

# MSDS 报告

# MSDS Report

样品名称: 可充电锂离子聚合物电池 (HE403)  
(Samples) Rechargeable Li-ion Polymer Battery (HE403)

生产单位: 中山天贸电池有限公司  
(Producer) ZHONGSHAN TIANMAO BATTERY CO., LTD

单位地址: 中山市坦洲镇新前进村前进一路 208 号  
(Address) No.208,Qianjin One Road, Xin Qianjin Village,  
Tan Zhou Town, ZhongShan City

# 化学品安全技术说明书

## Material Safety Data Sheet

### 第一部分 化学品及企业标识

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

化学品名称：可充电锂离子聚合物电池

**Product Name:** Rechargeable Li-ion Polymer Battery

电池型号 **Battery Type:** HE403

生产企业名称：中山天贸电池有限公司

**Manufacturer:** ZHONGSHAN TIANMAO BATTERY CO., LTD.

地址：中山市坦洲镇新前进村前进一路 208 号

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### 第二部分 成分/组成信息

#### Section 2- Composition/information on Ingredient

| 化学名称<br>Chemical composition | 分子式<br>Molecule formula                          | CAS NO.    | 百分含量(%)<br>Weight (%) |
|------------------------------|--------------------------------------------------|------------|-----------------------|
| 钴酸锂<br>Lithium Cobalt Oxide  | LiCoO <sub>2</sub>                               | 12190-79-3 | 42~49                 |
| 石墨<br>Graphite               | C                                                | 7782-42-5  | 22~27                 |
| 电解液<br>Electrolyte           | ---                                              | ---        | 8~15                  |
| 铝<br>Aluminum                | Al                                               | 7429-90-5  | 2~6                   |
| 铜<br>Copper                  | Cu                                               | 7440-50-8  | 6~9                   |
| PVDF                         | (CH <sub>2</sub> -CF <sub>2</sub> ) <sub>n</sub> | 24937-79-9 | 0.5~1.0               |
| 炭黑<br>Carbon Black           | C                                                | 1333-86-4  | 0.5~1.4               |

## 第三部分 危险性概述

### Section 3- Hazards Identification

#### 健康危害 Health Hazards

化学物质泄漏会产生危害。电池机械性或电力性破损会产生接触性伤害。避免皮肤和眼睛接触电解液。

These chemicals are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrically abused. Contact of electrolyte and extruded lithium with skin and eyes should be avoided.

#### 暴露症状 Sign/ Symptoms of Exposure

短路的锂电池接触皮肤会产生电热性损伤。

A shorted lithium battery can cause thermal and chemical burns upon contact with the skin.

## 第四部分 急救措施

### Section 4 – First Aid Measures

**眼睛接触：**迅速用大量水冲洗 15 分钟以上，期间提起上下眼睑。速就医。

**Eyes:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

**皮肤接触：**除去附着衣物，用大量水冲洗 15 分钟。速就医。

**Skin:** Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.

**吸入：**移至通风处。如需要给予输氧。

**Inhalation:** Remove from exposure and move to fresh air immediately. Use oxygen if available.

**食入：**口服 2 杯牛奶或水。人员无意识下禁止催吐。速就医。

**Ingestion:** Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Get medical aid.

## 第五部分 消防措施

### Section 5 – Fire Fighting Measure

**闪点：**不涉及。

**Flash Point:** N/A.

**灭火剂：**干粉，CO<sub>2</sub>。

**Extinguishing Media:** Dry chemical CO<sub>2</sub>.

**灭火过程方法：**佩戴自主呼吸器。

**Special Fire-Fighting Procedure:** Self-contained breathing apparatus.

**爆炸危害：**过度加热会导致内含物溢出。

**Explosion Hazards:** Cell may vent when subjected to excessive heat-exposing battery contents.

**燃烧产物：**二氧化碳，一氧化碳，锂的金属氧化物，其他刺激性和毒性气体。

**Hazardous Combustion Products:** Carbon monoxide, carbon dioxide, lithium oxide fumes.

## 第六部分 泄漏应急处理

### Section 6 – Accidental Release Measures

#### 泄漏处理 **Leakage processing**

如电池发生破损并且电解液泄漏，疏散人员直到烟雾散尽。用布擦净，并装入袋子放入钢桶内。如电池灼热，先远离现场，冷却电池，使蒸汽消散。充分通风。避免皮肤或眼睛接触蒸汽。

If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the batteries to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.

#### 废弃物处理方法 **Waste Disposal Method**

电池应放电完全，将废弃的电池统一上交于相关部门，所有废弃物必须参照联合国，国家，地方性法规进行处置。参照国家环保局或联邦 EPA。

It is recommended to discharge the battery to the end, handing in the abandoned batteries to related department unified, dispose of the batteries in accordance with approval local, state, and federal requirements. Consult state environmental protection agency and/or federal EPA.

## 第七部分 操作处置与储存

### Section 7 – Handling and Storage

电池禁止拆开，损毁或焚烧，严禁破损流出电解液。需在密封容器内储存。禁止短路，过充电，强制放电，或投入火中。禁止挤压或刺穿电池。禁止将电池放入液体中。

The batteries 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.

#### 操作与储存 **Operation and storage**

禁止机械或电力损伤电池。储存在干燥，凉爽，通风的环境中，避免温度变化或高温。远离热源，避免长时间阳光照射。

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.

电池在拆开，挤压，遇火或高温情况下，会引起起火或爆炸，严禁短路或非正确操作。Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

## 第八部分 接触控制/个体防护

## Section 8 – Exposure Controls, Personal Protection

呼吸系统防护：如电池泄漏，需充分通风。

**Respiratory Protection:** In case of battery venting, provide as much ventilation as possible.

手防护：正常使用下，不需要。

**Ventilation:** Not necessary under conditions of normal use.

个人防护：正常使用下，不需要。

**Personal protective:** Not necessary under conditions of normal use.

其他防护：正常使用下，不需要。

**Other Protective Clothing :** Not necessary under conditions of normal use.

如电池发生泄漏，需佩戴呼吸器，防护手套，作业工作服，化学防护镜。

**If Batteries Venting:** Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields.

## 第九部分 理化特性

### Section 9 – Physical and chemical Properties

标称电压 **Nominal Voltage:** 3.87V。

额定电容量 **Rated Capacity:** 4770mAh (18.45Wh) .

外观与性状：银色方形无味的固体电池。

**Appearance Characters:** Quadrate, with odorless solid battery.

化学品用途：电子能源

**Chemical Uses:** For Energy Application

## 第十部分 稳定性和反应活性

### Section 10 – Stability and Reactivity

稳定性：稳定。

**Stability:** Stable.

避免条件：高温，高热，机械或电力损伤。

**Condition to Avoid:** Heating, mechanical abuse and electrical abuse.

危险的分解物 **Hazardous Decomposition Products:** N/A

危险的聚合产物 **Hazardous Polymerization:** N/A

如果泄露，避免接触强氧化剂，避免接触酸、碱、卤素。

If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons.

## 第十一部分 毒理学资料

### Section 11 – Toxicological Information

当电池破损时，吸入，皮肤接触或眼睛接触可能产生刺激作用。刺激性蒸汽会损伤皮肤，

眼睛和呼吸粘膜。

Inhalation, skin contact and eye contact are possible when the battery is opened. Exposure to internal contents, the corrosive fumes will be very irritating to skin, eyes and mucous membranes. Overexposure can cause symptoms of non-fibroid lung injury and membrane irritation.

## 第十二部分 生态学资料

### Section 12 – Ecological Information

环境影响

The environmental impact

正确使用和处置电池不会对环境产生危害。

When promptly used or disposed the battery does not present environmental hazard

处置废弃电池时，远离水源、雨水和雪水。

Disposal of waste batteries: keep away from water, rain and snow.

## 第十三部分 废弃处置

### Section 13 – Disposal Of Waste

如果锂电池在未完全放电或只部分放电的情况下，由于部分未耗尽的锂存在于电池中，此电池被视为具有一定危害的危险废弃物。必须通过经认可的相关机构对其进行处理方可废弃。在相关法律法规许可下，电池可循环再利用。

If batteries are still fully charged or only partially discharged, they can be considered a reactive hazardous waste because of significant amount of not creation, or unconsumed lithium remaining in the spent battery. The batteries must be neutralized through an approved secondary treatment facility prior to disposal as a hazardous waste. Recycling of battery can be done in authorized facility, through licensed waste carrier.

## 第十四部分 运输信息

### Section 14 – Transport Information

此产品已经通过联合国《试验和标准手册》第 III 部分 38.3 小节相应测试要求。

锂离子电池瓦时额定值不超过 100Wh 或者锂离子电芯瓦时额定值不超过 20Wh，运输过程中请根据第 62 版 IATA DGR 手册 965 第 II 节/IB 节或 966~967 第 II 节的指令运输。货物运输应遵守 IMDG CODE(Amdt. 39-18)2018 版特殊规定 188 执行，该货物属于非限制货物。

货物运输应符合美国运输部 49 CFR（联邦法规）第 173-185 节锂电池和电池的要求。

The goods had been tested according to the requirements of the UN manual of tests and Criteria, Part III, subsection 38.3;

The lithium-ion battery with a watt-hour rating not exceeding 100Wh or the cell with the watt-hour rating is not exceeding 20Wh, The lithium-ion battery according to Section II/Section IB of packaging instruction 965 or section II of packing instruction 966~967 of

IATA Dangerous Goods Regulation 62<sup>nd</sup> Edition may be transported.

The goods shall be complied with the requirements of special provision 188 of IMDG CODE (Amdt. 39-18)2018, The goods to be transport as Non-restricted Good.

The goods shall be complied with the requirements of the US Department of Transportation listed in 49 CFR(Code of Federal Regulations)Sections 173-185 Lithium batteries and cells.

更多关于锂离子电池运输，测试，包装等相关规定请参见网址 <http://www.labelmaster.com>

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

电池相互隔开并防止短路，泄漏，并装放在结实的容器内运输。

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

注：该电池在运输过程中应防止剧烈振动、冲击或挤压，防止日晒雨淋。具体细节请参照本文第七部分操作处置与储存。

Note: the battery should prevent violent vibration and impact during the transit or extrusion, prevent weathered. Details please refer to the article 7 part disposal and storage operation.

运输方式：空运,海运,铁路,公路。

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

UN 编号：UN3480 或 UN3481。

UN Number: UN3480 or UN3481 .

包装情况：纸箱包装。

Packing: carton packing

产品是不危险的。

The product is not dangerous.

## 第十五部分 法规信息

### Section 15 - Regulatory Information

法规信息

Law Information

《危险品规则》

《Dangerous Goods Regulation》

《危险品货物运输规章范本》

《Recommendations on the Transport of Dangerous Goods Model Regulations》

《国际海上危险货物运输规则》

《International Maritime Dangerous Goods》

《危险物品航空安全运送技术指南》

《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》

《职业安全与卫生条例的危害》

《Occupational Safety and Health Act》 (OSHA)

《毒性物质控制法》

《Toxic Substances Control Act》 (TSCA)

《消费品安全法》  
《Consumer Product Safety Act》(CPSA)  
《联邦环境污染控制法》  
《Federal Environmental Pollution Control Act》(FEPCA)  
《石油污染法》  
《The Oil Pollution Act》(OPA)  
《附加基金修正复审法 III (302/311/312/313)》  
《Superfund Amendments and Reauthorization Act Title III (302/311/312/313)》(SARA)  
《资源保护和回收法》  
《Resource Conservation and Recovery Act》(RCRA)  
《安全饮水法》  
《Safety Drinking Water Act》(CWA)  
《加州提案 65》  
《California Proposition 65》  
《美国联邦法规》  
《Code of Federal Regulations》(CFR)  
可参照联合国,国家,地方性法规  
In accordance with all Federal, State and Local laws.

## 第十六部分 其他信息

### Section 16 - Additional Information

上述信息是基于现有的数据信息,在实际应用过程中可能出现其他未预料的情况,其相应信息可能需要修改,我方不承担此项责任。在操作中请根据实际情况作出相应的正确的处置。

The above information is based on the data of which we are aware and is believed to be correct as of the data hereof. Since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data made available subsequent to the data hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

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\*\*\* 报告结束 \*\*\*  
\*\*\* End of report \*\*\*