

Material Safety Data Sheet

化学品安全技术说明书

Section 1 - Chemical Product and Company Identification

第一部分 化学品及企业标识

Product Name: Li-ion Battery

产品名称: 锂离子电池

Model/Type: ICR18650 2200mAh 3.7V 8.14Wh

型号/类型: ICR18650 2200mAh 3.7V 8.14Wh

Manufacturer:

生产企业名称:

Address:

地址:

Post Code:

邮编:

Tel:

电话:

Emergency Telephone:

应急电话:

Fax:

传真:

E-mail:

邮箱:

Section 2 -Composition/Information on Ingredient

第二部分 成分/组成信息

Chemical Composition 化学名称		Chemical Formula 分子式	CAS No: CAS 号:	Weight(%) 百分含量 (%)
Nickel cobalt manganese 三元(镍钴锰)		$\text{LiNi}_x\text{Co}_y\text{Mn}_{1-x-y}\text{O}_2$	182442-95-1	47
Graphite 石墨		C	7782-42-5	20.2
Organic Electrolyte 有机电解液	碳酸乙烯酯(EC)	$\text{C}_3\text{H}_4\text{O}_3$	96-49-1	3.35
	碳酸甲乙酯(EMC)	$\text{C}_4\text{H}_8\text{O}_3$	623-53-0	0.785
	碳酸二乙酯(DEC)	$\text{C}_5\text{H}_{10}\text{O}_3$	105-58-8	5.23
	碳酸丙烯酯(PC)	$\text{C}_4\text{H}_6\text{O}_3$	108-32-7	1.785
	六氟磷酸锂(LiPF_6)	F_6LiP	21324-40-3	1.35
Polypropylene 聚丙烯		C_3H_6	9003-07-0	1.2
Copper 铜		Cu	7440-50-8	7.7
Aluminum 铝		Al	7429-90-5	4.6
Nickel 镍		Ni	7440-02-0	6.8

Section 3 -Hazards Identification

第三部分 危险性概述

Health Hazards (Acute and Chronic)

健康危害

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 avoided.

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。

Sign/symptoms of Exposure

暴露症状

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

短路的锂电池接触皮肤会产生电热性损伤。

Section 4-first Aid Measures

第四部分 急救措施

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

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。

Skin: Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes .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。

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

吸入：移到通风片。如需要给予输氧。

Ingestion: give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. call a physician.

食入：口服 2 杯牛奶或水。人员无意识下禁止催吐。速就医。

Section 5 -Fire Fighting Measures

第五部分 消防措施

Flash point : N/A

闪点：不涉及

Auto-Ignition Temperature: N/A

燃点：无资料

Extinguishing Media : Dry chemical, CO 2 .

灭火剂 干粉, CO 2 .

Special Fire-Fighting Procedures

灭火过程方法 241030879

Self-contained breathing apparatus.

配戴自主呼吸器

Unusual Fire and Explosion Hazards

燃爆危害

Cell may vent when subjected excessive heat-exposing battery contents.

过度加热会导致内含物溢出

Hazardous Combustion Products

燃烧产物

Carbon monoxide, carbon dioxide, lithium oxide fumes.

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

Section 6-Accidental Release Measures

第六部分 泄漏应急处理

Steps to be Taken in case Material is Released or Spilled

泄漏处理

If the battery material is released, remove personnel from area until fumes dissipate.

Provide maximum ventilation to clear out hazardous gases. 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.

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。避免工眼睛接触蒸汽。

Waste Disposal Method

废弃物处理法

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 approved local, state, and federal requirements. Consult state environmental protection agency and/or federal EPA.

电池应放电完全, 将废弃的电池统一交予相关部门, 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。

Section 7 -Handling and Storage

第七部分 操作处置与存储

The batteries should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients 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.

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。

Precautions to be taken in handling and storing
操作和储存

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.

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

Other precautions

Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

Section 8 - Exposure Controls, Personal Protection

第八部分 接触控制/个体防护

Respiratory Protection

呼吸系统防护

In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting batteries. Respiratory protection is not necessary under conditions of normal use.

如电池泄漏，需充分通风。

Ventilation

手防护

Not necessary under conditions of normal use.

正常使用下，不需要

Protective Gloves

个人防护

Not necessary under conditions of normal use.

正常使用下，不需要

Other protective clothing or Equipment

其他防护

Not necessary under conditions of normal use.

正常使用下，不需要

Personal protection is recommended for venting batteries: Respiratory Protection

Protective Gloves, Protective Clothing and safety glass with side shields.

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。

Section 9 Physical and Chemical Properties

第九部分 理化特性

Nominal Voltage: 3.7V

标称电压: 3.7V

Rated Capacity: 2200mAh

额定电容量: 2200mAh

Appearance Characters: Solid batteries for the cylindrical tasteless

外观与性状: 圆柱形无味的固体电池。

Section 10 -Stability and Reactivity

第十部分 稳定性和反应活性

Stability: Under normal use, good stability

稳定性: 正常使用下，稳定性良好

Conditions to Avoid: Heating ,mechanical ,abuse and electrical abuse.

禁忌物: 高温、高热、机械或电力损伤

Hazardous Decomposition Products: N/A

热分解产物: N/A

Hazardous Polymerization: N/A

聚合产物: N/A

If leaked ,forbidden to contact with strong oxidizers, mineral acids, strong

alkalis, halogenated hydrocarbons.

如果泄漏，避免接触强氧化剂，避免接触酸、碱、卤素。

Section 11- Toxicological information

第十一部分 毒理学资料

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

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。

Section 12 -Ecological information

第十二部分 生态学资料

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

When disposed, keep away from water, rain and snow.

环境影响: 正确使用和处置电池不会对环境产生危害。

处置废弃时，远离水源，雨水和雪水。

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Section 13 -Disposal Considerations**第十三部分 废弃处置****APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION**

If batteries are still fully charged or only partially discharged ,they can be considered a reactive hazardous waste because of significant amount of uncreated 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.

如果锂电池未完全放电 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, 此电池视为具有一定危害的危险废弃物。必须通过经认可的其进行处理方可废弃。在相关法律法规下, 电池可循环再利用。

Sections 14 -Transport information**第十四部分 运输信息**

运输标签: 锂电池标记、第 9 类锂电池危险品标签、仅限货机标签

Label for conveyance:Lithium Battery Mark,class 9 lithium battery hazard lable,Cargo Aircraft only Label.

UN 编号: UN3480 或 UN3481

UN Number: UN3480 or UN3481

包装级别: 不适用

海洋污染物: 无

Marine Pollutant:NO

Packaging Group:N/A

正确的装运名称: 锂电子电池 (包括锂离子聚合物电池), 或锂离子电池与设备包装在一起, 或锂离子电池安装在设备中

Proper Shipping name:Lithium ion batteries(Including lithium ionpolymer batteries),Lithium ion battery Packed with Equipment,Lithium ion Battery Contained in Equipment

运输信息: 锂离子电池已通过联合国《实验和标准手册》第 III 部分 38.3 小节相应测试要求, 锂离子电池瓦数额定值不超过 100Wh 或者锂离子电芯瓦数额定值不超过 20Wh, 根据第 64 版 IATADGR 手册包装说明 965 第 IB 节或 966~967 第二节的指令可以运输。

货物运输应遵守 IMDGCODE (Amdt.41-22) 2022 版特殊规定 188 的要求, 该货物属于非限制货物, 包装应坚固足以避免在运输, 处理和储存堆放的机械损坏, 选着合适的包装材料和包装设计, 要防止电池意外导电和端子腐蚀。

Transportation information:Lithium ion batteries have passed the corresponding test requirements of the United Nations Manual of Tests and Criteria,part III,Subsection 38.3,Lithium ion batteries with wattage ratings of not more than 100Wh orlithium ion cells with wattage ratings of not more than 20Wh May be shipped according to the instructions in section IB965 or section ii 966-967 of the packaging instructions of IATADGR manual version 64.

The googs shall be transported in accordance with the requirements of Special Regulation 188 of THE IMDGCODE (Amdt.41-22)2022 edition and a shall be non-restricted goods.

Packaging shall be strong enough to avoid mechanical damage damage transportation,handling

and strong to avoid mechanical damage during transportation,handling and storage stacking,Choose appropriate packaging materials and design to prevent accidental battery conduction and terminal coeession.

Section 15 - Regulatory Information

第十五部分 法规信息

Law Information

法规信息

《Dangerous Goods Regulation》

《危险品规则》

《Recommendations on the Transport of Dangerous Goods Model Regulations》

《危险品货物运输规章范本》

《International Maritime Dangerous Goods》

《国际海上危险货物运输规则》

《Technical Instructions for the Safe Transport of Dangerous Goods》

《危险物品航空安全运送技术指南》

《Classification and code of dangerous goods》

《危险货物分类和品名编号》

《Occupational Safety and Health Act》 (OSHA)

《职业安全与卫生条例的危害》

《Toxic Substances Control Act 》 (TSCA)

《毒性物质控制法》

《Consumer Product Safety Act 》 (CPSA)

《消费品安全法》

《Federal Environmental Pollution Control Act 》 (FEPCA)

《联邦环境污染控制法》

《The Oil Pollution Act 》 (OPA)

《石油污染法》

《 Superfund Amendments and Reauthorization Act Title III(302/311/312/313) 》

(SARA)

《附加基金修正复审法 III(302/311/312/313)》

《Resource Conservation and Recovery Act 》 (RCRA)

《资源保护和回收法》

《Safety Drinking Water Act 》 (CWA)

《安全饮水法》

《California Proposition 65》

《加州提案 65》

《Code of Federal Regulations 》 (CFR)

《美国联邦法规》

In accordance with all Federal, State and Local laws.

可参照联合国、国家、地方性法规。

Section 16-Additional Information

第十六部分 其他信息

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