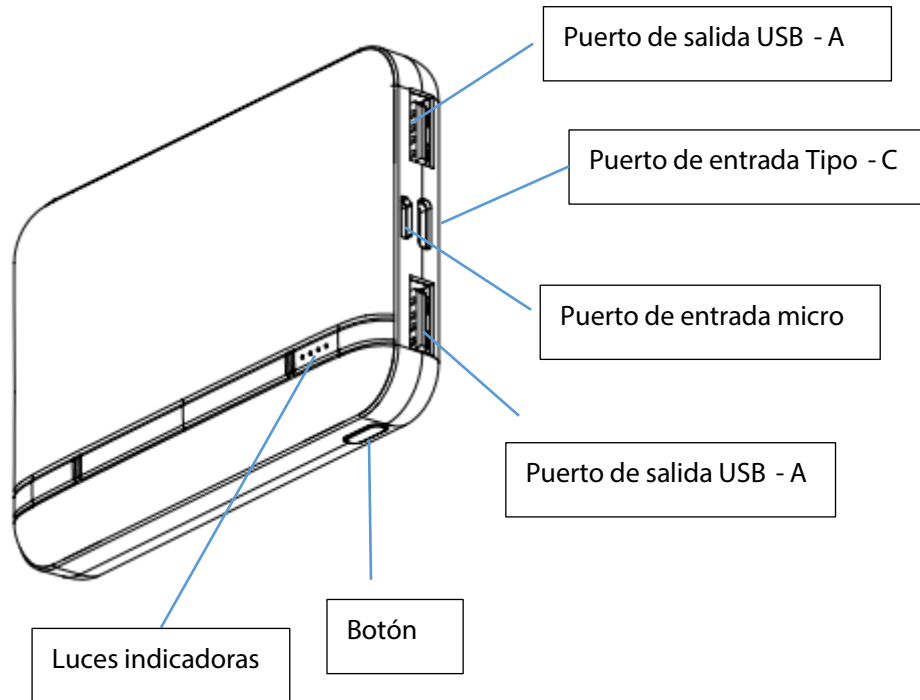


# Manual de Usuario

## POWER BANK BOOST



### Especificaciones:

Modelo: POWER BANK BOOST

Temperatura ambiente de uso del producto: 0-40°C

1. Capacidad: 5000 mAh/3.7 V/18.5 Wh
2. Entrada tipo C: DC 5 V/2 A
3. Entrada micro USB: DC 5 V/2 A
4. Salida USB-A: DC 5 V/2 A

### —、Introducción a las funciones:

#### 1、Función de carga y descarga:

- 1) Cuando se conecta a una fuente de alimentación de 5 V, 4 luces indicadoras blancas parpadean y muestran la potencia de forma ascendente. Cuando está completamente cargado, las 4 luces blancas están encendidas;
- 2) Cuando se descarga, las luces indicadoras blancas están encendidas y muestran la potencia de forma decreciente; la salida se apaga automáticamente en 32 segundos sin carga;
- 3) Cuando el voltaje de entrada de autocarga es demasiado alto, se protege automáticamente contra la sobrecarga.
- 4) Cuando se detecta que la corriente es demasiado alta para la descarga, la salida

se apaga automáticamente.

2、 Funciones principales:

1) Haga clic en el botón para activar la función de salida y el indicador de batería;

3、 Luces indicadoras:

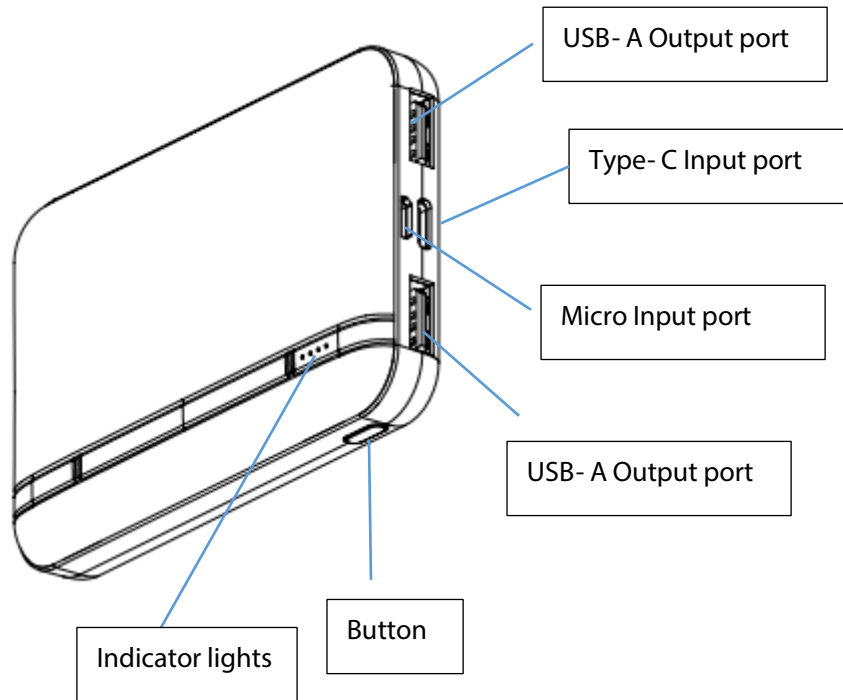
1) 4 Luces indicadoras blancas indican el nivel de potencia, cada luz indicadora representa el 25 % del nivel de potencia;

**Observaciones:**

- No agite, golpee ni lance el producto con fuerza.
- Si no utiliza el cargador portátil durante un periodo prolongado, cárguelo o descárguelo una vez cada tres meses para garantizar la vida útil del producto.
- Compruebe el porcentaje de batería de su dispositivo móvil mediante el icono de carga que aparece en la pantalla de su teléfono.
- Si el dispositivo móvil no se coloca correctamente sobre la superficie de carga, es posible que no se cargue adecuadamente. Utilice únicamente los accesorios incluidos o certificados (cables, cargadores) para utilizar el artículo.
- No esponga este dispositivo a la humedad ni a fuentes de calor.
- Este no es un juguete, no es apto para niños menores de 7 años.

# User manual

## POWER BANK BOOST



### Specifications:

Item number: POWER BANK BOOST

Product use environment temperature 0-40°C

1. Capacity: 5000mAh/3.7V/18.5Wh
2. Type-C input: DC 5V/2A
3. Micro-USB input: DC 5V/2A
4. USB-A output: DC 5V/2A

### —、Function Introduction:

#### 1、Charging and discharging function:

- 1) When connected to a 5V power supply, 4 white indicator lights flash and display the power in an increasing manner. When fully charged, all 4 white lights are on;
- 2) When discharging, the white indicator lights are on and display the power in a decreasing manner; the output is automatically turned off in 32S without load;
- 3) When the self-charging input voltage is too high, it automatically protects against overcharging.
- 4) When the current is detected to be too large for discharge, the output is automatically turned off.

## 2、 Key Functions:

- 1) Click the button to turn on the output function and the battery indicator;

## 3、 Indicator lights:

- 1) 4 white indicator lights indicate the power level, each indicator light represents 25% of the power level;

## Remarks:

- Do not vigorously shake, hit or throw the product.
- If the power bank is not used for long time, please charge/discharge it once every three months to ensure the service life of the product.
- Check your mobile device's battery percentage using the charging icon displayed on the screen of your phone.
- When the mobile device is not placed on the charging surface accurately, your mobile device may not charge properly. Only use included or certified accessories(cables,chargers)to use the item.
- Please do not expose this device to moisture or heat sources.
- This is not a toy, not suitable for children under the age of 7.

# 材料安全数据表

## Material Safety Data Sheet

本报告本年度有效  
有效期至 2025 年 12 月 31 日

样品名称: 可充电锂离子电芯

Sample name: Rechargeable lithium-ion cell

样品型号: 18650

Sample model:

委托单位: CONFIDENTIAL

Applicant:

签发时间 Date of issue: 2025.02.13

Written by 张晓红

Approved by 段江涛

深圳天溯计量检测股份有限公司

Shenzhen Tiansu Calibration and Testing Co., Ltd.



\* The MSDS is prepared based on the information provided by client. The contents and formats of this MSDS are revised as per client's request. 这份材料安全数据表是根据客户提供的信息编辑，其内容和格式按客户要求来修订。

## 第一部分-化学品及企业标识

**Section 1-Chemical Product and Company Identification**

产品名称 <b>Product Name</b>	可充电锂离子电芯 Rechargeable lithium-ion cell
型号 <b>Model</b>	18650
商标 <b>Trade Mark</b>	/
额定参数 <b>Ratings</b>	3.7V/2000mAh/7.4Wh
重量 <b>Weight</b>	41.950g
生产单位 <b>Manufacturer</b>	CONFIDENTIAL
生产单位地址 <b>Manufacturer Address</b>	CONFIDENTIAL
应急电话 <b>Emergency Telephone</b>	CONFIDENTIAL
传真 <b>Fax</b>	CONFIDENTIAL

## 第二部分-成分信息

**Section 2- Composition Information**

化学成分 <b>Chemical Composition</b>	化学式 <b>Chemical Formula</b>	CAS号 <b>CAS No.</b>	重量含量 (%) <b>Weight (%)</b>
钴酸锂 Lithium cobaltate	LiCoO <sub>2</sub>	12190-79-3	15 - 40
石墨 Graphite	C	7782-42-5	10 - 30
六氟磷酸锂 Lithium hexafluorophosphate	LiPF <sub>6</sub>	21324-40-3	10 - 30
铜箔 Copper	Cu	7440-50-8	7-13

铝箔 Aluminium	Al	7429-90-5	5-10
镍 Nickel	Ni	7440-02-0	1-5

## 第三部分-危险性概述

**Section 3- Hazards Identification**

紧急情况概述 <b>Emergency overview</b>	不适用 N/A
标签元素 <b>Label elements:</b>	
危险标签图 <b>Hazard pictogram(s)</b>	不适用 Not Applicable
提示语 <b>Signal word</b>	不适用 Not Applicable
危险声明 <b>Hazard statement(s)</b>	不适用 Not Applicable
预防声明 <b>Precautionary statement(s):</b>	
预防 <b>Prevention</b>	不适用 Not Applicable
反应 <b>Response</b>	不适用 Not Applicable
废弃处理 <b>Disposal</b>	不适用 Not Applicable
环境危害 <b>Environmental hazards:</b>	无相关信息 No relevant information
重要症状 <b>Important symptoms:</b>	见第11部分更多信息 See section 11 for more information

## 第四部分-急救措施

**Section 4- First Aid Measures**

眼睛接触 <b>Eye contact</b>	万一接触，立即用大量的清水冲洗至少15分钟，翻起上下眼睑，直到化学的残留物消失为止，迅速就医。 Flush eyes with plenty of water for least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
皮肤接触 <b>Skin contact</b>	万一接触，用大量的水冲洗至少15分钟，同时除去污染的衣物和鞋子，迅速就医。 Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.
吸入 <b>Inhalation</b>	立即从暴露处移至空气清新处，如果呼吸困难给予输氧，立即就医。 Remove from exposure and move to fresh air immediately. Use oxygen if available.
摄入 <b>Ingestion</b>	饮用两杯牛奶或水，如果当事人仍然清醒可以采取催吐的方法，并且立即就医。 Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Call a physician.

第五部分-消防措施

**Section 5- Fire Fighting Measures**

燃点 <b>Flash Point</b>	不适用 N/A
自燃温度 <b>Auto-Ignition Temperature</b>	不适用 N/A
灭火介质 <b>Extinguishing Media</b>	碳氢表面活性剂, 二氧化碳 Hydrocarbon surfactant, CO <sub>2</sub>
特殊灭火程序 <b>Special Fire-Fighting Procedures</b>	自给式呼吸器 Self-contained breathing apparatus
异常火灾或爆炸 <b>Unusual Fire and Explosion Hazards</b>	当电芯暴露于过热的环境中时, 安全阀可能会打开 Cell may vent when subjected to excessive heat-exposing battery contents
燃烧产生的危险物品 <b>Hazardous Combustion Products</b>	一氧化碳, 二氧化碳, 锂氧化物烟气 Carbon monoxide, carbon dioxide, lithium oxide fumes.

第六部分-泄露应急处理

**Section 6- Accidental Release Measures**

**个人预防措施、保护设备和应急程序:**

如果电池被泄露, 让人员离开该区域直到烟雾消散。提供最大限度的通风, 清除有害气体。首选的反应就是离开这个地区并消散气体, 避免皮肤和眼睛接触或吸入气体。用吸收剂清除溢出的液体然后焚烧。如果电池泄漏发生时, 液体可以用砂、泥土或其他惰性物质来吸收, 污染区域应该保持通风。

**Personal precautions, protective equipment and emergency procedures:**

If the battery is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. The preferred response is to leave the area and allow the vapors to dissipate, Avoid skin and eyes contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerated. If leakage of the battery happens, liquid could be absorbed by using sand, earth or other inert substance and contaminated area should be ventilated meantime.

**环境预防措施:**

不允许产品到达排水系统或任何水源。  
如果渗透进排水系统或任何水源, 通知相应的部门。  
不允许进入下水道/表面或地下水。

**Environment precautions:**

Do not allow product to reach sewage system or any water source.  
Inform respective authorities in case of seepage into water course or sewage system.  
Do not allow to enter sewers/ surface or ground water.

**抑制和清理材料的方法:**

如果电池外壳被拆除, 少量电解液可能会泄漏。收集所有材料放进一个塑料容器。根据当地的法律法规来处置, 避免可溶物质进入大地、下水道或水源。

**Methods and material for containment and cleaning up:**

If battery casing is dismantled, small amounts of electrolyte may leak. Collect all released material in a plastic

lined container. Dispose off according to the local law and rules, Avoid leached substances to get into the earth, canalization or waters.

第七部分-操作处置和储存

**Section 7- Handling and Storage**

<p>操作处置 <b>Handling</b></p>	<p>禁止打开、毁坏或焚烧电池，因为电池有可能在这些处理过程中发生爆炸、破裂或泄露等事故。 禁止将电池短路、过充、强制放电或扔入火中。 禁止挤压或刺穿电池，或将电池浸入溶液中。 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. Do not short circuit terminals, or over charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.</p>
<p>储存 <b>Storage</b></p>	<p>禁止物理或电滥用，禁止高温储存，最好将电池储存在阴凉、干燥、通风及温度变化较小的环境中。 禁止将电池接触加热设备，或将电池长时间直接暴露在阳光中。 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. Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.</p>
<p>其他要注意的防范措施 <b>Other Precautions</b></p>	<p>拆解、挤压、直接放入火中或高温条件下，电池可能发生爆炸和燃烧。 禁止短接或将电池正负极错误的安装在设备中。 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>

第八部分-接触控制和个体防护

**Section 8- Exposure Controls/Personal Protection**

<p>设计控制 <b>Engineering Controls</b></p>	<p>设计局部排气通风或其它设计来控制粉尘、雾、烟雾和气体。 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.</p>
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<p>个人防护装备 <b>Personal Protective Equipment</b></p>	<p>呼吸防护: 在正常情况下不需要。          皮肤和身体防护: 在正常情况下不需要, 如果处理一个裂开的或泄漏的电池需要穿戴适当的防护服和手套。          手保护: 如果处理一个裂开的或泄漏的电池需要戴适当手套。          眼睛保护: 在正常情况下不需要, 如果处理一个裂开的或泄漏的电池需要戴上安全眼镜。  <b>Respiratory Protection:</b> Not necessary under normal conditions.  <b>Skin and body Protection:</b> Not necessary under normal conditions, Wear suitable protective clothing and gloves if handling an open or leaking battery.  <b>Hand protection:</b> Wear suitable gloves if handling an open or leaking battery.  <b>Eye Protection:</b> Not necessary under normal conditions, Wear safety glasses if handling an open or leaking battery.</p>
<p>其它防护装备 <b>Other Protective Equipment</b></p>	<p>在工作区域应该有一个立即可以使用的安全淋浴和喷水洗眼器。  <b>Have a safety shower and eye wash fountain readily available in the immediate work area.</b></p>
<p>卫生措施 <b>Hygiene Measures</b></p>	<p>在工作区域不得进食, 饮水或吸烟。  <b>Do not eat, drink, or smoke in work area. Maintain good housekeeping.</b></p>

第九部分-物理和化学特性

**Section 9- Physical and Chemical Properties**

<p>颜色 <b>Color</b></p>	<p>紫色 <b>Purple</b></p>
<p>气味 <b>Odour</b></p>	<p>不适用 <b>Not Applicable</b></p>
<p>酸碱度 <b>pH</b></p>	<p>不适用 <b>Not Applicable</b></p>
<p>熔点/凝固点 <b>Melting point/freezing point</b></p>	<p>不适用 <b>Not Applicable</b></p>
<p>沸点、沸点范围: <b>Boiling Point and Boiling range</b></p>	<p>不适用 <b>Not Applicable</b></p>
<p>易燃度 <b>Flash Point</b></p>	<p>不适用 <b>Not Applicable</b></p>
<p>自燃或爆炸的上、下极限 <b>Upper/lower flammability or explosive limits</b></p>	<p>不适用 <b>Not Applicable</b></p>
<p>蒸汽压 <b>Vapor Pressure</b></p>	<p>不适用 <b>Not Applicable</b></p>

蒸汽密度 <b>Vapor Density</b>	不适用 Not Applicable
相对密度 <b>Relative density</b>	不适用 Not Applicable
水溶性 <b>Solubility in Water</b>	不适用 Not Applicable
自燃温度 <b>Auto-ignition temperature</b>	不适用 Not Applicable
分解温度 <b>Decomposition temperature</b>	不适用 Not Applicable
蒸发速率 <b>Evaporation rate</b>	不适用 Not Applicable
易燃性(土壤、天然气) <b>Flammability (soil, gas)</b>	不适用 Not Applicable
粘性 <b>Viscosity</b>	不适用 Not Applicable
第十部分 稳定性和反应活性 <b>Section 10- Stability and reactivity</b>	
稳定性 <b>Stability</b>	产品在第七部分所述的条件下稳定 The product is stable under conditions described Section 7
应避免的条件 <b>Conditions to Avoid</b>	加热 70°C 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。 Heat above 70°C or incinerate. Deform, Mutilate, Crush, Disassemble, Overcharge, Short circuit, Expose over a long period to humid conditions.
不兼容的材料 <b>Incompatible Materials</b>	氧化剂，酸，碱。 Oxidizing agents, acid, base.
危险分解物 <b>Hazardous Decomposition Products</b>	一氧化碳、二氧化碳、氧化锂烟雾。 Carbon monoxide, carbon dioxide, lithium oxide fumes.
危险反应的可能性 <b>Possibility of Hazardous Reaction</b>	不适用 Not Applicable
第十一部分-毒理学资料 <b>Section 11 - Toxicological Information</b>	
刺激	如果电芯的外壳受到机械、热或电的滥用到达一定程度，会发生刺激的风险。

<b>Irritation</b>	如果发生这种情况，可能会刺激皮肤、眼睛和呼吸道。 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.
致过敏 <b>Sensitization</b>	不适用 Not Applicable
影响神经系统 <b>Neurological Effects</b>	不适用 Not Applicable
致畸 <b>Teratogenicity</b>	不适用 Not Applicable
再生毒性 <b>Reproductive Toxicity</b>	不适用 Not Applicable
诱变(遗传效应) <b>Mutagenicity (Genetic Effects)</b>	不适用 Not Applicable
附带材料毒理性 <b>Toxicologically Synergistic Materials</b>	不适用 Not Applicable
第十二部分-生态学资料 <b>Section 12- Ecological Information</b>	
生态毒性 <b>Ecological Toxicity</b>	不适用 Not Applicable
在土壤中的流动性 <b>Mobility in soil</b>	不适用 Not Applicable
持久性和分解性 <b>Persistence and Degradability</b>	不适用 Not Applicable
生物聚积 <b>Bioaccumulation potential</b>	不适用 Not Applicable
其他不利影响 <b>Other Adverse Effects</b>	不适用 Not Applicable
第十三部分-废弃处置	

## Section 13- Disposal Considerations

<b>产品废弃处理建议</b> <b>Product disposal recommendation</b>	遵守当地、州和联邦法律和法规。 Observe local, state and federal laws and regulations.
<b>包装处理建议</b> <b>Packaging disposal recommendation</b>	废弃处理必须根据当地法规 Disposal must be made according to official regulations

### 第十四部分-运输信息

## Section 14 - Transport Information

<b>运输标签</b> <b>Label for conveyance</b>	锂电池标签 Lithium Battery Label
<b>UN 编号</b> <b>UN Number</b>	UN 3480 或 UN 3481 UN 3480 or UN 3481
<b>运输风险类别</b> <b>Transport hazard class(es)</b>	9
<b>包装等级</b> <b>Packing group</b>	---
<b>海洋污染物</b> <b>Marine pollutant</b>	无污染 No
<b>联合国运输专用名称</b> <b>UN Proper shipping name</b>	锂离子电池(包括锂离子聚合物电池) Lithium ion Batteries (Including lithium ion polymer batteries) 锂离子电池和设备包装在一起(包括锂离子聚合物电池) Lithium ion Batteries packed with equipment (Including lithium ion polymer batteries) 设备里内含锂离子电池(包括锂离子聚合物电池) Lithium ion Batteries contained in equipments (Including lithium ion polymer batteries)
<b>ICAO/IATA</b>	可根据国际民用航空组织(ICAO), TI 或国际航空协会(IATA) DGR 66 版本包装说明 965 第 IB 节规定或 966~967 第 II 节规定进行空运 Can be shipped by air in accordance with international Civil Aviation Organization (ICAO), TI or International Air Transport Association (IATA) DGR 66 <sup>th</sup> Packing Instructions Section IB of 965 or Section II of 966~967 appropriately.

<b>IMDG CODE</b>	《国际海运危险货物规则》特殊规定 188 IMDG CODE (Amdt 42-24) International Maritime Dangerous Goods Code under Special Provision 188 IMDG CODE (Amdt 42-24)
<b>ADR</b>	《国际危险货物道路运输欧洲协定》(ADR)根据特殊规定 188 European Agreement concerning the International Carriage of Dangerous Goods by Road under Special Provision 188
<b>RID</b>	《国际危险货物铁路运输欧洲协定》(RID)根据特殊规定 188 Regulations concerning the International Carriage of Dangerous Goods by Rail under Special Provision 188

危险品规例规定，运输前，每一个电池设计须通过联合国试验和标准手册38.3节所载的测试。

The dangerous goods regulations require that each battery design be subject to tests contained in Section 38.3 of the UN Manual of Tests and Criteria prior to being offered for transport.

第十五部分 法规信息

**Section 15- Regulatory information**

法律信息

Law information

- 《危险物品规则》
- 《Dangerous Goods Regulations》
- 《对危险货物运输的有关规定的建议》
- 《Recommendation on the Transport of Dangerous Goods Model Regulations》
- 《国际海运危险货物规则》
- 《International Maritime Dangerous Goods》
- 《危险品安全运输技术指令》
- 《Technical Instructions for the Safe Transport of Dangerous Goods》
- 《危险货物分类和品名编号》
- 《Classification and code of dangerous Goods》
- 《消费产品安全法》
- 《Consumer Product Safety Act》(CPSA)
- 《联邦环境污染控制法》
- 《Federal Environmental Pollution Control Act》(FEPCA)
- 《资源保护及恢复法案》
- 《Resource Conservation and Recovery Act》(RCRA)
- 《国际危险货物道路运输欧洲协定》
- 《European Agreement concerning the International Carriage of Dangerous》
- 《国际危险货物铁路运输欧洲协定》
- 《Regulations concerning the International Carriage of Dangerous》

根据所有联邦、州和地方法律。

In according with all Federal, State and local laws.

## Section 16- Other Information

上面的信息被认为是准确代表了目前最好的信息提供给我们。然而,本文没有对商品性能保证或任何其他保证,包括明示或暗示,对这类信息的使用我们不承担责任。用户应作出自己的调查,以确定是否适合其特定用途的信息。虽然在此处所包含的数据的准备已经采取了合理的预防措施,这是仅为你提供的信息、考虑和调查。这个化学品安全技术说明书为本产品提供了安全操作指南和使用指南,它并不能对所有可能发生的情况提供建议,因此,您特殊使用该产品应先进进行评估,以确定是否需要额外的预防措施。

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

— End of Report —

— 报告结束 —

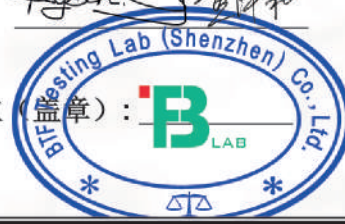
# MSDS Report

# MSDS 报告

<b>Applicant's name</b> 委托方名称	CONFIDENTIAL
<b>Applicant's Address</b> 委托方地址	CONFIDENTIAL
<b>Name of Sample</b> 样品名称	Rechargeable Li-polymer Cell 可充电锂聚合物电芯
<b>Model</b> 型号	955465
<b>Nominal Voltage</b> 标称电压	3.7V
<b>Rated Capacity</b> 额定容量	5000mAh 18.5Wh
<b>Weight</b> 重量	74.2g
<b>Size 尺寸 (L×W×T)</b>	(65.0×54.0×9.5)mm
<b>Testing Laboratory</b> 测试机构	BTF Testing Lab (Shenzhen) Co., Ltd. 信恒检测技术（深圳）有限公司 F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China 深圳市宝安区松岗街道潭头社区潭头工业城二区 1 栋厂房 101.201.301
<b>Report No.</b> 报告编号	BTF241030B024M01
<b>Effective Date</b> 生效日期	2025-01-01

Tested by 主检人: Jm.wei 魏锦芳Approved by 批准人: [Signature]Inspected by 审核人: [Signature]

Seal of BTF 报告单位 (盖章):



## Material Safety Data Sheet 化学品安全技术说明书

### Section 1 - Chemical Product & Company Identification

#### 第一部分 - 化学品及企业标识

<b>Name of Sample</b> 样品名称	Rechargeable Li-polymer Cell 可充电锂聚合物电芯
<b>Manufacturer's name</b> 制造商名称	CONFIDENTIAL
<b>Manufacturer's Address</b> 制造商地址	CONFIDENTIAL
<b>Tel</b> 电话	CONFIDENTIAL
<b>Emergency Tel</b> 应急电话	CONFIDENTIAL
<b>E-mail</b> 邮箱	CONFIDENTIAL

### Section 2 - Hazards Identification

#### 第二部分 - 危险性概述

<b>Classification of Danger</b> 危险性类别	See section 14. 见第十四部分。
<b>Primary Route(s) of Exposure</b> 浸入途径	Eye, skin contact, ingestion. 眼睛, 皮肤接触, 摄入。
<b>Health Hazard</b> 健康危害	<p>The batteries are not hazardous when used according to the instructions of manufacturer under normal conditions. In case of abuse, there's Hazard of rupture, fire, heat, leakage of internal components, which could cause casualty loss. Abuses including 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.</p> <p>正常条件下根据制造商的说明使用电池不会产生危害。使用不当的情况下, 有破裂、起火、发烫、内部成分泄漏的危险, 并可能造成意外损失。使用不当的行为包括但不限于下列情况: 长时间充电、短路、投入火中、硬物撞击、尖物刺破、破碎, 和破裂。</p>

### Section 3 - Composition/Information on Ingredients

#### 第三部分 - 成分/组成信息

Chemical Name 化学名称	Concentration or concentration ranges (%) 浓度或浓度范围(%)	CAS Number CAS 号(化学文摘索引登记号)
Lithium Manganese Nickel And Cobalt 镍钴锰酸锂	45.4	182442-95-1
Polyvinylidene Fluoride (PVDF) 聚偏氟乙烯	0.57	24937-79-9
CNTS 碳纳米管	5.00	16291-96-6
Aluminium 铝	3.33	7429-90-5
Graphite 石墨	16.48	7782-42-5
SUPER-P 导电炭黑	0.22	1333-86-4
Styrene-Butadiene Rubber(SBR) 丁苯橡胶	0.39	9003-55-8
Carboxymethyl Cellulose 羧甲基纤维素	0.31	9000-11-7
Copper 铜	6.74	7440-50-8
Nickel 镍	1.08	7440-02-0
Lithium Hexafluorophosphate 六氟磷酸锂	14.56	21324-40-3
Aluminium 铝极耳	0.11	7429-90-5
Nickel 镍极耳	0.35	7440-02-0
Polyethylene 聚乙烯	3.03	9002-88-4
Nylon 尼龙	0.8	24937-16-4
Polypropylene 聚丙烯	1.3	9003-07-0
Other 其他	0.19	N/A

Labeling according to EC directives.

标签根据 EC 指令。

No symbol and Hazard phrase are required.

不需要象形符号和危险短语。

Note: CAS number is Chemical Abstract Service Registry Number.

注意: CAS 号是化学文摘服务注册号码。

N/A=Not apply.

N / A =不适用。

## Section 4 - First Aid Measures

### 第四部分 - 急救措施

<b>Eye</b> 眼睛	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid. 万一接触，立即用大量的清水冲洗至少 15 分钟，翻起上下眼睑，直到化学的残留物消失为止，迅速就医。
<b>Skin</b> 皮肤	Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid. 万一接触，用大量水冲洗至少 15 分钟，同时除去污染的衣物和鞋子，迅速就医。
<b>Inhalation</b> 吸入	Remove from exposure and move to fresh air immediately. Use oxygen if available. 立即从暴露处移至空气清新处，如果呼吸困难给予输氧，立即就医。
<b>Ingestion</b> 食入	Ingesting damaged batteries, do not induce vomiting or give food or drink. Seek medical attention immediately. 食入损坏的电池，不要催吐且不要再吃下食物或喝饮料，立刻就医。

### Section 5 - Fire Fighting Measures

#### 第五部分 - 消防措施

<b>Characteristics of Hazard</b> 危险特性	Dusts at sufficient concentrations can form explosive mixtures with air. Combustion generates toxic fumes. 高密度粉尘遇空气会形成爆炸性混合物。燃烧生成有毒烟雾。
<b>Hazardous Combustion Products</b> 燃烧产生的危险物品	Carbon dioxide. 二氧化碳。
<b>Fire-extinguishing Methods and Extinguishing Media</b> 灭火方法及灭火剂	For small fires, use water spray, dry chemical, carbon dioxide or chemical foam. 对于小型火险，可使用水枪，干冰（也就是液态二氧化碳）或化学泡沫。
<b>Attention in Fire-extinguishing</b> 灭火注意事项	Wear self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. 因为压强关系，要穿戴可呼吸式全身防护装备，MSHA/NIOSH（经认证或等效的），以及佩戴全套防护装置。

### Section 6 - Accidental Release Measures

#### 第六部分 - 泄露应急处理

<b>Personal Precautions, protective equipment, and emergency procedures</b> 个人预防措施、防护装备和应急程序	In case of rupture. Attention! Corrosive material. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Refer to protective measures listed in Sections 7 and 8. 万一破裂。注意！腐蚀性物质。避免接触皮肤，眼睛或衣服。确保空气流通。根据需要使用个人防护装备。将人员撤离到安全区域。让人们远离溢出/泄漏处和处于逆风。参考第七部分和第八部分中列出的防护措施。
<b>Environmental Precautions</b> 环境保护措施	Prevent product from contaminating soil and from entering sewers or waterways. 防止产品污染土壤和进入下水道或水道。
<b>Methods and materials for Containment</b> 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，可以用干砂或泥土来遏制液体溢出，立即清理溢出物。
<b>Methods and materials for cleaning up</b> 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（干砂或泥土）吸收溢出的材料。污染物转移到可接受的废物容器中。收集所有受污染的吸收剂，按照第十三部分的说明进行处理。用洗涤剂和水清洁污染区域，收集所有受污染的洗涤水，妥善处理。

**Section 7 - Handling and Storage**

**第七部分 - 操作处置与储存**

<p><b>Handling</b> 操作</p>	<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. 拆解、挤压、直接放入火中或高温条件下，电池可能发生爆炸和燃烧。禁止短路或将电池正负极错误的安装在设备中。</p>
<p><b>Storage</b> 储存</p>	<p>Store in a cool, dry, well-ventilated area away from incompatible substances. Store locked up. Keep out of the reach of children. 储藏于阴凉，干燥，通风处，远离接触会发生反应的材料。存储锁定。放在儿童无法接触的地方。</p>
<p><b>Other Precautions</b> 其他要注意的防范措施</p>	<p>In case of rupture. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection equipment. 万一破裂。按照良好的工业卫生和安全规范进行操作。避免接触皮肤，眼睛或衣服。使用个人防护设备。</p>

**Section 8 - Exposure Controls/Personal Protection**

**第八部分 - 接触控制和个体防护**

<p><b>Engineering Controls</b> 工程控制</p>	<p>Use adequate ventilation to keep airborne concentrations low. If used under conditions that generate particulates, the ACGIH TLV-TWA of 3mg/m<sup>3</sup> respirable fraction (10mg/m<sup>3</sup> total) should be observed. 保证空气流通使空气密度保持在低水平。如果在会生成微粒的情况下使用，应仔细观察 3mg/m<sup>3</sup> ACGIH TLV-TWA 3 的吸入量（总量为 10mg/m<sup>3</sup>）。</p>
<p><b>Personal Protective Equipment</b> 个人防护设备</p>	<p><b>Eye and Face Protection:</b> None required for consumer use. If there is a Hazard of contact: Tight sealing safety goggles. Face protection shield. 眼睛和脸部保护：消费者无需使用。如果有接触危险：密封安全护目镜。面部防护罩。</p> <p><b>Skin and Body Protection:</b> None required for consumer use. If there is a Hazard of contact: Wear protective gloves and protective clothing. 皮肤和身体防护：消费者无需使用。如果有接触危险：穿戴防护手套和防护服。</p> <p><b>Respiratory Protection:</b> No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. 呼吸系统防护：正常使用条件下不需要防护设备。如果超过暴露限值或发生刺激，可能需要通风和疏散。</p>

## Section 9 - Physical and Chemical Properties

### 第九部分 - 理化特性

<b>Physical State</b> 物理状态	Appearance: Prismatic 外形: 棱柱形
	Color: Silver 颜色: 银色
	Odour: If leaking, smells of medical ether. 气味: 泄漏时, 医用乙醚的气味。
<b>Change in condition:</b> 变化的条件:	
<b>pH</b> 酸碱度	Not applicable as supplied. 不适用。
<b>Flash Point</b> 闪点	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。
<b>Flammability</b> 易燃度	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。
<b>Relative density:</b> 相对密度	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。
<b>Solubility (water)</b> 溶解性 (水溶性)	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。
<b>Solubility (other)</b> 溶解性 (其他)	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。

## Section 10 - Stability and Reactivity

### 第十部分 - 稳定性和反应性

<b>Chemical Stability</b> 化学稳定性	Stable under recommended storage conditions. 在推荐的储存条件下可以保持稳定。
<b>Possibility of Hazardous Reactions</b> 危险反应的可能性	None under normal processing. 正常处理下没有。
<b>Conditions to Avoid</b> 应避免的条件	Exposure to air or moisture over prolonged periods. 暴露在空气中或长时间受潮。
<b>Incompatible materials</b> 不相容材料	Acids, Oxidizing agents, Bases. 酸, 氧化剂, 碱。
<b>Hazardous Decomposition Products</b> 有危害分解物	Carbon oxides. 二氧化碳。

### Section 11 - Toxicological Information

#### 第十一部分 - 毒理学信息

<b>Irritation</b> 刺激	In the event of exposure to internal contents, vapour 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的刺激性。
<b>Sensitization</b> 致敏	Not Available. 不适用。
<b>Reproductive Toxicity</b> 再生毒性	Not Available. 不适用。
<b>Toxicologically Synergistic Materials</b> 协同材料毒理学	Not Available. 不适用。

### Section 12 - Ecological Information

#### 第十二部分 - 生态学信息

<b>General note:</b> 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接触地下水、水道或污水处理系统。
<b>Anticipated behavior of a chemical product in environment/possible environmental impact/ecotoxicity</b> 化学产品对环境/可能的环境预期的行为的一种生态毒性	Not Available. 不适用。

### Section 13 - Disposal Considerations

#### 第十三部分 - 废弃处置

<b>Waste Treatment</b> 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。
<b>Attention for Waste Treatment</b> 废弃注意事项	Deserted batteries shouldn't be treated as ordinary trash. Shouldn't be thrown into fire or placed in high temperature. Shouldn't be dissected, pierced, crushed or treated similarly. Best disposal method is recycling. 废电池不能被当作普通垃圾。不能扔进火中或置于高温下。不能解体，刺穿，破碎或类似的处理。最好的处理办法是回收利用。

Section 14 - Transport Information 第十四部分 - 运输信息	
<b>UN number</b> 联合国货物编号 (UN 编号)	3480 & 3481
<b>Proper shipping name</b> 运输专用名称	<p>Lithium ion batteries (Suggested limited to a maximum of 30% SoC or; 锂离子电池 (荷电状态不得超过其额定容量的 30%) 或;</p> <p>Lithium ion batteries packed with equipment (including lithium ion polymer batteries) (Suggested limited to a maximum of 30% SoC) or; 与设备一起包装的锂离子电池 (包括锂离子聚合物电池) (荷电状态建议不超过其额定容量的 30%) 或;</p> <p>Lithium ion batteries contained in equipments (including lithium ion polymer batteries) (Suggested limited to a maximum of 30% SoC). 包含在设备中的锂离子电池 (包括锂离子聚合物电池) (荷电状态建议不超过其额定容量的 30%)。</p>
<b>Label(s) / Placard Required</b> 标签/标牌要求	Miscellaneous Lithium battery 杂项锂电池
<p><b>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.</b> 无论是对内还是对外的运输或运输方式, 用户都需要注意或遵守的特殊预防措施。</p>	
<b>ICAO / IATA:</b> 国际民间航空组织/国际航空运输协会:	<p>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 IB, PI 966 Section II and PI 967 Section II appropriate of IATA DGR 66<sup>th</sup> (2025 Edition) for transportation. 货物可根据民用航空组织 (ICAO), TI 或国际航空运输协会 (IATA), DGR 66<sup>th</sup> (2025 版) 包装说明 (PI) 965 Section IB, PI 966 Section II 和 PI 967 Section II 相关规定进行空运。</p>
<b>IMDG CODE:</b> 国际海运危险货物规则:	<p>The batteries are not restricted to IMDG Code 2022 Edition (Amdt 41-22) according to special provision 188. 根据特殊规定 188, 该电池不受 IMDG Code 2022 版 (Amdt 41-22) 限制。</p>
<b>DOT:</b> 美国运输部:	<p>Other requirements for the US Department of Transportation (DOT) Subchapter C, Hazardous Materials Regulations if shipped in compliance with 49 CFR 173.185. 美国运输部 (DOT) 有害物质规则 C 分章中的其他规定, 运输符合要求 49 CFR 173.185。</p>
<b>ADR/ ADN:</b> 欧洲国际陆运危险货物协定/关于内陆水道国际运输危险货物的欧洲协定:	<p>The batteries are not subject to the provisions of United Nations Economic Commission for Europe (UNECE) ADR/ADN if they meet the requirements of special provision 188 of Chapter 3.3. Applicable as from 1 January 2025. 自 2025 年 1 月 1 日起适用于联合国欧洲经济委员会 (UNECE) ADR / ADN, 如果电池符合第 3.3 章第 188 条的特殊要求, 则电池不受限制。</p>
<p>In addition, to be permitted in transport each lithium cell and battery types must have passed the applicable tests set out in Subsection 38.3 of the UN Manual of Tests and Criteria. 此外, 每个锂电芯和电池类型都必须通过联合国《关于危险货物运输的建议书 试验和标准手册》第 38.3 节规定的适用测试。</p>	

**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 (23<sup>rd</sup> revised edition)联合国《关于危险货物运输的建议书 规章范本》（23<sup>rd</sup> 修订版）

Recommendations on the Transport of Dangerous Goods-Manual of Tests and Criteria

联合国《关于危险货物运输的建议书 试验和标准手册》

International Air Transport Association (IATA)

《国际航空运输协会》（IATA）

International Maritime Dangerous Goods (IMDG Code 2022 Edition Amdt 41-22)

《国际海运危险货物规则》（IMDG Code 2022 版 Amdt 41-22）

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 (GB 6944-2012)

《危险货物分类和品名编号》- GB 6944-2012

2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

2012《职业安全与健康标准》危险通信标准（29 CFR 1910.1200）

Toxic Substance Control Act (TSCA)

《有毒物质控制法》（TSCA）

Code of Federal Regulations

《联邦条例》

In accordance with all Federal, State and local laws

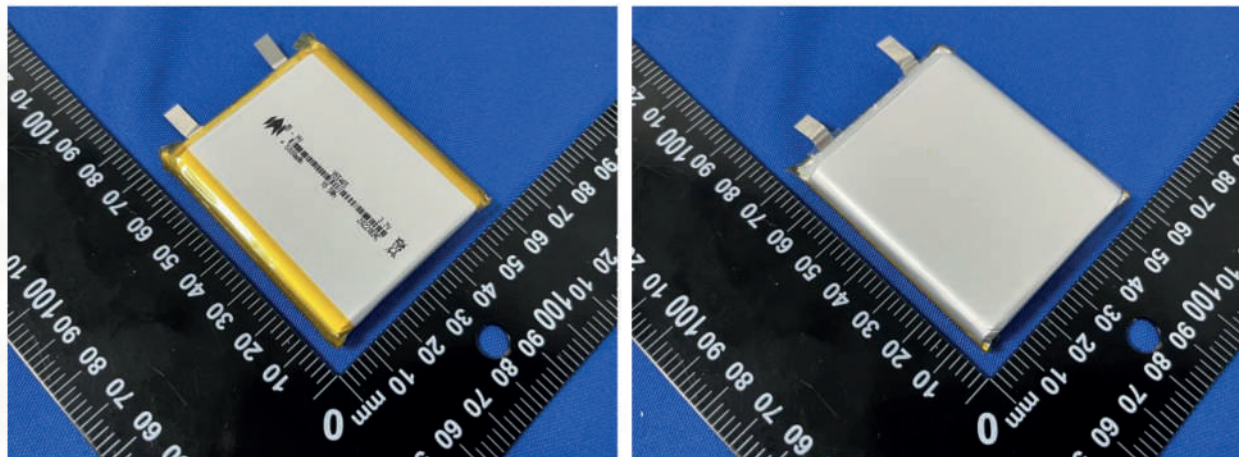
符合所有联邦、州和地方法律

## Section 16 - Additional Information

### 第十六部分 - 其他信息

MSDS creation date: 2025 Version: 1.0

Sample photo 样品照片:



To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

本份 MSDS 中的信息只是基于我们当前所拥有的相关材料的信息而编制的，只是为了描述本品的健康、安全与环境需求，以使各有关方面能更好地了解和信任本产品。这些信息只是提供给您，以供考虑、研究和确认。其中的一些危害预防措施描述并非唯一的。所以本份 MSDS 不能作为使用本品实现任何特定目的的保证。各有关使用者有责任预先完成本品的安全性及其他方面的测试，以评判其是否满足您的使用目的。

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

本文所包含的数据/信息已经过审核和批准，但本文档不包含出口管制信息。

\*\*\*\*\*End of Report 报告结束\*\*\*\*\*

# MSDS Report

## MSDS 报告

Applicant's name 委托方名称	CONFIDENTIAL
Applicant's Address 委托方地址	CONFIDENTIAL
Name of Sample 样品名称	Polymer Li-ion Cell 聚合物锂离子电池
Model 型号	706074
Nominal Voltage 标称电压	3.85V
Rated Capacity 额定容量	5000mAh, 19.25Wh
Weight 重量	66.9g
Size 尺寸 (L×W×T)	(74.0×60.0×7.0)mm
Prepared By 编制单位	Shenzhen TCT Testing Technology Co., Ltd. 深圳市通测检测技术有限公司 2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China 广东省深圳市宝安区福海街道桥头社区稔山工业区振昌胶粘制品厂 2101、2201
Report No. 报告编号	TCT231027M042

Written by 编写: Spring Fu 傅福花

Approved by 批准: Tomsin 冯晓红

Inspected by 审核: Amy Zeng 曾

Effective Date 生效日期: 2024.01.01



**Material Safety Data Sheet 化学品安全技术说明书****Section 1- Chemical Product & Company Identification****第一部分 化学品及企业标识**

<i>Name of Sample</i> 样品名称	Polymer Li-ion Cell 聚合物锂离子电池
<i>Manufacturer's name</i> 生产单位名称	<b>CONFIDENTIAL</b>
<i>Manufacturer's Address</i> 生产单位地址	<b>CONFIDENTIAL</b>
<i>Tel</i> 电话	<b>CONFIDENTIAL</b>
<i>Emergency Tel</i> 应急电话	<b>CONFIDENTIAL</b>
<i>E-mail</i> 邮箱	<b>CONFIDENTIAL</b>

**Section 2- Hazards Identification****第二部分 危险性概述**

<i>Classification of Danger</i> 危险性类别	See section 14. 见第十四部分。
<i>Primary Route(s) of Exposure</i> 浸入途径	Eye, skin contact, ingestion. 眼睛, 皮肤接触, 摄入。
<i>Health Hazard</i> 健康危害	<p>The batteries are not hazardous when used according to the instructions of manufacturer under normal conditions. In case of abuse, there's Hazard of rupture, fire, heat, leakage of internal components, which could cause casualty loss. Abuses including 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.</p> <p>正常条件下根据制造商的说明使用电池不会产生危害。使用不当的情况下, 有破裂、起火、发烫、内部成分泄漏的危险, 并可能造成意外损失。使用不当的行为包括但不限于下列情况: 长时间充电、短路、投入火中、硬物撞击、尖物刺破、破碎, 和破裂。</p>

Section 3- Composition/Information on Ingredients

第三部分 成分/组成信息

Chemical Name 化学名称	Concentration or concentration ranges (%) 浓度或浓度范围(%)	CAS Number CAS 号(化学文摘索引登记号)
Li(Ni <sub>0.5</sub> Co <sub>0.2</sub> Mn <sub>0.3</sub> )O <sub>2</sub> 镍钴锰酸锂	45.86	113066-89-0
Polyvinylidene Fluoride(PVDF) 聚偏氟乙烯	0.52	24937-79-9
CNTS 碳纳米管	4.89	16291-96-6
Aluminium(Al) 铝箔	3.31	7429-90-5
Graphite 石墨	16.48	7782-42-5
SUPER-P 导电炭黑	0.25	1333-86-4
Styrene-Butadiene Rubber (SBR) 丁苯橡胶	0.41	9003-55-8
Carboxymethylcellulose 羧甲基纤维素	0.3	9000-11-7
Copper (Cu) 铜箔	6.63	7440-50-8
Nickel (Ni) 镍	1.09	7440-02-0
Lithium Hexafluorophosphate 六氟磷酸锂	14.45	21324-40-3
Aluminium(Al) 铝极耳	0.26	7429-90-5
Nickel(Ni) 镍极耳	0.32	7440-02-0
Polyethylene 聚乙烯	3.03	9002-88-4
Nylon 尼龙	0.8	24937-16-4
Polypropylene 聚丙烯	1.4	9003-07-0

Labeling according to EC directives.

标签根据 EC 指令。

No symbol and Hazard phrase are required.

不需要象形符号和危险短语。

Note: CAS number is Chemical Abstract Service Registry Number.

注意: CAS 号是化学文摘服务注册号码。

N/A=Not apply.

N / A =不适用。

**Section 4- First Aid Measures**

**第四部分 急救措施**

<b>Eye</b> 眼睛	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid. 万一接触，立即用大量的清水冲洗至少 15 分钟，翻起上下眼睑，直到化学的残留物消失为止，迅速就医。
<b>Skin</b> 皮肤	Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid. 万一接触，用大量水冲洗至少 15 分钟，同时除去污染的衣物和鞋子，迅速就医。
<b>Inhalation</b> 吸入	Remove from exposure and move to fresh air immediately. Use oxygen if available. 立即从暴露处移至空气清新处，如果呼吸困难给予输氧，立即就医。
<b>Ingestion</b> 食入	Ingesting damaged batteries, do not induce vomiting or give food or drink. Seek medical attention immediately. 食入损坏的电池，不要催吐且不要再吃下食物或喝饮料，立刻就医。

**Section 5- Fire Fighting Measures**

**第五部分 消防措施**

<b>Characteristics of Hazard</b> 危险特性	Dusts at sufficient concentrations can form explosive mixtures with air. Combustion generates toxic fumes. 高密度粉尘遇空气会形成爆炸性混合物。燃烧生成有毒烟雾。
<b>Hazardous Combustion Products</b> 燃烧产生的危险物品	Carbon dioxide. 二氧化碳。
<b>Fire-extinguishing Methods and Extinguishing Media</b> 灭火方法及灭火剂	For small fires, use water spray, dry chemical, carbon dioxide or chemical foam. 对于小型火险，可使用水枪，干冰（也就是液态二氧化碳）或化学泡沫。
<b>Attention in Fire-extinguishing</b> 灭火注意事项	Wear self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. 因为压强关系，要穿戴可呼吸式全身防护装备，MSHA/NIOSH（经认证或等效的），以及佩戴全套防护装置。

**Section 6- Accidental Release Measures**

**第六部分 泄露应急处理**

<p><i>Personal Precautions, protective equipment, and emergency procedures</i> 个人预防措施、防护装备和应急程序</p>	<p>In case of rupture. Attention! Corrosive material. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Refer to protective measures listed in Sections 7 and 8. 万一破裂。注意！腐蚀性物质。避免接触皮肤，眼睛或衣服。确保空气流通。根据需要使用个人防护装备。将人员撤离到安全区域。让人们远离溢出/泄漏处和处于逆风。参考第七部分和第八部分中列出的防护措施。</p>
<p><i>Environmental Precautions</i> 环境保护措施</p>	<p>Prevent product from contaminating soil and from entering sewers or waterways. 防止产品污染土壤和进入下水道或水道。</p>
<p><i>Methods and materials for Containment</i> 方法和材料控制</p>	<p>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，可以用干砂或泥土来遏制液体溢出，立即清理溢出物。</p>
<p><i>Methods and materials for cleaning up</i> 清理的方法和材料</p>	<p>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(干砂或泥土)吸收溢出的材料。污染物转移到可接受的废物容器中。收集所有受污染的吸收剂，按照第十三部分的说明进行处理。用洗涤剂和水清洁污染区域，收集所有受污染的洗涤水，妥善处理。</p>
<p><b>Section 7- Handling and Storage</b> 第七部分 操作处置与储存</p>	
<p><i>Handling</i> 操作</p>	<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. 拆解、挤压、直接放入火中或高温条件下，电池可能发生爆炸和燃烧。禁止短路或将电池正负极错误的安装在设备中。</p>
<p><i>Storage</i> 储存</p>	<p>Store in a cool, dry, well-ventilated area away from incompatible substances. Store locked up. Keep out of the reach of children. 储藏于阴凉，干燥，通风处，远离接触会发生反应的材料。存储锁定。放在儿童无法接触的地方。</p>
<p><i>Other Precautions</i> 其他要注意的防范措施</p>	<p>In case of rupture. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection equipment. 万一破裂。按照良好的工业卫生和安全规范进行操作。避免接触皮肤，眼睛或衣服。使用个人防护设备。</p>

**Section 8 - Exposure Controls/Personal Protection**  
第八部分 接触控制和个体防护

<p><b>Engineering Controls</b> 工程控制</p>	<p>Use adequate ventilation to keep airborne concentrations low. If used under conditions that generate particulates, the ACGIH TLV-TWA of 3mg/m<sup>3</sup> respirable fraction (10mg/m<sup>3</sup> total) should be observed. 保证空气流通使空气密度保持在低水平。如果在会生成微粒的情况下使用，应仔细观察 3mg/m<sup>3</sup> ACGIH TLV-TWA 3 的吸入量（总量为 10mg/m<sup>3</sup>）。</p>
<p><b>Personal Protective Equipment</b> 个人防护设备</p>	<p><b>Eye and Face Protection:</b> None required for consumer use. If there is a Hazard of contact: Tight sealing safety goggles. Face protection shield. 眼睛和脸部保护：消费者无需使用。如果有接触危险：密封安全护目镜。面部防护罩。 <b>Skin and Body Protection:</b> None required for consumer use. If there is a Hazard of contact: Wear protective gloves and protective clothing. 皮肤和身体防护：消费者无需使用。如果有接触危险：穿戴防护手套和防护服。 <b>Respiratory Protection:</b> No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. 呼吸系统防护：正常使用条件下不需要防护设备。如果超过暴露限值或发生刺激，可能需要通风和疏散。</p>

**Section 9- Physical and Chemical Properties**

第九部分 理化特性

<p><b>Physical State</b> 物理状态</p>	<p>Appearance: Prismatic 外形：棱柱形 Color: Silver 颜色：银色 Odour: If leaking, smells of medical ether. 气味：泄漏时，医用乙醚的气味。</p>
<p><b>Change in condition:</b> 变化的条件：</p>	
<p>pH 酸碱度</p>	<p>Not applicable as supplied. 不适用。</p>
<p>Flash Point 闪点</p>	<p>Not applicable unless individual components exposed. 除非单个的组件暴露，否则不适用。</p>
<p>Flammability 易燃度</p>	<p>Not applicable unless individual components exposed. 除非单个的组件暴露，否则不适用。</p>
<p>Relative density: 相对密度</p>	<p>Not applicable unless individual components exposed. 除非单个的组件暴露，否则不适用。</p>
<p>Solubility (water) 溶解性（水溶性）</p>	<p>Not applicable unless individual components exposed. 除非单个的组件暴露，否则不适用。</p>

Solubility (other) 溶解性 (其他)	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。
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**Section 10 – Stability and Reactivity**

**第十部分 稳定性和反应性**

<i>Chemical Stability</i> 化学稳定性	Stable under recommended storage conditions. 在推荐的储存条件下可以保持稳定。
<i>Possibility of Hazardous Reactions</i> 危险反应的可能性	None under normal processing. 正常处理下没有。
<i>Conditions to Avoid</i> 应避免的条件	Exposure to air or moisture over prolonged periods. 暴露在空气中或长时间受潮。
<i>Incompatible materials</i> 不相容材料	Acids, Oxidizing agents, Bases. 酸, 氧化剂, 碱。
<i>Hazardous Decomposition Products</i> 有危害分解物	Carbon oxides. 二氧化碳。

**Section 11 – Toxicological Information**

**第十一部分 毒理学信息**

<i>Irritation</i> 刺激	In the event of exposure to internal contents, vapour 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的刺激性。
<i>Sensitization</i> 致敏	Not Available. 不适用。
<i>Reproductive Toxicity</i> 再生毒性	Not Available. 不适用。
<i>Toxicologically Synergistic Materials</i> 协同材料毒理学	Not Available. 不适用。

**Section 12-Ecological Information**

**第十二部分 生态学信息**

<i>General note:</i> 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接触地下水、水道或污水处理系统。
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<p><i>Anticipated behavior of a chemical product in environment/possible environmental impact/ ecotoxicity</i> 化学产品在环境/可能的环境预期的行为的一种生态毒性</p>	<p>Not Available. 不适用。</p>
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**Section 13 – Disposal Considerations**  
第十三部分 废弃处置

<p><i>Waste Treatment</i> 废弃处置方法</p>	<p>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。</p>
<p><i>Attention for Waste Treatment</i> 废弃注意事项</p>	<p>Deserted batteries shouldn't be treated as ordinary trash. Shouldn't be thrown into fire or placed in high temperature. Shouldn't be dissected, pierced, crushed or treated similarly. Best disposal method is recycling. 废电池不能被当作普通垃圾。不能扔进火中或置于高温下。不能解体，刺穿，破碎或类似的处理。最好的处理办法是回收利用。</p>

**Section 14 – Transport Information**  
第十四部分 运输信息

<p><i>UN number</i> 联合国货物编号 (UN 编号)</p>	<p>3480 &amp; 3481</p>
<p><i>Proper shipping name</i> 运输专用名称</p>	<p>Lithium ion batteries (including lithium ion polymer batteries) or; 锂离子电池(包括锂离子聚合物电池)或; Lithium ion batteries packed with equipment (including lithium ion polymer batteries) or; 与设备一起包装的锂离子电池(包括锂离子聚合物电池)或; Lithium ion batteries contained in equipments (including lithium ion polymer batteries). 包含在设备中的锂离子电池(包括锂离子聚合物电池)。</p>
<p><i>UN Classification (Transport hazard class):</i> UN 分类(运输危险类别):</p>	<p>Class 9 (PI965 Section IB) or N/A (PI966~967 Section II) 9类 (包装说明 965 第 IB 部分)或者不适用(包装说明 966~967 第 II 部分)</p>
<p><i>PG Packing Group:</i> PG 包装等级:</p>	<p>N/A 不适用</p>
<p><i>Marine pollutant(Y/N):</i> 海洋污染物(Y/N):</p>	<p>N</p>
<p><i>IMDG EmS No.:</i> IMDG EmS 编号:</p>	<p>F-A, S-I</p>

*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.*

无论是对内还是对外的运输或运输方式，用户都需要注意或遵守的特殊预防措施。

<p><b>ICAO / IATA:</b> 国际民间航空组织/国际航空运输协会:</p>	<p>Can be shipped by air in accordance with International Civil Aviation Organization (ICAO), TI or International Air Transport Association (IATA), DGR Packing Instruction 965 Section IB, 966~967 Section II appropriate of IATA DGR 65<sup>th</sup> (2024 Edition) for transportation. 货物可根据民用航空组织 (ICAO), TI 或国际航空运输协会 (IATA), DGR 65<sup>th</sup> (2024 版) 包装说明 965 Section IB, 966~967 Section II 相关规定进行空运。</p>
<p><b>IMDG CODE:</b> 国际海运危险货物规则:</p>	<p>The batteries are not restricted to IMDG Code 2022 Edition (Amdt 41-22) according to special provision 188. 根据特殊规定 188, 该电池不受 IMDG Code 2022 版 (Amdt 41-22) 限制。</p>
<p><b>DOT:</b> 美国运输部:</p>	<p>Other requirements for the US Department of Transportation (DOT) Subchapter C, Hazardous Materials Regulations if shipped in compliance with 49 CFR 173.185. 美国运输部 (DOT) 有害物质规则 C 分章中的其他规定, 运输符合要求 49 CFR 173.185。</p>
<p><b>ADR/ ADN:</b> 欧洲国际陆运危险货物协定/关于内陆水道国际运输危险货物的欧洲协定:</p>	<p>The batteries are not subject to the provisions of United Nations Economic Commission for Europe (UNECE) ADR/ADN if they meet the requirements of special provision 188 of Chapter 3.3. Applicable as from 1 January 2023. 自 2023 年 1 月 1 日起适用于联合国欧洲经济委员会 (UNECE) ADR / ADN, 如果电池符合第 3.3 章第 188 条的特殊要求, 则电池不受限制。</p>
<p>In addition, to be permitted in transport each lithium cell and battery types must have passed the applicable tests set out in Subsection 38.3 of the UN Manual of Tests and Criteria. 此外, 每个锂电芯和电池类型都必须通过联合国《关于危险货物运输的建议书 试验和标准手册》第 38.3 节规定的适用测试。</p>	

## 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

联合国《关于危险货物运输的建议书 规章范本》

Recommendations on the Transport of Dangerous Goods-Manual of Tests and Criteria

联合国《关于危险货物运输的建议书 试验和标准手册》

International Air Transport Association (IATA)

《国际航空运输协会》 (IATA)

International Maritime Dangerous Goods

《国际海运危险货物规则》

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

《危险货物分类和品名编号》

OSHA Hazard Communication Standard

《职业安全与健康标准》危险通信标准

Toxic Substance Control Act (TSCA)

《有毒物质控制法》(TSCA)

Code of Federal Regulations

《联邦条例》

In accordance with all Federal, State and local laws

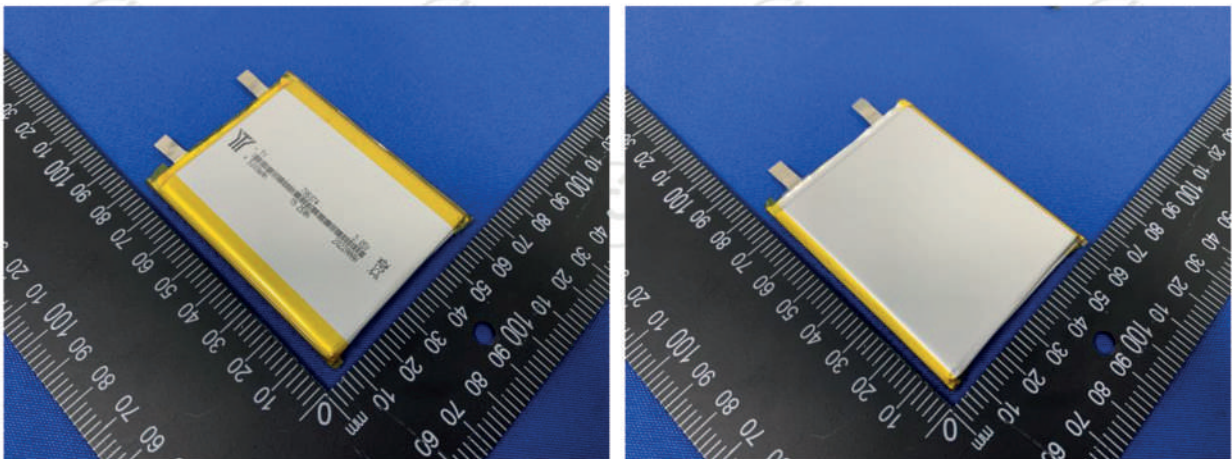
符合所有联邦、州和地方法律

## Section 16 – Additional Information

### 第十六部分 其他信息

MSDS creation date: 2024 Version: 1.0

Sample photo 样品照片:



To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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

\*\*\*\*\*报告结束\*\*\*\*\*

# MSDS Report

# MSDS 报告

<b>Applicant's name</b> 委托方名称	CONFIDENTIAL
<b>Applicant's Address</b> 委托方地址	CONFIDENTIAL
<b>Name of Sample</b> 样品名称	Polymer Li-ion Cell 聚合物锂离子电池
<b>Model</b> 型号	606090
<b>Nominal Voltage</b> 标称电压	3.7V
<b>Rated Capacity</b> 额定容量	4000mAh 14.8Wh
<b>Weight</b> 重量	71.9g
<b>Size 尺寸 (L×W×T)</b>	(88.3×59.7×5.8)mm
<b>Testing Laboratory</b> 测试机构	BTF Testing Lab (Shenzhen) Co., Ltd. 信恒检测技术(深圳)有限公司 F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China 深圳市宝安区松岗街道潭头社区潭头工业城二区 1 栋厂房 101.201.301
<b>Report No.</b> 报告编号	BTF241030B028M01
<b>Effective Date</b> 生效日期	2025-01-01

Tested by 主检人: J.M. Wei 魏锦梦Approved by 批准人: [Signature]Inspected by 审核人: [Signature]Seal of BTF 报告单位 (盖章): 

## Material Safety Data Sheet 化学品安全技术说明书

### Section 1 - Chemical Product & Company Identification

#### 第一部分 - 化学品及企业标识

<b>Name of Sample</b> 样品名称	Polymer Li-ion Cell 聚合物锂离子电芯
<b>Manufacturer's name</b> 制造商名称	CONFIDENTIAL
<b>Manufacturer's Address</b> 制造商地址	CONFIDENTIAL
<b>Tel</b> 电话	CONFIDENTIAL
<b>Emergency Tel</b> 应急电话	CONFIDENTIAL
<b>E-mail</b> 邮箱	CONFIDENTIAL

### Section 2 - Hazards Identification

#### 第二部分 - 危险性概述

<b>Classification of Danger</b> 危险性类别	See section 14. 见第十四部分。
<b>Primary Route(s) of Exposure</b> 浸入途径	Eye, skin contact, ingestion. 眼睛, 皮肤接触, 摄入。
<b>Health Hazard</b> 健康危害	<p>The batteries are not hazardous when used according to the instructions of manufacturer under normal conditions. In case of abuse, there's Hazard of rupture, fire, heat, leakage of internal components, which could cause casualty loss. Abuses including 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.</p> <p>正常条件下根据制造商的说明使用电池不会产生危害。使用不当的情况下, 有破裂、起火、发烫、内部成分泄漏的危险, 并可能造成意外损失。使用不当的行为包括但不限于下列情况: 长时间充电、短路、投入火中、硬物撞击、尖物刺破、破碎, 和破裂。</p>

### Section 3 - Composition/Information on Ingredients

#### 第三部分 - 成分/组成信息

Chemical Name 化学名称	Concentration or concentration ranges (%) 浓度或浓度范围(%)	CAS Number CAS 号(化学文摘索引登记号)
Lithium Manganese Nickel And Cobalt 镍钴锰酸锂	45.4	182442-95-1
Polyvinylidene Fluoride (PVDF) 聚偏氟乙烯	0.57	24937-79-9
CNTS 碳纳米管	5.00	16291-96-6
Aluminium 铝	3.33	7429-90-5
Graphite 石墨	16.48	7782-42-5
SUPER-P 导电炭黑	0.22	1333-86-4
Styrene-Butadiene Rubber(SBR) 丁苯橡胶	0.39	9003-55-8
Carboxymethyl Cellulose 羧甲基纤维素	0.31	9000-11-7
Copper 铜	6.74	7440-50-8
Nickel 镍	1.08	7440-02-0
Lithium Hexafluorophosphate 六氟磷酸锂	14.56	21324-40-3
Aluminium 铝极耳	0.11	7429-90-5
Nickel 镍极耳	0.35	7440-02-0
Polyethylene 聚乙烯	3.03	9002-88-4
Nylon 尼龙	0.80	24937-16-4
Polypropylene 聚丙烯	1.30	9003-07-0
Other 其他	0.41	N/A

Labeling according to EC directives.

标签根据 EC 指令。

No symbol and Hazard phrase are required.

不需要象形符号和危险短语。

Note: CAS number is Chemical Abstract Service Registry Number.

注意: CAS 号是化学文摘服务注册号码。

N/A=Not apply.

N / A =不适用。

## Section 4 - First Aid Measures

### 第四部分 - 急救措施

<b>Eye</b> 眼睛	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid. 万一接触，立即用大量的清水冲洗至少 15 分钟，翻起上下眼睑，直到化学的残留物消失为止，迅速就医。
<b>Skin</b> 皮肤	Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid. 万一接触，用大量水冲洗至少 15 分钟，同时除去污染的衣物和鞋子，迅速就医。
<b>Inhalation</b> 吸入	Remove from exposure and move to fresh air immediately. Use oxygen if available. 立即从暴露处移至空气清新处，如果呼吸困难给予输氧，立即就医。
<b>Ingestion</b> 食入	Ingesting damaged batteries, do not induce vomiting or give food or drink. Seek medical attention immediately. 食入损坏的电池，不要催吐且不要再吃下食物或喝饮料，立刻就医。

## Section 5 - Fire Fighting Measures

### 第五部分 - 消防措施

<b>Characteristics of Hazard</b> 危险特性	Dusts at sufficient concentrations can form explosive mixtures with air. Combustion generates toxic fumes. 高密度粉尘遇空气会形成爆炸性混合物。燃烧生成有毒烟雾。
<b>Hazardous Combustion Products</b> 燃烧产生的危险物品	Carbon dioxide. 二氧化碳。
<b>Fire-extinguishing Methods and Extinguishing Media</b> 灭火方法及灭火剂	For small fires, use water spray, dry chemical, carbon dioxide or chemical foam. 对于小型火险，可使用水枪，干冰（也就是液态二氧化碳）或化学泡沫。
<b>Attention in Fire-extinguishing</b> 灭火注意事项	Wear self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. 因为压强关系，要穿戴可呼吸式全身防护装备，MSHA/NIOSH（经认证或等效的），以及佩戴全套防护装置。

## Section 6 - Accidental Release Measures

### 第六部分 - 泄露应急处理

<b>Personal Precautions, protective equipment, and emergency procedures</b> 个人预防措施、防护装备和应急程序	In case of rupture. Attention! Corrosive material. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Refer to protective measures listed in Sections 7 and 8. 万一破裂。注意！腐蚀性物质。避免接触皮肤，眼睛或衣服。确保空气流通。根据需要使用个人防护装备。将人员撤离到安全区域。让人们远离溢出/泄漏处和处于逆风。参考第七部分和第八部分中列出的防护措施。
<b>Environmental Precautions</b> 环境保护措施	Prevent product from contaminating soil and from entering sewers or waterways. 防止产品污染土壤和进入下水道或水道。
<b>Methods and materials for Containment</b> 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，可以用干砂或泥土来遏制液体溢出，立即清理溢出物。
<b>Methods and materials for cleaning up</b> 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（干砂或泥土）吸收溢出的材料。污染物转移到可接受的废物容器中。收集所有受污染的吸收剂，按照第十三部分的说明进行处理。用洗涤剂和水清洁污染区域，收集所有受污染的洗涤水，妥善处理。

**Section 7 - Handling and Storage**

**第七部分 - 操作处置与储存**

<p><b>Handling</b> 操作</p>	<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. 拆解、挤压、直接放入火中或高温条件下, 电池可能发生爆炸和燃烧。禁止短路或将电池正负极错误的安装在设备中。</p>
<p><b>Storage</b> 储存</p>	<p>Store in a cool, dry, well-ventilated area away from incompatible substances. Store locked up. Keep out of the reach of children. 储藏于阴凉, 干燥, 通风处, 远离接触会发生反应的材料。存储锁定。放在儿童无法接触的地方。</p>
<p><b>Other Precautions</b> 其他要注意的防范措施</p>	<p>In case of rupture. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection equipment. 万一破裂。按照良好的工业卫生和安全规范进行操作。避免接触皮肤, 眼睛或衣服。使用个人防护设备。</p>

**Section 8 - Exposure Controls/Personal Protection**

**第八部分 - 接触控制和个体防护**

<p><b>Engineering Controls</b> 工程控制</p>	<p>Use adequate ventilation to keep airborne concentrations low. If used under conditions that generate particulates, the ACGIH TLV-TWA of 3mg/m<sup>3</sup> respirable fraction (10mg/m<sup>3</sup> total) should be observed. 保证空气流通使空气密度保持在低水平。如果在会生成微粒的情况下使用, 应仔细观察 3mg/m<sup>3</sup> ACGIH TLV-TWA 3 的吸入量 (总量为 10mg/m<sup>3</sup>)。</p>
<p><b>Personal Protective Equipment</b> 个人防护设备</p>	<p><b>Eye and Face Protection:</b> None required for consumer use. If there is a Hazard of contact: Tight sealing safety goggles. Face protection shield. 眼睛和脸部保护: 消费者无需使用。如果有接触危险: 密封安全护目镜。面部防护罩。</p> <p><b>Skin and Body Protection:</b> None required for consumer use. If there is a Hazard of contact: Wear protective gloves and protective clothing. 皮肤和身体防护: 消费者无需使用。如果有接触危险: 穿戴防护手套和防护服。</p> <p><b>Respiratory Protection:</b> No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. 呼吸系统防护: 正常使用条件下不需要防护设备。如果超过暴露限值或发生刺激, 可能需要通风和疏散。</p>

## Section 9 - Physical and Chemical Properties

### 第九部分 - 理化特性

<b>Physical State</b> 物理状态	Appearance: Prismatic 外形: 棱柱形
	Color: Silver 颜色: 银色
	Odour: If leaking, smells of medical ether. 气味: 泄漏时, 医用乙醚的气味。
<b>Change in condition:</b> 变化的条件:	
<b>pH</b> 酸碱度	Not applicable as supplied. 不适用。
<b>Flash Point</b> 闪点	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。
<b>Flammability</b> 易燃度	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。
<b>Relative density:</b> 相对密度	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。
<b>Solubility (water)</b> 溶解性 (水溶性)	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。
<b>Solubility (other)</b> 溶解性 (其他)	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。

## Section 10 - Stability and Reactivity

### 第十部分 - 稳定性和反应性

<b>Chemical Stability</b> 化学稳定性	Stable under recommended storage conditions. 在推荐的储存条件下可以保持稳定。
<b>Possibility of Hazardous Reactions</b> 危险反应的可能性	None under normal processing. 正常处理下没有。
<b>Conditions to Avoid</b> 应避免的条件	Exposure to air or moisture over prolonged periods. 暴露在空气中或长时间受潮。
<b>Incompatible materials</b> 不相容材料	Acids, Oxidizing agents, Bases. 酸, 氧化剂, 碱。
<b>Hazardous Decomposition Products</b> 有危害分解物	Carbon oxides. 二氧化碳。

### Section 11 - Toxicological Information

#### 第十一部分 - 毒理学信息

<b>Irritation</b> 刺激	In the event of exposure to internal contents, vapour 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的刺激性。
<b>Sensitization</b> 致敏	Not Available. 不适用。
<b>Reproductive Toxicity</b> 再生毒性	Not Available. 不适用。
<b>Toxicologically Synergistic Materials</b> 协同材料毒理学	Not Available. 不适用。

### Section 12 - Ecological Information

#### 第十二部分 - 生态学信息

<b>General note:</b> 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接触地下水、水道或污水处理系统。
<b>Anticipated behavior of a chemical product in environment/possible environmental impact/ecotoxicity</b> 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 Available. 不适用。

### Section 13 - Disposal Considerations

#### 第十三部分 - 废弃处置

<b>Waste Treatment</b> 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。
<b>Attention for Waste Treatment</b> 废弃注意事项	Deserted batteries shouldn't be treated as ordinary trash. Shouldn't be thrown into fire or placed in high temperature. Shouldn't be dissected, pierced, crushed or treated similarly. Best disposal method is recycling. 废电池不能被当作普通垃圾。不能扔进火中或置于高温下。不能解体, 刺穿, 破碎或类似的处理。最好的处理办法是回收利用。

<b>Section 14 - Transport Information</b> <b>第十四部分 - 运输信息</b>	
<b>UN number</b> 联合国货物编号 (UN 编号)	3480 & 3481
<b>Proper shipping name</b> 运输专用名称	Lithium ion batteries (Suggested limited to a maximum of 30% SoC or; 锂离子电池 (荷电状态不得超过其额定容量的 30%) 或; Lithium ion batteries packed with equipment (including lithium ion polymer batteries) (Suggested limited to a maximum of 30% SoC) or; 与设备一起包装的锂离子电池 (包括锂离子聚合物电池) (荷电状态建议不超过其额定容量的 30%) 或; Lithium ion batteries contained in equipments (including lithium ion polymer batteries) (Suggested limited to a maximum of 30% SoC). 包含在设备中的锂离子电池 (包括锂离子聚合物电池) (荷电状态建议不超过其额定容量的 30%)。
<b>Label(s) / Placard Required</b> 标签/标牌要求	Miscellaneous Lithium battery 杂项锂电池
<b>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.</b> 无论是对内还是对外的运输或运输方式, 用户都需要注意或遵守的特殊预防措施。	
<b>ICAO / IATA:</b> 国际民间航空组织/国际航空运输协会:	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 IB, PI 966 Section II and PI 967 Section II appropriate of IATA DGR 66 <sup>th</sup> (2025 Edition) for transportation. 货物可根据民用航空组织 (ICAO), TI 或国际航空运输协会 (IATA), DGR 66 <sup>th</sup> (2025 版) 包装说明 (PI) 965 Section IB, PI 966 Section II 和 PI 967 Section II 相关规定进行空运。
<b>IMDG CODE:</b> 国际海运危险货物规则:	The batteries are not restricted to IMDG Code 2022 Edition (Amdt 41-22) according to special provision 188. 根据特殊规定 188, 该电池不受 IMDG Code 2022 版 (Amdt 41-22) 限制。
<b>DOT:</b> 美国运输部:	Other requirements for the US Department of Transportation (DOT) Subchapter C, Hazardous Materials Regulations if shipped in compliance with 49 CFR 173.185. 美国运输部 (DOT) 有害物质规则 C 分章中的其他规定, 运输符合要求 49 CFR 173.185。
<b>ADR/ ADN:</b> 欧洲国际陆运危险货物协定/关于内陆水道国际运输危险货物的欧洲协定:	The batteries are not subject to the provisions of United Nations Economic Commission for Europe (UNECE) ADR/ADN if they meet the requirements of special provision 188 of Chapter 3.3. Applicable as from 1 January 2025. 自 2025 年 1 月 1 日起适用于联合国欧洲经济委员会 (UNECE) ADR / ADN, 如果电池符合第 3.3 章第 188 条的特殊要求, 则电池不受限制。
In addition, to be permitted in transport each lithium cell and battery types must have passed the applicable tests set out in Subsection 38.3 of the UN Manual of Tests and Criteria. 此外, 每个锂电芯和电池类型都必须通过联合国《关于危险货物运输的建议书 试验和标准手册》第 38.3 节规定的适用测试。	

**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 (23<sup>rd</sup> revised edition)联合国《关于危险货物运输的建议书 规章范本》（23<sup>rd</sup> 修订版）

Recommendations on the Transport of Dangerous Goods-Manual of Tests and Criteria

联合国《关于危险货物运输的建议书 试验和标准手册》

International Air Transport Association (IATA)

《国际航空运输协会》（IATA）

International Maritime Dangerous Goods (IMDG Code 2022 Edition Amdt 41-22)

《国际海运危险货物规则》（IMDG Code 2022 版 Amdt 41-22）

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 (GB 6944-2012)

《危险货物分类和品名编号》- GB 6944-2012

2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

2012《职业安全与健康标准》危险通信标准（29 CFR 1910.1200）

Toxic Substance Control Act (TSCA)

《有毒物质控制法》（TSCA）

Code of Federal Regulations

《联邦条例》

In accordance with all Federal, State and local laws

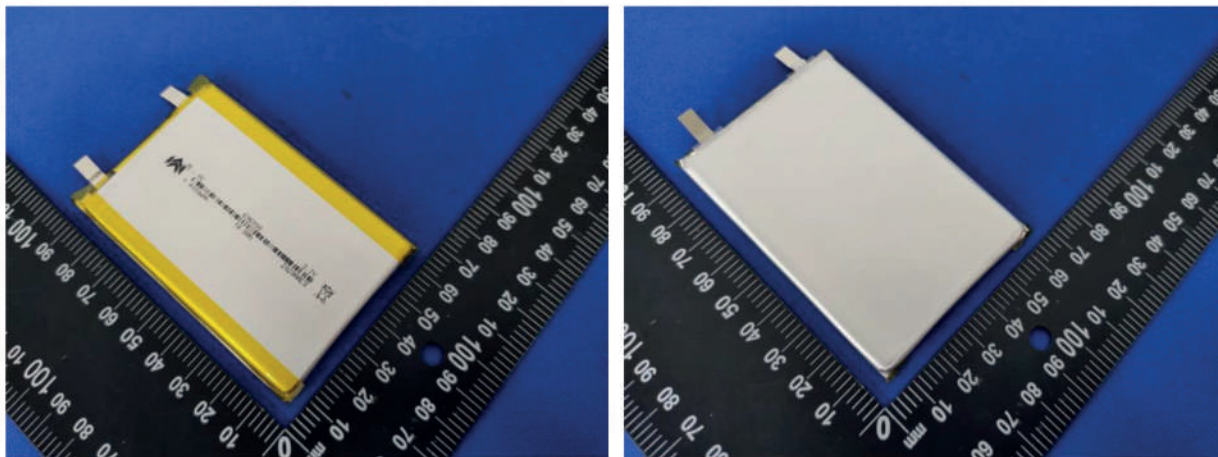
符合所有联邦、州和地方法律

## Section 16 - Additional Information

### 第十六部分 - 其他信息

MSDS creation date: 2025 Version: 1.0

Sample photo 样品照片:



To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

本份 MSDS 中的信息只是基于我们当前所拥有的相关材料的信息而编制的，只是为了描述本品的健康、安全与环境需求，以使各有关方面能更好地了解和信任本产品。这些信息只是提供给您，以供考虑、研究和确认。其中的一些危害预防措施描述并非唯一的。所以本份 MSDS 不能作为使用本品实现任何特定目的的保证。各有关使用者有责任预先完成本品的安全性及其他方面的测试，以评判其是否满足您的使用目的。

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

本文所包含的数据/信息已经过审核和批准，但本文档不包含出口管制信息。

\*\*\*\*\*End of Report 报告结束\*\*\*\*\*

# UN38.3 Test Report

## UN38.3 检测报告

<b>Applicant's Name</b> 委托方名称	CONFIDENTIAL
<b>Applicant's Address</b> 委托方地址	CONFIDENTIAL
<b>Name of Sample</b> 样品名称	CONFIDENTIAL
<b>Model</b> 型号	AST-PB010
<b>Testing Laboratory</b> 测试实验室	Shenzhen TCT Testing Technology Co., Ltd. 深圳市通测检测技术有限公司 2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China 广东省深圳市宝安区福海街道桥头社区稔山工业区振昌胶粘制品厂 2101、2201
<b>Report No.</b> 报告编号	TCT250822B046
<b>Date of Issue</b> 签发日期	2025. 08. 27
<b>Test Conclusion</b> 测试结论: The test results are qualified. 测试结果为合格。	

Tested by 主检人:

*Spring Fu 傅福花*

Spring Fu / Test Engineer 傅福花/测试工程师

Approved by 批准人:

*Tomsin 汤海森*

Tomsin / Laboratory Director 汤海森/实验室主任

Reviewer by 审核人:

*Mollie wu 吴玲玲*

Mollie wu / Project Engineer 吴玲玲/项目工程师

Seal of TCT 报告单位 (盖章):



## I、General product information:

### 一般产品信息

<b>Manufacturer's Name</b> 生产单位名称	CONFIDENTIAL				
<b>Manufacturer's Address</b> 生产单位地址	CONFIDENTIAL				
<b>Manufacturer's Contact Telephone</b> 生产单位联系电话	CONFIDENTIAL		<b>E-mail</b> 邮箱	CONFIDENTIAL	
<b>Web</b> 网址	CONFIDENTIAL		<b>Trade Mark</b> 商标	----	
<b>Name of Sample</b> 样品名称	Power bank 移动电源		<b>Model</b> 型号	AST-PB010	
<b>Nominal Voltage</b> 标称电压 (Built-in battery 内置电池)	Battery: 3.7V Output: 5V	<b>Rated Capacity</b> 额定容量	10000mAh (37Wh)	<b>Shape</b> 形状	Prismatic 棱柱形
<b>Size</b> 尺寸 (L×W×T)	(137.2×68.5×15.4)mm	<b>Sample Receiving Date</b> 样品接收日期	2025. 08. 11	<b>Testing Date</b> 测试日期	2025. 08. 13 — 2025. 08. 27

Inner Cell 内部电芯			
Model 型号	Rated Capacity 额定容量	Nominal Voltage 标称电压	Number of Cell 电芯数量
1260110	10000mAh	3.7V	1PC

The main features of the sample are shown as below 样品的主要特征如下所示:

ItemNo.:AST-PB010

Micro & Type-C input: 5V/2A

USB-A output: 5V/2A

Capacity: 10000mAh / 3.7V / 37Wh

## II、Test Standard 检测标准

UN "Manual of Tests and Criteria" ST/SG/AC.10/11/Rev.8/Subsection 38.3.

联合国《试验和标准手册》(第八修订版) 38.3 节。

## III、Test Item 检测项目

Test clause 测试条款	Tests performed 测试项目	Test conclusion 测试结论
38.3.4.1	Test T.1. Altitude simulation 高度模拟	Pass 合格
38.3.4.2	Test T.2. Thermal test 温度试验	Pass 合格
38.3.4.3	Test T.3. Vibration 振动	Pass 合格
38.3.4.4	Test T.4. Shock 冲击	Pass 合格
38.3.4.5	Test T.5. External short circuit 外部短路	Pass 合格
38.3.4.6	Test T.6. Crush 挤压	Pass 合格
38.3.4.7	Test T.7. Overcharge 过度充电	Pass 合格
38.3.4.8	Test T.8. Forced discharge 强制放电	Pass 合格

Possible test case verdicts: 可能发生的试验情况判定

- test case does not apply to the test object 试验情况不适用本试验产品:
- test object does meet the requirement 试验样品满足要求:
- test object does not meet the requirement 试验样品不满足要求:

N/A

P (Pass 合格)

F (Fail 不合格)

## IV、Test Method and Requirement 检测方法和要求

### T.1. Altitude simulation 高度模拟

#### Purpose 目的

This test simulates air transport under low-pressure conditions.

本试验模拟在低压条件下的空运。

#### Test procedure 测试程序

Test cells and batteries shall be stored at a pressure of 11.6 kPa or less for at least six hours at ambient temperature ( $20 \pm 5$  °C).

试验电池和电池组应在压力等于或低于 11.6 千帕和环境温度 ( $20 \pm 5$  °C) 下存放至少 6 小时。

#### Requirement 要求

Cells and batteries meet this requirement if there is no leakage, no venting, no disassembly, no rupture and no fire and if the open circuit voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states.

如果无渗漏、无排气、无解体、无破裂和无起火，并且每个试验电池或电池组在试验后的开路电压不小于其在进行这一试验前电压的 90%，电池和电池组即符合这一要求。有关电压的要求不适用于完全放电状态的试验电池和电池组。

### T.2. Thermal test 温度试验

#### Purpose 目的

This test assesses cell and battery seal integrity and internal electrical connections. The test is conducted using rapid and extreme temperature changes.

本试验评估电池和电池组的密封完善性和内部电连接。试验利用迅速和极端的温度变化进行。

#### Test procedure 测试程序

Test Cells and batteries are to be stored for at least six hours at a test temperature equal to  $72 \pm 2$  °C, followed by storage for at least six hours at a test temperature equal to  $-40 \pm 2$  °C. The maximum time interval between test temperature extremes is 30 minutes. This procedure is to be repeated until 10 total cycles are complete, after which all test cells and batteries are to be stored for 24 hours at ambient temperature ( $20 \pm 5$  °C). For large cells and batteries the duration of exposure to the test temperature extremes should be at least 12 hours.

试验电池和电池组应先在试验温度等于  $72 \pm 2$  °C 的条件下存放至少6小时，接着再在试验温度等于  $-40 \pm 2$  °C 的条件下存放至少6小时。两个极端试验温度之间的最大时间间隔为30分钟。此程序重复进行，共完成10次，接着将所有试验电池和电池组在环境温度 ( $20 \pm 5$  °C) 下存放24小时。对于大型电池和电池组，暴露于极端试验温度的时间至少应为12小时。

#### Requirement 要求

Cells and batteries meet this requirement if there is no leakage, no venting, no disassembly, no rupture and no fire and if the open circuit voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states.

如果无渗漏、无排气、无解体、无破裂和无起火，并且每个试验电池或电池组在试验后的开路电压不小于其在进行这一试验前电压的 90%，电池和电池组即符合这一要求。有关电压的要求不适用于完全放电状态的试验电池和电池组。

## T.3. Vibration 振动

### Purpose 目的

This test simulates vibration during transport.

本试验模拟运输过程中的振动。

### Test procedure 测试程序

Cells and batteries are firmly secured to the platform of the vibration machine without distorting the cells in such a manner as to faithfully transmit the vibration. The vibration shall be a sinusoidal waveform with a logarithmic sweep between 7 Hz and 200 Hz and back to 7 Hz traversed in 15 minutes. This cycle shall be repeated 12 times for a total of 3 hours for each of three mutually perpendicular mounting positions of the cell. One of the directions of vibration must be perpendicular to the terminal face.

The logarithmic frequency sweep shall differ for cells and batteries with a gross mass of not more than 12 kg (cells and small batteries), and for batteries with a gross mass of more than 12 kg (large batteries).

For cells and small batteries: from 7 Hz a peak acceleration of 1 gn is maintained until 18 Hz is reached. The amplitude is then maintained at 0.8 mm (1.6 mm total excursion) and the frequency increased until a peak acceleration of 8 gn occurs (approximately 50 Hz). A peak acceleration of 8 gn is then maintained until the frequency is increased to 200 Hz.

For large batteries: from 7 Hz to a peak acceleration of 1 gn is maintained until 18 Hz is reached. The amplitude is then maintained at 0.8 mm (1.6 mm total excursion) and the frequency increased until a peak acceleration of 2 gn occurs (approximately 25 Hz). A peak acceleration of 2 gn is then maintained until the frequency is increased to 200 Hz.

电池和电池组紧固于振动机平台，但紧固程度不能造成电池变形以致不能准确传递振动。振动应是正弦波形，对数频率扫描从 7 赫兹到 200 赫兹，再回到 7 赫兹，跨度为 15 分钟。这一振动过程须对三个互相垂直的电池安装方位的每一方向重复进行 12 次，总共为时 3 小时。其中一个振动方向必须与端面垂直。

作对数式频率扫描，对总质量不足 12 千克的电池和电池组(电池和小型电池组)，和对 12 千克及更大的电池组(大型电池组)应有所不同。

对电池和小型电池组：从 7 赫兹开始，保持 1 gn 的最大加速度，直到频率达到 18 赫兹。然后将振幅保持在 0.8 毫米(总偏移 1.6 毫米)，并增加频率直到最大加速度达到 8 gn(频率约为 50 赫兹)。将最大加速度保持在 8 gn 直到频率增加到 200 赫兹。

对大型电池组：从 7 赫兹开始，保持 1 gn 的最大加速度，直到频率达到 18 赫兹。然后将振幅保持在 0.8 毫米(总偏移 1.6 毫米)，并增加频率直到最大加速度达到 2 gn(频率约为 25 赫兹)。将最大加速度保持在 2 gn 直到频率增加到 200 赫兹。

### Requirement 要求

Cells and batteries meet this requirement if there is no leakage, no venting, no disassembly, no rupture and no fire during the test and after the test and if the open circuit voltage of each test cell or battery directly after testing in its third perpendicular mounting position is not less than 90% of its voltage immediately prior to this procedure. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states.

如果试验中和试验后无渗漏、无排气、无解体、无破裂和无起火，并且每个试验电池或电池组在第三个垂直安装方位上的试验后立即测得的开路电压不小于在进行这一试验前电压的 90%，电池和电池组即符合本项要求。有关电压的要求不适用于完全放电状态的试验电池和电池组。

#### T.4. Shock 冲击

**Purpose 目的**

This test assesses the robustness of cells and batteries against cumulative shocks.  
本试验评估电池和电池组对累积冲击效应的耐受程度。

**Test procedure 测试程序**

Test cells and batteries shall be secured to the testing machine by means of a rigid mount which will support all mounting surfaces of each test battery.

Each cell shall be subjected to a half-sine shock of peak acceleration of 150 gn and pulse duration of 6 milliseconds. Alternatively, large cells may be subjected to a half-sine shock of peak acceleration of 50 gn and pulse duration of 11 milliseconds.

Each battery shall be subjected to a half-sine shock of peak acceleration depending on the mass of the battery. The pulse duration shall be 6 milliseconds for small batteries and 11 milliseconds for large batteries. The formulas below are provided to calculate the appropriate minimum peak accelerations.

Each cell or battery shall be subjected to three shocks in the positive direction and to three shocks in the negative direction in each of three mutually perpendicular mounting positions of the cell or battery for a total of 18 shocks.

试验电池和电池组用坚固支架紧固在试验机上，支架支撑着每个试验电池组的所有安装面。

每个电池须经受最大加速度 150 gn 和脉冲持续时间 6 毫秒的半正弦波冲击。不过，大型电池须经受最大加速度 50 gn 和脉冲持续时间 11 毫秒的半正弦波冲击。

每个电池须经受的正弦波冲击的最大加速度取决于电池组的质量。小型电池组的脉冲持续时间 6 毫秒，大型电池组的脉冲持续时间 11 毫秒。以下公式用于计算合适的最低限度最大加速度。

每个电池或电池组须在三个互相垂直的电池或电池组安装方位的正极方向经受三次冲击，接着在负极方向经受三次冲击，总共经受 18 次冲击。

The formulas below are provided to calculate the appropriate minimum peak accelerations.  
以下公式用于计算合适的最低限度最大加速度。

Battery 电池组	Minimum peak acceleration 最低限度最大加速度	Pulse duration 脉冲持续时间
Small batteries 小型电池组	150 gn or result of formula Acceleration(g <sub>n</sub> ) = $\sqrt{\left(\frac{100850}{\text{mass}^*}\right)}$ whichever is smaller	6 ms
Large batteries 大型电池组	50 gn or result of formula Acceleration(g <sub>n</sub> ) = $\sqrt{\left(\frac{30000}{\text{mass}^*}\right)}$ whichever is smaller	11 ms

\* Mass is expressed in kilograms.

\*质量用千克表示

**Requirement 要求**

Cells and batteries meet this requirement if there is no leakage, no venting, no disassembly, no rupture and no fire and if the open circuit voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states.

如果无渗漏、无排气、无解体、无破裂和无起火，并且每个试验电池或电池组在试验后的开路电压不小于其在进行这一试验前电压的 90%，电池和电池组即符合这一要求。有关电压的要求不适用于完全放电状态的试验电池和电池组。

## T.5. External short circuit 外部短路

### Purpose 目的

This test simulates an external short circuit.  
本试验模拟外部短路。

### Test procedure 测试程序

The cell or battery to be tested shall be heated for a period of time necessary to reach a homogeneous stabilized temperature of  $57 \pm 4 \text{ }^{\circ}\text{C}$ , measured on the external case. This period of time depends on the size and design of the cell or battery and should be assessed and documented. If this assessment is not feasible, the exposure time shall be at least 6 hours for small cells and small batteries, and 12 hours for large cells and large batteries. Then the cell or battery at  $57 \pm 4 \text{ }^{\circ}\text{C}$  shall be subjected to one short circuit condition with a total external resistance of less than 0.1 ohm.

This short circuit condition is continued for at least one hour after the cell or battery external case temperature has returned to  $57 \pm 4 \text{ }^{\circ}\text{C}$ , or in the case of the large batteries, has decreased by half of the maximum temperature increase observed during the test and remains below that value.

The short circuit and cooling down phases shall be conducted at least at ambient temperature.

对于待试电池或电池组，应加温一段必要的时间，使从外壳测量的温度达到均匀的稳定温度  $57 \pm 4 \text{ }^{\circ}\text{C}$ 。这段时间的长短取决于电池或电池组的大小和设计，对于这个持续时间应加以评估和记录。如无法进行这种评估，则小型电池和小型电池组的暴露时间应至少6小时，大型电池和大型电池组的暴露时间应至少12小时。然后，电池或电池组应在  $57 \pm 4 \text{ }^{\circ}\text{C}$  条件下经受总电阻小于0.1欧姆的短路条件。这一短路条件应在电池或电池组外壳温度回到  $57 \pm 4 \text{ }^{\circ}\text{C}$  后继续至少1小时，或在大型电池组的情况下外壳温度降幅达试验中所观察到的最高温升幅的二分之一并保持低于该数值。

短路和降温阶段的温度应至少相当于环境温度。

### Requirement 要求

Cells and batteries meet this requirement if their external temperature does not exceed  $170 \text{ }^{\circ}\text{C}$  and there is no disassembly, no rupture and no fire during the test and within six hours after the test.

如果外壳温度不超过  $170 \text{ }^{\circ}\text{C}$ ，并且在试验过程中及试验后 6 小时内无解体、无破裂，无起火，电池和电池组即符合本项要求。

## T.6. Impact / Crush 撞击/挤压

### Purpose 目的

These tests simulate mechanical abuse from an impact or crush that may result in an internal short circuit.

本节的试验模拟撞击或挤压等可能造成内部短路的机械性破坏。

### Test procedure – Impact (applicable to cylindrical cells not less than 18.0 mm in diameter)

#### 测试程序 – 撞击（适用于直径不小于 18.0 毫米的圆柱形电池）

The test sample cell or component cell is to be placed on a flat smooth surface. A  $15.8 \text{ mm} \pm 0.1 \text{ mm}$  diameter, at least 6 cm long, or the longest dimension of the cell, whichever is greater, Type 316 stainless steel bar is to be placed across the centre of the sample. A  $9.1 \text{ kg} \pm 0.1 \text{ kg}$  mass is to be dropped from a height of  $61 \pm 2.5 \text{ cm}$  at the intersection of the bar and sample in a controlled manner using a near frictionless, vertical sliding track or channel with minimal drag on the falling mass. The vertical track or Channel used to guide the falling mass shall be oriented 90 degrees from the horizontal supporting surface.

The test sample is to be impacted with its longitudinal axis parallel to the flat surface and perpendicular to the longitudinal axis of the  $15.8 \text{ mm} \pm 0.1 \text{ mm}$  diameter curved surface lying across the centre of the test sample. Each sample is to be subjected to only a single impact.

试样电池或元件电池放在平坦光滑的表面上。一根 316 型不锈钢棒横放在试样中心，钢棒直径  $15.8 \text{ mm} \pm 0.1 \text{ mm}$ ，长度至少 6 厘米，或电池最长端的尺寸，取二者之长者。将一块  $9.1 \text{ kg} \pm 0.1 \text{ kg}$  的重锤从  $61 \pm 2.5 \text{ cm}$  高处跌落到钢棒和试样交叉处，使用一个几乎没有摩擦的、对落体重锤阻力最小的垂直轨道或管道加以控制。垂直轨道或管道用于引导落锤沿与水平支撑表面呈  $90 \text{ }^{\circ}$  度落下。

接受撞击的试样，纵轴应与平坦表面平行并与横放在试样中心的直径  $15.8 \pm 0.1 \text{ mm}$  弯曲表面的纵轴垂直。每一试样只经受一次撞击。

**Test procedure – Crush** (applicable to prismatic, pouch, coin/button cells and cylindrical cells less than 18.0 mm in diameter)

**测试程序 – 挤压** (适用于棱柱形、袋状、硬币/纽扣电池和直径小于 18.0 毫米的圆柱形电池)

A cell or component cell is to be crushed between two flat surfaces. The crushing is to be gradual with a speed of approximately 1.5 cm/s at the first point of contact. The crushing is to be continued until the first of the three options below is reached.

- (a) The applied force reaches 13 kN  $\pm$  0.78 kN;
- (b) The voltage of the cell drops by at least 100 mV; or
- (c) The cell is deformed by 50% or more of its original thickness.

Once the maximum pressure has been obtained, the voltage drops by 100 mV or more, or the cell is deformed by at least 50% of its original thickness, the pressure shall be released.

A prismatic or pouch cell shall be crushed by applying the force to the widest side. A button/coin cell shall be crushed by applying the force on its flat surfaces. For cylindrical cells, the crush force shall be applied perpendicular to the longitudinal axis.

Each test cell or component cell is to be subjected to one crush only. The test sample shall be observed for a further 6 h. The test shall be conducted using test cells or component cells that have not previously been subjected to other tests.

将电池或元件电池放在两个平面之间挤压，挤压力度逐渐加大，在第一个接触点上的速度大约为 1.5 厘米/秒。挤压持续进行，直到出现以下三种情况之一：

- (a) 施加的力量达到 13 千牛顿  $\pm$  0.78 千牛顿；
- (b) 电池的电压下降至少 100 毫伏；或
- (c) 电池形变达原始厚度的 50%或以上。

一旦达到最大压力、电压下降 100 毫伏或更多，或电池变形至少达原厚度的 50%，即可解除压力。

棱柱形或袋状电池应从最宽的一面施压。纽扣/硬币形电池应从其平坦表面施压。圆柱形电池应从与纵轴垂直的方向施压。

每个试样电池或元件电池只做一次挤压试验。试样应继续观察 6 小时。试验应使用之前未做过其他试验的电池或元件电池进行。

### **Requirement 要求**

Cells and component cells meet this requirement if their external temperature does not exceed 170 °C and there is no disassembly and no fire during the test and within six hours after this test.

如果外壳温度不超过 170°C，并且在试验过程中及试验后 6 小时内无解体、无破裂，无起火，电池和电池组即符合本项要求。

## **T.7. Overcharge 过度充电**

### **Purpose 目的**

This test evaluates the ability of a rechargeable battery or a single cell rechargeable battery to withstand an overcharge condition.

本试验评估可再充电电池组或可再充电单一电池电池组承受过度充电状况的能力。

### **Test procedure 测试程序**

The charge current shall be twice the manufacturer's recommended maximum continuous charge current. The minimum voltage of the test shall be as follows:

- (a) When the manufacturer's recommended charge voltage is not more than 18 V, the minimum voltage of the test shall be the lesser of two times the maximum charge voltage of the battery or 22 V.
- (b) When the manufacturer's recommended charge voltage is more than 18 V, the minimum voltage of the test shall be 1.2 times the maximum charge voltage.

Tests are to be conducted at ambient temperature. The duration of the test shall be 24 hours.

充电电流必须是制造商建议的最大持续充电电流的两倍。试验的最小电压如下：

(a) 制造商建议的充电电压不大于 18 伏时，试验的最小电压应是电池组最大充电电压的两倍或 22 伏两者中的较小者。

(b) 制造商建议的充电电压大于 18 伏时，试验的最小电压应是最大充电电压的 1.2 倍。

试验应在环境温度下进行，进行试验的时间应为 24 小时。

#### Requirement 要求

Rechargeable batteries meet this requirement if there is no disassembly and no fire during the test and within seven days after the test.

充电电池组在试验过程中和试验后 7 天内无解体、无起火，即符合本项要求。

## T.8. Forced discharge 强制放电

#### Purpose 目的

This test evaluates the ability of a primary or a rechargeable cell to withstand a forced discharge condition.

本试验评估原电池或充电电池承受强制放电状况的能力。

#### Test procedure 测试程序

Each cell shall be forced discharged at ambient temperature by connecting it in series with a 12 V D.C. power supply at an initial current equal to the maximum discharge current specified by the manufacturer.

The specified discharge current is to be obtained by connecting a resistive load of the appropriate size and rating in series with the test cell. Each cell shall be forced discharged for a time interval (in hours) equal to its rated capacity divided by the initial test current (in ampere).

每个电池应在环境温度下与 12 伏直流电源串联在起始电流等于制造商给定的最大放电电流的条件下强制放电。

将适当大小和额定值的电阻负荷与试验电池串联，计算得出给定的放电电流。对每个电池进行强制放电，放电时间(小时)应等于其额定容量除以初始试验电流(安培)。

#### Requirement 要求

Primary or rechargeable cells meet this requirement if there is no disassembly and no fire during the test and within seven days after the test.

原电池或充电电池如在试验过程中和试验后 7 天内无解体，无起火，即符合本项要求。

## V、General Remarks 一般附注

1. Tests T.1 to T.5 shall be conducted in sequence on the same cell or battery. Tests T.6 and T.8 shall be conducted using not otherwise tested cells. Test T.7 may be conducted using undamaged batteries previously used in Tests T.1 to T.5 for purposes of testing on cycled batteries.

测试T.1-T.5须按顺序依次在同一组电芯或电池上进行。T.6和T.8须用全新的电芯进行测试。T.7 可以用之前T.1-T.5测试中完整无损的电池进行测试。

2. In order to quantify the mass loss, the following procedure is provided:

质量损失的量化值，可用以下公式计算：

$$\text{Mass loss 质量损失 (\%)} = (M_1 - M_2)/M_1 \times 100$$

Where  $M_1$  is the mass before the test and  $M_2$  is the mass after the test. When mass loss does not exceed the values in Table 38.3.1, it shall be considered as "no mass loss".

式中： $M_1$  是试验前的质量， $M_2$  是试验后的质量。如果质量损失不超过表 38.3.1 所列的数值，应视为“无质量损失”。

Table 38.3.1: Mass loss limit

表 38.3.1: 质量损失限值

Mass M of cell or battery 电池或电池组质量 M	Mass loss limit 质量损失限值
$M < 1 \text{ g}$	0.5%
$1 \text{ g} \leq M \leq 75 \text{ g}$	0.2%
$M > 75 \text{ g}$	0.1%

3. Unless otherwise stated in this document, the test procedure was performed at ambient temperatures of  $20 \pm 5^\circ\text{C}$ .

除非本文档另有说明，否则测试过程在  $20\text{C} \pm 5\text{C}$  的环境温度下进行。

## V、Test Data 测试数据

### T.1. Altitude simulation 高度模拟

Test sample status 测试样品状态	No. 编号	Pre-test 试验前		After test 试验后		Mass loss 质量损失 (%)	Change ratio 电压比 (%)	Status 结果
		Mass 质量(g)	Voltage 电压(V)	Mass 质量(g)	Voltage 电压(V)			
first cycle, fully charged state 第 1 个充放电周期, 完全充电状态	B01	221.668	5.09	221.647	5.09	0.01	100.0	P
	B02	220.336	5.08	220.336	5.08	0.00	100.0	P
	B03	221.031	5.07	221.031	5.07	0.00	100.0	P
	B04	220.178	5.08	220.176	5.07	0.00	99.8	P
	B05	220.349	5.09	220.349	5.09	0.00	100.0	P
25th cycle, fully charged state 第 25 个充放电周期, 完全充电状态	B06	221.180	5.08	221.180	5.08	0.00	100.0	P
	B07	220.708	5.08	220.685	5.08	0.01	100.0	P
	B08	220.015	5.07	220.015	5.07	0.00	100.0	P
	B09	220.619	5.09	220.618	5.08	0.00	99.8	P
	B10	221.914	5.07	221.914	5.07	0.00	100.0	P

Supplementary information 补充信息:

After the test, there is no leakage, no venting, no disassembly, no rupture and no fire. And Change ratio is not less than 90 %. 测试后, 样品无渗漏、无排气、无解体、无破裂和无起火。电压比不小于 90 %。

### T.2. Thermal test 温度试验

Test sample status 测试样品状态	No. 编号	Pre-test 试验前		After test 试验后		Mass loss 质量损失 (%)	Change ratio 电压比 (%)	Status 结果
		Mass 质量(g)	Voltage 电压(V)	Mass 质量(g)	Voltage 电压(V)			
first cycle, fully charged state 第 1 个充放电周期, 完全充电状态	B01	221.647	5.09	221.606	5.05	0.02	99.2	P
	B02	220.336	5.08	220.275	5.03	0.03	99.0	P
	B03	221.031	5.07	221.018	5.04	0.01	99.4	P
	B04	220.176	5.07	220.142	5.03	0.02	99.2	P
	B05	220.349	5.09	220.286	5.04	0.03	99.0	P
25th cycle, fully charged state 第 25 个充放电周期, 完全充电状态	B06	221.180	5.08	221.165	5.05	0.01	99.4	P
	B07	220.685	5.08	220.645	5.04	0.02	99.2	P
	B08	220.015	5.07	220.002	5.04	0.01	99.4	P
	B09	220.618	5.08	220.557	5.03	0.03	99.0	P
	B10	221.914	5.07	221.865	5.03	0.02	99.2	P

Supplementary information 补充信息:

After the test, there is no leakage, no venting, no disassembly, no rupture and no fire. And Change ratio is not less than 90 %. 测试后, 样品无渗漏、无排气、无解体、无破裂和无起火。电压比不小于 90 %。

### T.3. Vibration 振动

Test sample status 测试样品状态	No. 编号	Pre-test 试验前		After test 试验后		Mass loss 质量损失 (%)	Change ratio 电压比 (%)	Status 结果
		Mass 质量(g)	Voltage 电压(V)	Mass 质量(g)	Voltage 电压(V)			
first cycle, fully charged state 第 1 个充放电周期, 完全充电状态	B01	221.606	5.05	221.605	5.04	0.00	99.8	P
	B02	220.275	5.03	220.275	5.03	0.00	100.0	P
	B03	221.018	5.04	221.018	5.04	0.00	100.0	P
	B04	220.142	5.03	220.121	5.03	0.01	100.0	P
	B05	220.286	5.04	220.286	5.04	0.00	100.0	P
25th cycle, fully charged state 第 25 个充放电周期, 完全充电状态	B06	221.165	5.05	221.165	5.05	0.00	100.0	P
	B07	220.645	5.04	220.643	5.03	0.00	99.8	P
	B08	220.002	5.04	220.002	5.04	0.00	100.0	P
	B09	220.557	5.03	220.557	5.03	0.00	100.0	P
	B10	221.865	5.03	221.843	5.03	0.01	100.0	P

Supplementary information 补充信息:

After the test, there is no leakage, no venting, no disassembly, no rupture and no fire. And Change ratio is not less than 90 %. 测试后, 样品无渗漏、无排气、无解体、无破裂和无起火。电压比不小于 90 %。

### T.4. Shock 冲击

Test sample status 测试样品状态	No. 编号	Pre-test 试验前		After test 试验后		Mass loss 质量损失 (%)	Change ratio 电压比 (%)	Status 结果
		Mass 质量(g)	Voltage 电压(V)	Mass 质量(g)	Voltage 电压(V)			
first cycle, fully charged state 第 1 个充放电周期, 完全充电状态	B01	221.605	5.04	221.605	5.04	0.00	100.0	P
	B02	220.275	5.03	220.275	5.03	0.00	100.0	P
	B03	221.018	5.04	221.005	5.04	0.01	100.0	P
	B04	220.121	5.03	220.121	5.03	0.00	100.0	P
	B05	220.286	5.04	220.285	5.03	0.00	99.8	P
25th cycle, fully charged state 第 25 个充放电周期, 完全充电状态	B06	221.165	5.05	221.165	5.05	0.00	100.0	P
	B07	220.643	5.03	220.643	5.03	0.00	100.0	P
	B08	220.002	5.04	219.986	5.04	0.01	100.0	P
	B09	220.557	5.03	220.557	5.03	0.00	100.0	P
	B10	221.843	5.03	221.842	5.02	0.00	99.8	P

Supplementary information 补充信息:

After the test, there is no leakage, no venting, no disassembly, no rupture and no fire. And Change ratio is not less than 90 %. 测试后, 样品无渗漏、无排气、无解体、无破裂和无起火。电压比不小于 90 %。

## T.5. External short circuit 外部短路

Test sample status 测试样品状态	No. 编号	Maximum external temperature (°C) 表面最高温度(°C)	Status 结果
first cycle, fully charged state 第 1 个充放电周期, 完全充电状态	B01	57.4	P
	B02	57.7	P
	B03	57.8	P
	B04	57.6	P
	B05	57.9	P
25th cycle, fully charged state 第 25 个充放电周期, 完全充电状态	B06	57.8	P
	B07	57.3	P
	B08	57.5	P
	B09	57.7	P
	B10	57.3	P

Supplementary information 补充信息:

Test sample external temperature does not exceed 170 °C and there is no disassembly, no rupture and no fire during the test and within six hours after the test.

测试样品表面温度不超过 170 °C，测试中与测试后 6 小时内无解体、无破裂、无起火。

## T.6. Crush 挤压

Test sample status 测试样品状态	No. 编号	Maximum external temperature (°C) 表面最高温度(°C)	Status 结果
first cycle, 50% charged state 第 1 个充放电周期, 50%充电状态	C01	23.5	P
	C02	23.8	P
	C03	23.7	P
	C04	23.2	P
	C05	24.0	P
25th cycle, 50% charged state 第 25 个充放电周期, 50%充电状态	C06	23.6	P
	C07	23.4	P
	C08	23.8	P
	C09	23.3	P
	C10	23.5	P

Supplementary information 补充信息:

Test sample external temperature does not exceed 170 °C and there is no disassembly, no rupture and no fire during the test and within six hours after the test.

测试样品表面温度不超过 170 °C，测试中与测试后 6 小时内无解体、无破裂、无起火。

## T.7. Overcharge 过度充电

Test sample status 测试样品状态	No.编号	Status 结果
first cycle, fully charged state 第 1 个充放电周期, 完全充电状态	B11	P
	B12	P
	B13	P
	B14	P
25th cycle, fully charged state 第 25 个充放电周期, 完全充电状态	B15	P
	B16	P
	B17	P
	B18	P
Supplementary information 补充信息: There is no disassembly and no fire during the test and within seven days after the test. 样品在测试中和测试后 7 天内无解体、无起火。		

## T.8. Forced discharge 强制放电

Test sample status 测试样品状态	No.编号	Status 结果
first cycle, fully discharged state 第 1 个充放电周期, 完全放电状态	C11	P
	C12	P
	C13	P
	C14	P
	C15	P
	C16	P
	C17	P
	C18	P
	C19	P
	C20	P
25th cycle, fully discharged state 第 25 个充放电周期, 完全放电状态	C21	P
	C22	P
	C23	P
	C24	P
	C25	P
	C26	P
	C27	P
	C28	P
	C29	P
	C30	P
Supplementary information 补充信息: There is no disassembly and no fire during the test and within seven days after the test. 样品在测试中和测试后 7 天内无解体、无起火。		

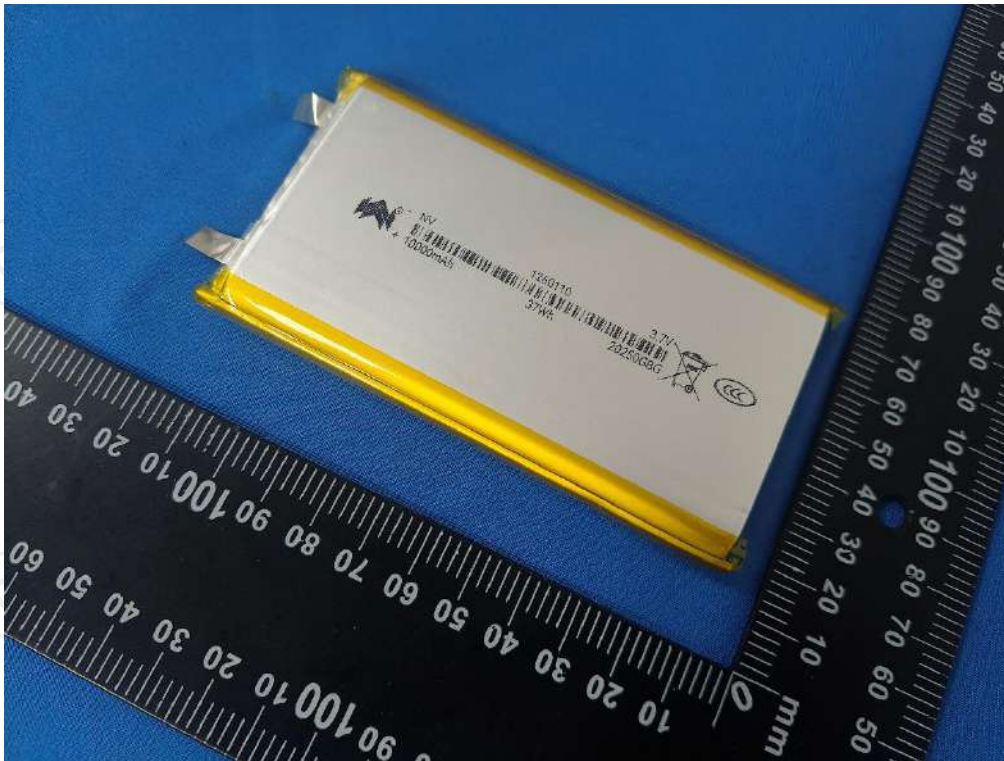
VI、Picture of the sample 样品图片



Picture 1. Front view of battery  
图片 1. 电池组前视图



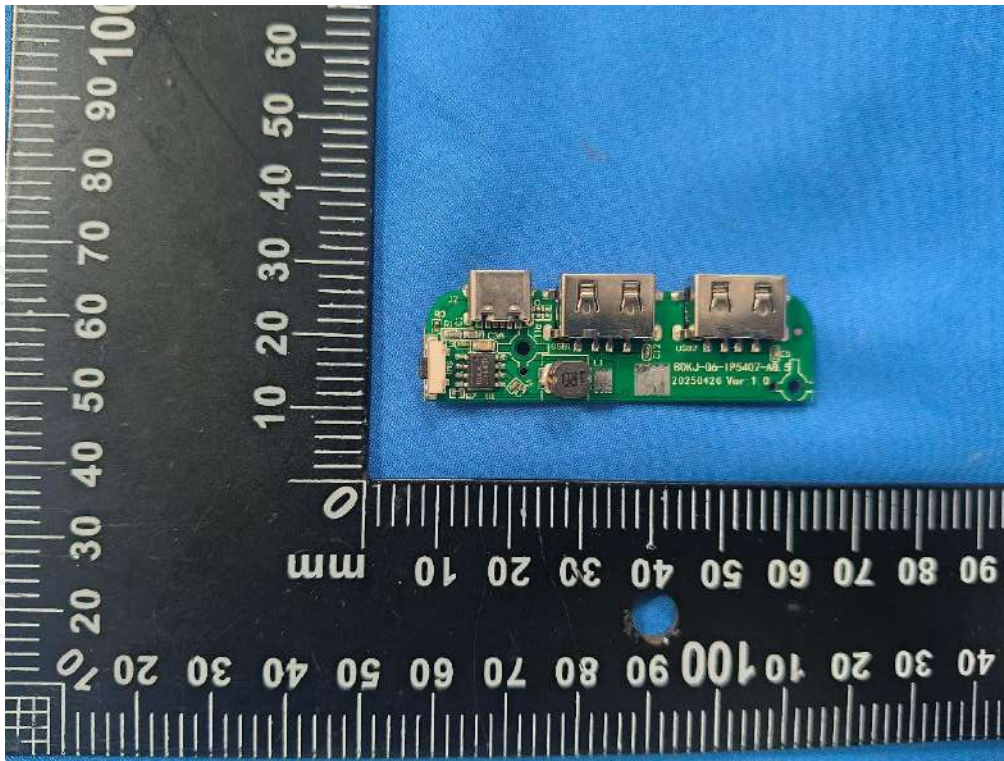
Picture 2. Back view of battery  
图片 2. 电池组后视图



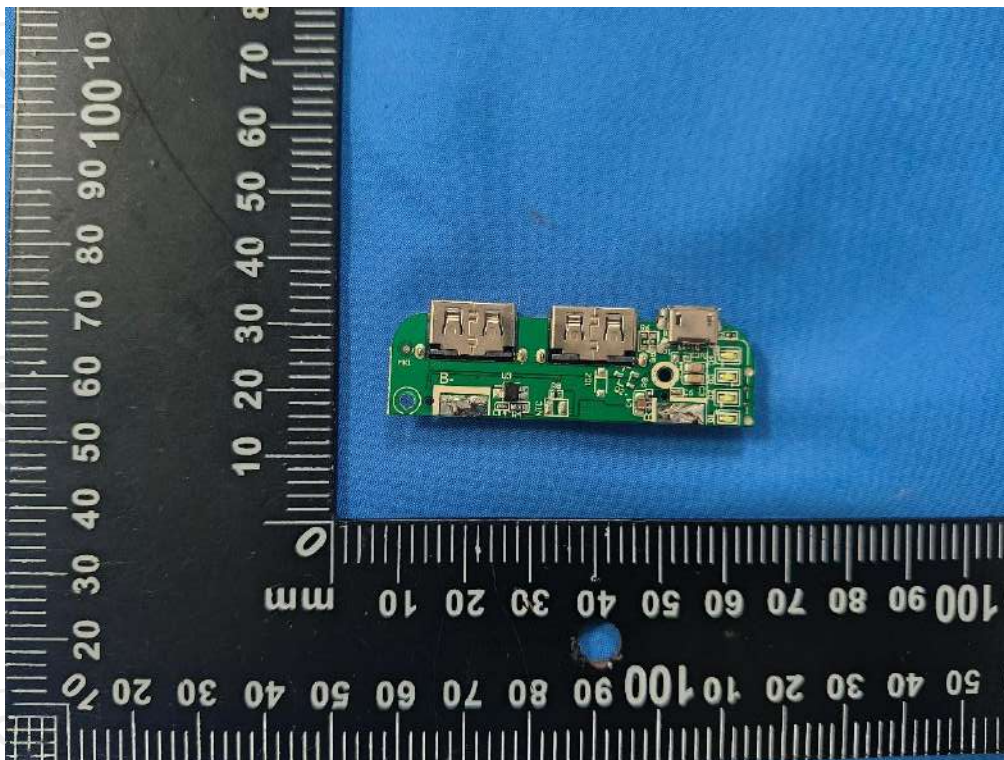
Picture 3. Front view of cell  
图片 3. 电芯前视图



Picture 4. Back view of cell  
图片 4. 电芯后视图



Picture 5. Front view of protection board  
图片 5. 保护板前视图



Picture 6. Back view of protection board  
图片 6. 保护板后视图



Picture 7. Label view

图片 7. 标签视图

\*\*\*\*\*End of Report 报告结束\*\*\*\*\*

## Important Notice

### 注意事项

1. The test report is invalid without the official stamp of TCT.  
本报告书无 TCT 盖章无效。
2. Nobody is allowed to photocopy or partly photocopy this test report without written permission of TCT.  
未经 TCT 书面同意，不得复制或部分地复制本报告书。
3. The test report is invalid without the signatures of Ratifier, Reviewer and Testing engineer.  
本报告书无批准人、审核人、及主检人签名无效。
4. The report is invalid when anything of following happens – illegal transfer, reproduce, embezzlement, imposture, modification or tampering in any media form.  
私自转让、复制、盗用、冒用、涂改、或以任何媒体形式篡改的报告书无效。
5. Objections to the test report must be submitted to TCT within 15 days.  
对报告书若有异议，应于收到报告之日起 15 天内向本公司提出。
6. The test report is valid for the tested samples only.  
本报告仅对本次测试样品有效。
7. The Chinese contents in this report are only for reference.  
本报告中的中文内容仅供参考。

## Classification and Identification Report of Dangerous Characteristics

### 危险特性分类鉴别报告

**Name of Goods:** Power bank AST-PB010 10000mAh 37Wh  
**货物名称:** 移动电源 AST-PB010 10000mAh 37Wh

**Applicant's Name:** CONFIDENTIAL  
**委托方名称:** CONFIDENTIAL

**Report No.:** TCT250822F0461  
**报告编号:** TCT250822F0461

**Inspection date** 2025.08.22-2025.08.27  
**检验日期** 2025.08.22-2025.08.27

**Date of Issue:** 2025.08.27  
**签发日期:** 2025.08.27

**Date of Expire:** 2026.08.26  
**有效期至:** 2026.08.26

**Shenzhen TCT Testing Technology Co., Ltd.**  
**深圳市通测检测技术有限公司**


**Classification and Identification Report of Dangerous Characteristics**

**危险特性分类鉴别报告**

<b>Sample name</b> 样品信息	Power bank 移动电源	<b>Sample model</b> 样品型号	AST-PB010
<b>Sample specification parameters</b> 样品规格参数	3.7V 10000mAh 37Wh		
<b>Sample appearance</b> 样品外观	Approximate Black Cuboid 黑色近长方体		
<b>Placement</b> 放置方式	Single 单独包装		
<b>Sample number/ weight</b> 样品数量/重量	40PCS / 8.877kg		
<b>Applicant's Name</b> 委托方名称	CONFIDENTIAL		
<b>Manufacturer's Name</b> 制造商名称	CONFIDENTIAL		
<b>Factory Name</b> 工厂名称	CONFIDENTIAL		
<b>Criteria</b> 鉴别依据	United Nations "Recommendations on the Transport of Dangerous Goods-Model Regulations" (Rev.23) 联合国《关于危险货物运输的建议书-规章范本》(23 修订版) Global Harmonized System of Classification and Labelling of Chemicals Tenth revised edition (ST/SG/AC.10/30/Rev.10) 《全球化学品统一分类和标签制度》(第十修订版) Catalog of Hazardous Chemicals (2015) 《危险化学品目录》(2015 版)		

**Classification and Identification Report of Dangerous Characteristics**

**危险特性分类鉴别报告**

<b>Conclusions</b> 鉴别结论	Dangerous Goods 危险品	
	PSN 运输专用名称:	Lithium ion batteries 锂离子电池
	UN No. UN 编号:	UN 3480
	Class or Div 危险性类别:	9
	Package group 包装类别:	Packaging must meet Packing Group II performance standard. 包装必须达到 II 级包装的性 能标准。
	Packing instructions 包装说明	Sea transport, Road transport, P903 海运、道路运输 P903
	GHS 分类 GHS classification	/
	Whether they are listed in "Catalog of Hazardous Chemicals (2015)"/ 是否属于《危险化学品目录》(2015 版)列明的 化学品:	No 否
	Dose it comply with the "Definition and Determination Principles of Hazardous Chemicals" in "Catalog of Hazardous Chemicals (2015)"/ 是否符合《危险化学品目录》(2015 版)中关于 “危险化学品的定义和确定原则”	No 否
运输标签/标记	Sea transport, Road transport, Shipping Label/海运、道路运输标签:  	

**Tested by**  
主检人: 陈松

**Inspected by**  
审核人: 黄娇玲

**Approved by**  
批准人: 杨晓森



Items of Inspection 检验项目名称	Inspection Results 检验结果
Watt-hour rating of the battery is 37Wh. 该电池额定瓦特小时数为 37Wh。	> 100Wh
Each Lithium battery is of a type proved to meet the requirements of each test in the United Nations Manual of Tests and Criteria, Part III, sub-section 38.3. 锂电池已通过联合国《试验和标准手册》第三部分 38.3 测试。	Conform/符合
Each package is capable of withstanding a 1.2m drop test. 锂电池包装件通过 1.2 米跌落试验。	Not applicable/不适用
Batteries be manufactured under a quality management programme. 电池按照规定的质量管理体系进行制造。	Conform/符合
Lithium batteries listed in this report are not damaged or defective lithium batteries. 本报告所述锂电池不属于有缺陷或已损坏的锂电池。	Conform/符合
The lithium batteries don't belong to batteries returned to the manufacturer for safety reasons, are not waste lithium batteries and not lithium batteries being shipped for recycling or disposal. 该锂电池不属于召回电池,不属于废弃和回收电池。	Conform/符合
Lithium batteries are equipped with an effective means of preventing external short circuits, and equipment shall take measures to avoid unintentional start. 本报告所述锂电池具有适当的防外部短路措施, 设备必须采取措施防止意外启动。	Conform/符合
Lithium cells and batteries are packed in inner packages that completely enclose the cell or battery and placed in a strong outer packaging. 锂电池完全封装在内包装内, 位于坚固的外包装中。	Conform/符合
Each cell and battery incorporates a safety venting device, and equipped with effective means as necessary to prevent dangerous reverse current flow (e.g. diodes, fuses, etc). 每个电池和电池芯配备安全排气装置, 并采用有效方法装配, 以防止逆向电流 (例如: 二极管、保险丝等)。	Conform/符合
Each package shall be marked with the appropriate lithium battery mark. 每个包装件应贴锂电池标记	Not applicable/不适用
Comment 备注	Lithium batteries listed in this report are of the types proven to meet the requirements of each applicable test in the UN "Manual of Tests and Criteria" ST/SG/AC.10/11/Rev.8/Subsection 38.3. 本鉴别书所述锂电池已通过联合国《试验和标准手册》(第八修订版) 38.3 节相应测试要求。
	UN 38.3 report No. UN 38.3 报告编号

## Appendix Photos 附录图片:

Sample 样品:



Package 包装:



Label 标签:



## STATEMENT

### 声明

1. The certificate is issued by The TCT according to Recommendations on the Transport of Dangerous Goods-Model Regulations and the information of the goods and its shipment provided by the client (shipper or its agent).

本鉴别报告依据《关于危险货物运输的建议书-规章范本》、委托人（托运人或代理人）提供的物品及其运输信息出具。

2. The certificate is only responsible for the sample provided by the client.

本鉴别报告的鉴别结论仅对样品负责。

3. The client should provide samples and relevant data, at the same time, and they should guarantee that the name they declared is the same as the samples they provided and the goods to be transported.

客户必须如实提供样品及资料，并保证申报品名和样品与运输货物相同。

4. The certificate will be effective only after it is signed by the inspector, checker, and approver, and stamped.

本鉴别报告经检验人、审核人、批准人签字并加盖检验印章后生效。

5. The certificate must not be copied wholly or partly. The certificate is invalid if anything of the following happens, such as illegal transfer, reproduction, embezzlement, imposture, modification or tampering in any media form.

本鉴别报告不得全部或部分复制，复制无效。本鉴别报告私自转让、复制、盗用、冒用、涂改或以任何媒体形式篡改的均属无效。

6. The certificate takes no account of the State and Operator Variations.

本鉴别报告不考虑国家及经营人差异。

7. This certificate is only valid within the current year.

本鉴别报告仅在本年度内有效。

8. Objections to the certificate must be submitted to TCT within 15 days.

对鉴别报告若有异议，应于收到报告之日起十五日内向本机构提出。

Testing Laboratory: Shenzhen TCT Testing Technology Co., Ltd.

测试机构：深圳市通测检测技术有限公司

Address: 2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

地址：广东省深圳市宝安区福海街道桥头社区稔山工业区振昌胶粘制品厂 2101、2201

Search System 查询系统: <http://www.tct-lab.com>

Phone (电话): 400-6611-140

E-mail: [service@tct-lab.com](mailto:service@tct-lab.com)

**Identification and Classification Report for Transport of Goods**  
**运输危险性鉴别报告书**

**By Sea**  
**海运**

**Dangerous Goods**

(危险物品)

**Name of Goods:** Power bank AST-PB010 10000mAh 37Wh

货物名称: 移动电源 AST-PB010 10000mAh 37Wh

**Applicant's Name:** CONFIDENTIAL

委托方名称:

**Report No.:** TCT250822H0461

报告编号:

**Date of Issue:** 2025.08.27

签发日期:

**Date of Expire:** 2025.12.31

有效期至:

**Shenzhen TCT Testing Technology Co., Ltd.**  
**深圳市通测检测技术有限公司**

## Identification and Classification Report for Transport of Goods

### 运输危险性鉴别报告书

<b>Identification Purpose</b> 鉴别目的	Dangerous Goods or not restricted 是否属于运输危险品	<b>Identification Date</b> 鉴别日期	2025.08.25~2025.08.27
<b>Identification Criteria</b> 鉴定依据	International Maritime Dangerous Goods (IMDG Code 2024 Edition Amdt 42-24) 《国际海运危险货物规则》(IMDG Code 2024 版 Amdt 42-24)		
<b>Name of Goods</b> 货物名称	Power bank AST-PB010 10000mAh 37Wh 移动电源 AST-PB010 10000mAh 37Wh		
<b>Applicant's Name</b> 委托方名称	<b>CONFIDENTIAL</b>		
<b>Manufacturer's Name</b> 制造商名称	<b>CONFIDENTIAL</b>		
<b>Battery information</b> 电池信息	Type of Battery 电池类型	Single Cell Li-ion Battery 单电芯锂离子电池	
	Model 型号	AST-PB010	
<b>Package information</b> 包装信息	Packaging dimensions 包装尺寸(L×W×T)	(36.0×17.5×32.5)cm	
	Battery number per packaging 每包装件电池数量	40PCS	
	Battery number per net weight 每包装件电池净重	8.877kg	
	Gross weight per package 每包装件毛重	10.5kg	
<b>Classification Conclusion</b> 鉴别结论	(Dangerous Goods) 危险物品		
	UN No. (UN 编号):	UN3480	
	PSN(运输专用名称):	Lithium ion batteries	
	Class or Div. (危险性类别):	9	
	PG(包装等级):	/	
<b>Comment</b> 备注	Packagings must meet Packing Group II performance standard. 包装必须达到 II 级包装的性能标准。		

**Appraiser by**  
主检人:

傅福花

**Checker by**  
审核人:

吴玲玲

**Approved by**  
批准人:

汤瑞森

**Stamp**  
报告单位(盖章)



## Identification and Classification Report for Transport of Goods 运输危险性鉴别报告书

Items of Inspection 检验项目名称	Inspection Results 检验结果
Watt-hour rating of the battery is 37 Wh. 该电池额定瓦特小时数为 37 Wh。	>20Wh
Each Lithium battery is of a type proved to meet the requirements of each test in the United Nations Manual of Tests and Criteria, Part III, sub-section 38.3. 锂电池已通过联合国《试验和标准手册》第III部分 38.3 测试。	Conform/符合
Each package is capable of withstanding a 1.2m drop test. 锂电池包装件通过 1.2 米跌落试验。	Not applicable/不适用
Batteries be manufactured under a quality management programme. 电池按照规定的质量管理体系进行制造。	Conform/符合
Lithium batteries listed in this report are not damaged or defective lithium batteries. 本报告所述锂电池不属于有缺陷或已损坏的锂电池。	Conform/符合
The lithium batteries don't belong to batteries returned to the manufacturer for safety reasons, are not waste lithium batteries and not lithium batteries being shipped for recycling or disposal. 该锂电池不属于召回电池,不属于废弃和回收电池。	Conform/符合
Lithium batteries are equipped with an effective means of preventing external short circuits, and equipment shall take measures to avoid unintentional start. 本报告所述锂电池具有适当的防外部短路措施, 设备必须采取措施防止意外启动。	Conform/符合
Lithium batteries shall be packed in inner packaging that completely enclose the cells or batteries. 本报告所述锂电池需装在完全将其封闭的内包装内。	Conform/符合
The inner packagings shall be packed in strong outer packaging constructed of suitable materials. 内包装须装入由适当材料构造的坚固外包装件内。	Conform/符合
Each package shall be marked with the appropriate lithium battery mark. 每个包装件应贴锂电池标记	Not applicable/不适用
Comment 备注	Lithium batteries listed in this report are of the types proven to meet the requirements of each applicable test in the UN "Manual of Tests and Criteria" ST/SG/AC.10/11/Rev.8/Subsection 38.3. 本鉴定书所述锂电池已通过联合国《试验和标准手册》(第八修订版) 38.3 节相应测试要求。
	UN 38.3 report No. UN 38.3 报告编号
	TCT250822B046

**Appendix Photos 附录图片:**

Sample 样品:



Package 包装:



## STATEMENT

### 声明

1. The certificate is issued by The TCT according to IMO IMDG Code published in the current year and the information of the goods and its shipment provided by the client (shipper or its agent).

本鉴定报告依据本年度国际海事组织《国际海运危险货物规则》、委托人（托运人或代理人）提供的物品及其运输信息出具。

2. The certificate is only responsible for the sample provided by the client.

本鉴定报告的鉴定结论仅对样品负责。

3. The client should provide samples and relevant data, at the same time, and they should guarantee that the name they declared is the same as the samples they provided and the goods to be transported.

客户必须如实提供样品及资料，并保证申报品名和样品与运输货物相同。

4. The certificate will be effective only after it is signed by the inspector, checker, and approver, and stamped.

本鉴定报告经检验人、审核人、批准人签字并加盖检验印章后生效。

5. The certificate must not be copied wholly or partly. The certificate is invalid if anything of the following happens, such as illegal transfer, reproduction, embezzlement, imposture, modification or tampering in any media form.

本鉴定报告不得全部或部分复制，复制无效。本鉴定报告私自转让、复制、盗用、冒用、涂改或以任何媒体形式篡改的均属无效。

6. The certificate takes no account of the State and Operator Variations.

本鉴定报告不考虑国家及经营人差异。

7. This certificate is only valid within the current year.

本鉴定报告仅在本年度内有效。

8. Objections to the certificate must be submitted to TCT within 15 days.

对鉴定报告若有异议，应于收到报告之日起十五日内向本机构提出。

Testing Laboratory: Shenzhen TCT Testing Technology Co., Ltd.

检验机构：深圳市通测检测技术有限公司

Address: 2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

地址：广东省深圳市宝安区福海街道桥头社区稔山工业区振昌胶粘制品厂 2101、2201

Search System 查询系统: <http://www.tct-lab.com>

Phone (电话): 400-6611-140

E-mail: [service@tct-lab.com](mailto:service@tct-lab.com)

# MSDS Report

# MSDS 报告

<b>Applicant's Name</b> 委托方名称	CONFIDENTIAL
<b>Applicant's Address</b> 委托方地址	CONFIDENTIAL
<b>Name of Sample</b> 样品名称	Power bank 移动电源
<b>Model</b> 型号	AST-PB010
<b>Nominal Voltage</b> 标称电压	Battery: 3.7V Output: 5V
<b>Rated Capacity</b> 额定容量	10000mAh, 37Wh
<b>Weight</b> 重量	221.914g
<b>Size 尺寸</b> (L×W×T)	(137.2×68.5×15.4)mm
<b>Prepared By</b> 编制单位	Shenzhen TCT Testing Technology Co., Ltd. 深圳市通测检测技术有限公司 2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China 广东省深圳市宝安区福海街道桥头社区稔山工业区振昌胶粘制品厂 2101、2201
<b>Report No.</b> 报告编号	TCT250822M046

Written by 编写: Spring Fu 傅福花

Approved by 批准: Tomson 冯瑞森

Inspected by 审核: Mollie Wu 吴为玲

Effective Date 生效日期: 2025.08



## Material Safety Data Sheet 化学品安全技术说明书

### Section 1- Chemical Product & Company Identification

#### 第一部分 化学品及企业标识

<i>Name of Sample</i> 样品名称	CONFIDENTIAL
<i>Manufacturer's Name</i> 生产单位名称	CONFIDENTIAL
<i>Manufacturer's Address</i> 生产单位地址	CONFIDENTIAL
<i>Tel</i> 电话	CONFIDENTIAL
<i>Emergency Tel</i> 应急电话	CONFIDENTIAL
<i>E-mail</i> 邮箱	CONFIDENTIAL

### Section 2- Hazards Identification

#### 第二部分 危险性概述

<i>Classification of Danger</i> 危险性类别	See section 14. 见第十四部分。
<i>Primary Route(s) of Exposure</i> 浸入途径	Eye, skin contact, ingestion. 眼睛, 皮肤接触, 摄入。
<i>Health Hazard</i> 健康危害	<p>The batteries are not hazardous when used according to the instructions of manufacturer under normal conditions. In case of abuse, there's Hazard of rupture, fire, heat, leakage of internal components, which could cause casualty loss. Abuses including 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.</p> <p>正常条件下根据制造商的说明使用电池不会产生危害。使用不当的情况下, 有破裂、起火、发烫、内部成分泄漏的危险, 并可能造成意外损失。使用不当的行为包括但不限于下列情况: 长时间充电、短路、投入火中、硬物撞击、尖物刺破、破碎, 和破裂。</p>

### Section 3- Composition/Information on Ingredients

#### 第三部分 成分/组成信息

Li-ion Battery (Contained In Power Bank) is a mixture.

锂离子电池（包含在移动电源中）是一种混合物。

Chemical Name 化学名称	Concentration or concentration ranges (%) 浓度或浓度范围(%)	CAS Number CAS 号(化学文摘索引登记号)
Lithium Cobalt Oxide 钴酸锂	30-60	12190-79-3
Graphite 石墨	10-30	7782-42-5
Phosphate(1-), hexafluoro-, lithium 六氟磷酸锂	10-30	21324-40-3
Copper 铜	5-10	7440-50-8
Aluminum foil 铝箔	1-5	7429-90-5
Nickel 镍	1-5	7440-02-0

Note: CAS number is Chemical Abstract Service Registry Number.

注意: CAS 号是化学文摘服务注册号码。

N/A=Not apply.

N / A =不适用。

### Section 4- First Aid Measures

#### 第四部分 急救措施

Eye 眼睛	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid. 万一接触，立即用大量的清水冲洗至少 15 分钟，翻起上下眼睑，直到化学的残留物消失为止，迅速就医。
Skin 皮肤	Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid. 万一接触，用大量水冲洗至少 15 分钟，同时除去污染的衣物和鞋子，迅速就医。
Inhalation 吸入	Remove from exposure and move to fresh air immediately. Use oxygen if available. 立即从暴露处移至空气清新处，如果呼吸困难给予输氧，立即就医。
Ingestion 食入	Ingesting damaged batteries, do not induce vomiting or give food or drink. Seek medical attention immediately. 食入损坏的电池，不要催吐且不要再吃下食物或喝饮料，立刻就医。

**Section 5- Fire Fighting Measures**

**第五部分 消防措施**

<b>Characteristics of Hazard</b> 危险特性	Dusts at sufficient concentrations can form explosive mixtures with air. Combustion generates toxic fumes. 高密度粉尘遇空气会形成爆炸性混合物。燃烧生成有毒烟雾。
<b>Hazardous Combustion Products</b> 燃烧产生的危险物品	Carbon dioxide. 二氧化碳。
<b>Fire-extinguishing Methods and Extinguishing Media</b> 灭火方法及灭火剂	For small fires, use water spray, dry chemical, carbon dioxide or chemical foam. 对于小型火险, 可使用水枪, 干冰 (也就是液态二氧化碳) 或化学泡沫。
<b>Attention in Fire-extinguishing</b> 灭火注意事项	Wear self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. 因为压强关系, 要穿戴可呼吸式全身防护装备, MSHA/NIOSH (经认证或等效的), 以及佩戴全套防护装置。

**Section 6- Accidental Release Measures**

**第六部分 泄露应急处理**

<b>Personal Precautions, protective equipment, and emergency procedures</b> 个人预防措施、防护装备和应急程序	In case of rupture. Attention! Corrosive material. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Refer to protective measures listed in Sections 7 and 8. 万一破裂。注意! 腐蚀性物质。避免接触皮肤, 眼睛或衣服。确保空气流通。根据需要使用个人防护装备。将人员撤离到安全区域。让人们远离溢出/泄漏处和处于逆风。参考第七部分和第八部分中列出的防护措施。
<b>Environmental Precautions</b> 环境保护措施	Prevent product from contaminating soil and from entering sewers or waterways. 防止产品污染土壤和进入下水道或水道。
<b>Methods and materials for Containment</b> 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, 可以用干砂或泥土来遏制液体溢出, 立即清理溢出物。
<b>Methods and materials for cleaning up</b> 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. 用惰吸收剂(干砂或泥土)吸收溢出的材料。污染物转移到可接受的废物容器中。收集所有受污染的吸收剂, 按照第十三部分的说明进行处理。用洗涤剂和水清洁污染区域, 收集所有受污染的洗涤水, 妥善处理。

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

<p><b>Handling</b> 操作</p>	<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. 拆解、挤压、直接放入火中或高温条件下，电池可能发生爆炸和燃烧。禁止短路或将电池正负极错误的安装在设备中。</p>
<p><b>Storage</b> 储存</p>	<p>Store in a cool, dry, well-ventilated area away from incompatible substances. Store locked up. Keep out of the reach of children. 储藏于阴凉，干燥，通风处，远离接触会发生反应的材料。存储锁定。放在儿童无法接触的地方。</p>
<p><b>Other Precautions</b> 其他要注意的防范措施</p>	<p>In case of rupture. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection equipment. 万一破裂。按照良好的工业卫生和安全规范进行操作。避免接触皮肤，眼睛或衣服。使用个人防护设备。</p>

**Section 8 - Exposure Controls/Personal Protection**  
第八部分 接触控制和个体防护

<p><b>Engineering Controls</b> 工程控制</p>	<p>Use adequate ventilation to keep airborne concentrations low. If used under conditions that generate particulates, the ACGIH TLV-TWA of 3mg/m<sup>3</sup> respirable fraction (10mg/m<sup>3</sup> total) should be observed. 保证空气流通使空气密度保持在低水平。如果在会生成微粒的情况下使用，应仔细观察 3mg/m<sup>3</sup> ACGIH TLV-TWA 3 的吸入量（总量为 10mg/m<sup>3</sup>）。</p>
<p><b>Personal Protective Equipment</b> 个人防护设备</p>	<p><b>Eye and Face Protection:</b> None required for consumer use. If there is a Hazard of contact: Tight sealing safety goggles. Face protection shield. 眼睛和脸部保护：消费者无需使用。如果有接触危险：密封安全护目镜。面部防护罩。</p> <p><b>Skin and Body Protection:</b> None required for consumer use. If there is a Hazard of contact: Wear protective gloves and protective clothing. 皮肤和身体防护：消费者无需使用。如果有接触危险：穿戴防护手套和防护服。</p> <p><b>Respiratory Protection:</b> No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. 呼吸系统防护：正常使用条件下不需要防护设备。如果超过暴露限值或发生刺激，可能需要通风和疏散。</p>

**Section 9- Physical and Chemical Properties**

**第九部分 理化特性**

<b>Physical State</b> 物理状态	Appearance: Prismatic 外形: 棱柱形
	Odour: If leaking, smells of medical ether. 气味: 泄漏时, 医用乙醚的气味。
<b>Change in condition:</b> 变化的条件:	
pH 酸碱度	Not applicable as supplied. 不适用。
Flash Point 闪点	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。
Flammability 易燃度	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。
Relative density: 相对密度	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。
Solubility (water) 溶解性 (水溶性)	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。
Solubility (other) 溶解性 (其他)	Not applicable unless individual components exposed. 除非单个的组件暴露, 否则不适用。

**Section 10 – Stability and Reactivity**

**第十部分 稳定性和反应性**

<b>Chemical Stability</b> 化学稳定性	Stable under recommended storage conditions. 在推荐的储存条件下可以保持稳定。
<b>Possibility of Hazardous Reactions</b> 危险反应的可能性	None under normal processing. 正常处理下没有。
<b>Conditions to Avoid</b> 应避免的条件	Exposure to air or moisture over prolonged periods. 暴露在空气中或长时间受潮。
<b>Incompatible materials</b> 不相容材料	Acids, Oxidizing agents, Bases. 酸, 氧化剂, 碱。
<b>Hazardous Decomposition Products</b> 有危害分解物	Carbon oxides. 二氧化碳。

**Section 11 – Toxicological Information**

**第十一部分 毒理学信息**

<p><i>Irritation</i> 刺激</p>	<p>In the event of exposure to internal contents, vapour 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的刺激性。</p>
<p><i>Sensitization</i> 致敏</p>	<p>Not Available. 不适用。</p>
<p><i>Reproductive Toxicity</i> 再生毒性</p>	<p>Not Available. 不适用。</p>
<p><i>Toxicologically Synergistic Materials</i> 协同材料毒理学</p>	<p>Not Available. 不适用。</p>

**Section 12-Ecological Information**

**第十二部分 生态学信息**

<p><i>General note:</i> 通用信息:</p>	<p>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接触地下水、水道或污水处理系统。</p>
<p><i>Anticipated behavior of a chemical product in environment/possible environmental impact/ ecotoxicity</i> 化学产品对环境/可能的环境预期的行为的一种生态毒性</p>	<p>Not Available. 不适用。</p>

**Section 13 – Disposal Considerations**

**第十三部分 废弃处置**

<p><i>Waste Treatment</i> 废弃处置方法</p>	<p>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。</p>
<p><i>Attention for Waste Treatment</i> 废弃注意事项</p>	<p>Deserted batteries shouldn't be treated as ordinary trash. Shouldn't be thrown into fire or placed in high temperature. Shouldn't be dissected, pierced, crushed or treated similarly. Best disposal method is recycling. 废电池不能被当作普通垃圾。不能扔进火中或置于高温下。不能解体，刺穿，破碎或类似的处理。最好的处理办法是回收利用。</p>

**Section 14 – Transport Information**

**第十四部分 运输信息**

<b>UN number</b> 联合国货物编号 (UN 编号)	3480
<b>Proper shipping name</b> 运输专用名称	Lithium ion batteries (including lithium ion polymer batteries) 锂离子电池 (包括锂离子聚合物电池)
<b>UN Classification (Transport hazard class):</b> UN 分类(运输危险类别):	Class 9 9 类
<b>PG Packing Group:</b> PG 包装等级:	N/A 不适用
<b>Packing Performance:</b> 包装性能:	II II
<b>Marine pollutant(Y/N):</b> 海洋污染物(Y/N):	N
<b>IMDG EmS No.:</b> IMDG EmS 编号:	F-A, S-I
<b>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.</b> 无论是对内还是对外的运输或运输方式, 用户都需要注意或遵守的特殊预防措施。	
<b>ICAO / IATA:</b> 国际民用航空组织/国际航空运输协会:	Can be shipped by air in accordance with International Civil Aviation Organization (ICAO), TI or International Air Transport Association (IATA), DGR Packing Instruction 965 Section IA, appropriate of IATA DGR 66 <sup>th</sup> (2025 Edition) for transportation. 货物可根据民用航空组织 (ICAO), TI 或国际航空运输协会 (IATA), DGR 66 <sup>th</sup> (2025 版) 包装说明 965 Section IA, 相关规定进行空运。
<b>IMDG CODE:</b> 国际海运危险货物规则:	Shipping may be done in accordance with the IMDG Code 2024 Edition (Amdt 42-24). 可根据 IMDG Code 2024 版 (Amdt 42-24) 相关规定进行海运。
<b>ADR/ RID:</b> 国际道路运输危险货物协定/ 国际铁路运输危险货物规则	Shipping may be done in accordance with the ADR 2025 / RID 2025. 可根据 ADR 2025 / RID 2025 相关规定进行运输。
In addition, to be permitted in transport each lithium cell and battery types must have passed the applicable tests set out in Subsection 38.3 of the UN Manual of Tests and Criteria. 此外, 每个锂电芯和电池类型都必须通过联合国《关于危险货物运输的建议书 试验和标准手册》第 38.3 节规定的适用测试。	

## 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

联合国《关于危险货物运输的建议书 规章范本》

#### Recommendations on the Transport of Dangerous Goods-Manual of Tests and Criteria

联合国《关于危险货物运输的建议书 试验和标准手册》

#### International Air Transport Association (IATA)

《国际航空运输协会》 (IATA)

#### International Maritime Dangerous Goods

《国际海运危险货物规则》

#### 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

《危险货物分类和品名编号》

#### OSHA Hazard Communication Standard

《职业安全与健康标准》危险通信标准

#### Toxic Substance Control Act (TSCA)

《有毒物质控制法》 (TSCA)

#### Code of Federal Regulations

《联邦条例》

In accordance with all Federal, State and local laws

符合所有联邦、州和地方法律

## Section 16 – Additional Information

### 第十六部分 其他信息

MSDS creation date: 2025 Version: 1.0

Sample photo 样品照片:



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