonate 碳酸乙烯酯</td>
<td>14-16</td>
<td>96-49-1</td>
</tr>
<tr>
<td>Polypropylene 聚丙烯</td>
<td>5-6</td>
<td>9003-07-0</td>
</tr>
<tr>
<td>Carbonate, methyl ethyl 碳酸甲乙酯</td>
<td>4-5</td>
<td>623-53-0</td>
</tr>
<tr>
<td>Phosphate(1-), hexafluoro- lithium 六氟磷酸锂</td>
<td>5-6</td>
<td>21324-40-3</td>
</tr>
</tbody>
</table>

Note: CAS number is Chemical Abstract Service Registry Number.

N/A=Not apply.

Section 4- First Aid Measures
第四部分 急救措施

<table>
<thead>
<tr>
<th>Inhalation</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</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，速就医。</td>
</tr>
<tr>
<td>Skin contact</td>
<td>Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid. 脱下污染衣服，用大量的水冲洗至少15分钟，速就医。</td>
</tr>
<tr>
<td>Eye contact</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

第五部分 消防措施

<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 water, dry sand and other proper fire extinguishing media. 请使用水，干燥沙等合适的灭火介质。</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

第六部分 泄露应急处理
### 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露。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. Use惰性吸收剂(干燥沙或沙土)吸湿剂的材料。收集所有受污染的吸收剂并根据第 13 部分的指令处置。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置。

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### Section 7- Handling and Storage
第七部分 操作处置与储存

| 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。 Long period storage: -10℃～35℃, 60±25%RH 长期存储: -10℃～35℃, 相对湿度 60±25% Do not store the battery haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects. 不要将电池随意放在盒子或抽屉里，以免电池之间或电池与其他金属物质发生短路。 Keep out of reach of children. 储存于小孩接触不到的地方。 Do not expose the battery to heat or fire. Avoid storage in direct sunlight. 不要将电池暴露在火源和热源附近，避免在阳光直射下存贮。 Do not store together with oxidizing and acidic materials. 不要与氧化剂和酸性物质储存在一起。 |
### Section 8 - Exposure Controls/Personal Protection

#### Engineering Controls

<table>
<thead>
<tr>
<th>工程控制</th>
</tr>
</thead>
</table>
| 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.  
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。 |

#### Personal Protective Equipment

<table>
<thead>
<tr>
<th>个人防护设备</th>
</tr>
</thead>
</table>
| 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.  
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，避免气体直接流向回某一狭小空间内。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。  
Protective Gloves: Not necessary under conditions of normal use.  
防护手套：正常使用条件下不必考虑。  
Other Protective Clothing or Equipment: Not necessary under conditions of normal use.  
其他防护服装或设备：正常使用条件下不必考虑。 |

### Section 9 - Physical and Chemical Properties

#### Physical State

<table>
<thead>
<tr>
<th>物理状态</th>
</tr>
</thead>
</table>
| Form: Solid  
形式：固体  
Color: Blue  
颜色：蓝色  
Odour: Odorless  
气味：无气味 |

<table>
<thead>
<tr>
<th>变化条件：</th>
</tr>
</thead>
</table>
| pH, with indication of the  
pH，有指示的： |
| No data is available  
无数据可用 |
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>concentration</strong></td>
<td>无数据可提供</td>
</tr>
<tr>
<td><strong>pH，有浓度指示</strong></td>
<td>无数据可提供</td>
</tr>
<tr>
<td><strong>Melting point/freezing point</strong></td>
<td>No data is available</td>
</tr>
<tr>
<td><strong>熔点/凝固点</strong></td>
<td>无数据可提供</td>
</tr>
<tr>
<td><strong>Boiling Point, initial boiling point</strong></td>
<td>No data is available</td>
</tr>
<tr>
<td><strong>沸点，初沸点</strong></td>
<td>无数据可提供</td>
</tr>
<tr>
<td><strong>Flash Point</strong></td>
<td>No data is available</td>
</tr>
<tr>
<td><strong>闪点</strong></td>
<td>无数据可提供</td>
</tr>
<tr>
<td><strong>Upper/lower flammability or explosive limits</strong></td>
<td>No data is available</td>
</tr>
<tr>
<td><strong>上/下燃烧或爆炸限值</strong></td>
<td>无数据可提供</td>
</tr>
<tr>
<td><strong>Vapor Pressure</strong></td>
<td>No data is available</td>
</tr>
<tr>
<td><strong>蒸汽压</strong></td>
<td>无数据可提供</td>
</tr>
<tr>
<td><strong>Vapor Density: (Air = 1)</strong></td>
<td>No data is available</td>
</tr>
<tr>
<td><strong>蒸汽密度: (空气 = 1)</strong></td>
<td>无数据可提供</td>
</tr>
<tr>
<td><strong>Density/relative density</strong></td>
<td>No data is available</td>
</tr>
<tr>
<td><strong>密度/相对密度</strong></td>
<td>无数据可提供</td>
</tr>
<tr>
<td><strong>Solubility in Water</strong></td>
<td>Insoluble</td>
</tr>
<tr>
<td><strong>水溶性</strong></td>
<td>不能溶解</td>
</tr>
<tr>
<td><strong>n-octanol/water partition coefficient</strong></td>
<td>No data is available</td>
</tr>
<tr>
<td><strong>正辛醇/水分配系数</strong></td>
<td>无数据可提供</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>No data is available</td>
</tr>
<tr>
<td><strong>自燃温度</strong></td>
<td>无数据可提供</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>No data is available</td>
</tr>
<tr>
<td><strong>分解温度</strong></td>
<td>无数据可提供</td>
</tr>
<tr>
<td><strong>Odour threshold</strong></td>
<td>No data is available</td>
</tr>
<tr>
<td><strong>溴阈</strong></td>
<td>无数据可提供</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>No data is available</td>
</tr>
<tr>
<td><strong>蒸发速率</strong></td>
<td>无数据可提供</td>
</tr>
<tr>
<td><strong>Flammability (soil, gas)</strong></td>
<td>No data is available</td>
</tr>
<tr>
<td><strong>易燃性（土壤，气体）</strong></td>
<td>无数据可提供</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>No data is available</td>
</tr>
<tr>
<td><strong>粘度</strong></td>
<td>无数据可提供</td>
</tr>
</tbody>
</table>
### Section 10 – Stability and Reactivity

<table>
<thead>
<tr>
<th>Stability</th>
<th>Stable under normal temperatures and pressures. 常温常压下稳定。</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conditions to Avoid</td>
<td>Heat above 70℃ or Incinerate, Deform, Mutilate, Crush, Disassemble, Overcharge, Short circuit, Expose over a long period to humid conditions. 加热 70℃ 以上或焚烧、变形、毁坏、粉碎、拆卸、过充电、短路、长时间暴露在潮湿的条件下。</td>
</tr>
<tr>
<td>Hazardous Decomposition Products</td>
<td>Toxic Fumes, and may form peroxides. 有毒烟雾，并可能形成过氧化物。</td>
</tr>
<tr>
<td>Possibility of Hazardous Reaction</td>
<td>If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons. 如果发生泄露，避免与强氧化剂，无机酸，强碱，卤代烃接触。</td>
</tr>
</tbody>
</table>

### Section 11 – Toxicological Information

| Irritation | In the event of exposure to internal contents, vapor fumes may be very irritating to the eyes and skin. 内部物质暴露的情况下，蒸汽烟雾可能对眼睛和皮肤产生刺激性。 |
| Sensitization | No data is available 无数据可提供 |
| Reproductive Toxicity | No data is available 无数据可提供 |
| Toxicologically Synergistic Materials | No data is available 无数据可提供 |

### Section 12-Ecological Information
### Section 13 – Disposal Considerations

<table>
<thead>
<tr>
<th><strong>Waste Treatment</strong></th>
<th>Recycle or dispose of in accordance with government, state &amp; local regulations. 建议遵照国家和地方法规处置或再利用。</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attention for Waste Treatment</strong></td>
<td>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. 废电池不能被当做普通垃圾，不能扔进火中或置于高温下。不能解体，刺穿，破碎或类似处理，最好的办法是回收利用。</td>
</tr>
</tbody>
</table>

### Section 14 – Transport Information

This report applies to by sea, by air and by land; 本报告适用于海运，空运和陆运

The Li-ion Battery Pack (model: ICR18650 10050mAh 3.7V) tested according to the requirements of the
UNITED NATIONS “Manual of Tests and Criteria” Part III, subsection 38.3;

The Li-ion Battery Pack 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 Li-ion Battery Pack can be shipped by air in accordance with Section IB of PACKING INSTRUCTION 965, or Section II of PACKING INSTRUCTION 966−967 of the 2022 IATA Dangerous Goods regulations 63rd 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: UN3480 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 Classification (Transport hazard class): Class 9 (PI965 Section IB) or N/A (PI966−967 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 N/A（包装指令 966−967 第 II 部分）

- The International Maritime Dangerous Goods (IMDG) Code.
- UN number of lithium battery: UN3480 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 分类（运输危险类别）：不适用

Marine pollutant(Y/N): N

The battery is not restricted according to IMO IMDG Code (inc Amdt 40-20).
Section 15 – Regulatory Information

《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)
《Superfund Amendments and Reauthorization Act TitleIII(302/311/312/313)》 (SARA)
《超级基金修正案和再授权法案 TitleIII(302/311/312/313)》 (SARA)
《Resource Conservation and Recovery Act》 (RCRA)
《资源保护和恢复法案》 (RCRA)
《Safety Drinking Water Act》 (CWA)
《安全饮用水法》 (CWA)
《California Proposition 65》
《加州65号提案》
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.

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