

Ningbo Lanqi Electronic Technology CO.,LTD.

宁波蓝琦电子科技有限公司

MSDS-568th File No:LQ230101 2023-01-01

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: Ningbo Lanqi Electronic Technology CO.,LTD.

生产企业名称: 宁波蓝琦电子科技有限公司

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SECTION 2 HAZARDS IDENTIFICATION

第二部分 危险性概述

Hazards Identification 危害识别:

Lithium batteries itself are classified to Class 9 Dangerous Goods, Miscellaneous dangerous substances and articles.

锂电池本身被归类在第九类危险品——杂项危险物质和物品。

The sealed intact battery is not hazardous in normal use.

密封完好的电池在正常使用下不存在危险性。

Emergency Overview 应急概况:

Caution: Avoid contact and inhalation the electrolyte contained inside the battery. 注

意: 避免接触和吸入蓄电池内的电解液。

SECTION 3 INFORMATION ON INGREDIENTS

第三部分 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 (%)	
Lithium cobalt oxide 钴酸锂	LiCoO ₂	12190-79-3	40	
Graphite 石墨	C	7782-42-5	18	
Organic Electrolyte 有机电解液	聚偏氟乙烯 poly(vinylidene fluoride)	CH ₂ -CF ₂	24937-79-9	5
	聚氯乙烯 (Polyvinyl chloride)	C ₂ H ₃ Cl	9002-86-2	3
	六氟磷酸锂 (LiPF ₆)	F ₆ LiP	21324-40-3	18
Copper 铜	Cu	7440-50-8	10	
Aluminum 铝	Al	7429-90-5	5	
Nickel 镍	Ni	7440-02-0	1	

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MSDS-568th File No:LQ230101 2023-01-01

SECTION 4 FIRST-AID MEASURES

第四部分 急救措施

Skin Exposure: If the internal battery materials of an opened battery cell come into contact with the skin, immediately flush with plenty of water.

皮肤接触: 若接触到电池内的物质, 立即用肥皂和大量清水彻底清洗皮肤。

Eye Exposure: In case of the internal battery materials in contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

眼睛接触: 若接触到电池内的物质, 立即提起眼睑, 用流动清水冲洗 15 分钟以上。

Inhalation Exposure: If inhaled the internal materials of battery, remove immediately to fresh air and seek medical attention.

吸入: 若吸入电池内的物质, 立即脱离现场至空气新鲜处。

Oral Exposure: If swallowed the internal materials of battery, do not induce vomiting. Seek immediate Medical attention.

食入: 若食入电池内的物质, 不宜催吐, 立即就医。

SECTION 5 FIRE FIGHTING MEASURES

第五部分 消防措施

Extinguishing Media:

Suitable: Dry chemical, Sandy soil, Carbon dioxide or appropriate foam.

灭火方法及灭火剂: 可用干粉、砂土、泡沫和二氧化碳灭火。

Firefighting:

Protective Equipment: wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific hazards: Emit toxic fumes under fire conditions.

灭火注意事项及措施: 消防员应戴自给正压式呼吸器, 穿消防防护服以防止皮肤和眼睛的接触。

SECTION 6 ACCIDENTAL RELEASE MEASURES

第六部分 泄露应急处理

Procedure of Personal Precaution:

If batteries show signs of leaking, avoid skin or eye contact with the material leaking from the battery. Use chemical resistant rubber gloves and non-flammable absorbent

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宁波蓝琦电子科技有限公司

MSDS-568th File No:LQ230101 2023-01-01

materials for clean up. Mix with inert material(e.g. Dry sand, vermiculite) and transfer to sealed container for disposal.

应急处理: 若电池内的物质泄露, 用洁净铲子收集于干燥、洁净、有盖的容器中待处置。处理人员应穿合适的防护服。

SECTION 7 HANDLING AND STORAGE

第七部分 操作处置与储存

Handling: Keep away from ignition sources, heat and flame. Such batteries must be packed in inner packages in such a manner as to effectively prevent short circuits and to prevent movement which could lead to short circuits. Avoid mechanical or electrical abuse. More than a momentary short circuit will generally reduce the battery service life. Avoid reversing battery polarity within the battery assembly. In case of a battery unintentionally be crushed, rubber gloves must be used to handle all battery components. Avoid contact with eyes, skin. Avoid inhalation. No smoking at working site. Materials to Avoid: Strong oxidizing agents, Corrosives.

操作处置注意事项: 操作人员应经过培训, 严格遵守操作规程。建议操作人员穿一般作业防护服, 带安全手套。远离火种、热源, 避免阳光直射。工作场所严禁吸烟。工作场所应有通风系统和设备。避免随意拆卸电池和弄错正负极。须牢记在内包装中, 以有效防止短路和防止可导致短路的移动。万一电池内的物质泄露, 避免眼睛、皮肤直接接触, 避免吸入。应与强氧化剂、腐蚀品分开存放。

Storage: Store in a cool, well-ventilated area. Keep away from ignition sources, heat and flame. Such batteries must be packed in inner packages in such a manner as to effectively prevent short circuits and to prevent movement which could to short circuits. Materials to Avoid: Strong oxidizing agents, Corrosives.

储存注意事项: 储存于阴凉、通风的库房内。远离火种、热源, 避免阳光直射。应与强氧化剂、腐蚀品分开存放。储存区配备相应品种和数量的消防器材、泄露应急处理设备和合适的收容材料。

SECTION 8 EXPOSURE CONTROL/PPE

第八部分 接触控制/个体防护

Engineering Control 工程控制:

Keep away from heat and open flame. Supply with sufficient partial air exhaust. Store in a cool, dry place. 远离热源和明火。提供足够的局部排气。存放在阴凉干燥的地方。

Respiratory Protection 呼吸保护:

Not necessary under conditions of normal use. Wear self-contained breathing filtermask if the density exceed in the air. Wear breathing apparatus under the condition of emergency rescue or

evacuation.

在正常使用条件下不需要。如果环境内气体密度超过空气中的密度，请佩戴自给式呼吸过滤器。在紧急救援或疏散的情况下，佩戴呼吸器。

Eyes Protection 眼睛保护:

Not necessary under conditions of normal use. Wear protective glasses if handling a leaking or ruptured battery. 在正常使用条件下不需要。如果处理泄漏或破裂的电池，请戴上防护眼镜。

Skin and Body Protection 皮肤和身体保护:

Not necessary under conditions of normal use. Wear fireproofing, gas defense clothes in case of handling a leaking or ruptured battery.

在正常使用条件下不需要。在处理泄漏或破裂的电池时，穿上防火防毒服。

Hands Protection 手部保护:

Not necessary under conditions of normal use. Wear chemical resistant rubber glove. 在正常使用条件下不需要。耐磨耐化学腐蚀橡胶手套。

Other Protections 其他保护:

No smoking, dining and drinking water in the workplace. Keep good habit of hygiene. 工作场所禁止吸烟、就餐和饮水。保持良好的卫生习惯。

SECTION 9 PHYSICAL/CHEMICAL PROPERTIES

第九部分 理化特征

Appearance:	cylindrical battery
外观与性状:	圆柱形电池
Odor:	Odorless
气味:	无臭
Melting Point/°C:	>300°C
熔点:	>300°C
Solubility:	Partial soluble in water
溶解性:	部分溶于水

SECTION 10 STABILITY AND REACTIVITY

第十部分 稳定性与反应活性

Stability:

Stable under normal temperatures and pressures.

Conditions to Avoid:

Avoid exposure to heat and open flame. Avoid mechanical or electrical abuse. Prevent short circuits. Prevent movement which could lead to short circuits.

Materials to Avoid:

Strong oxidizing agents, Corrosives.

Hazardous Polymerization:

Will not occur.

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MSDS-568th File No:LQ230101 2023-01-01

Hazardous Decomposition Products:

Metal oxides, CO, CO2.

稳定性:	常温常压下稳定
避免接触的物质:	强氧化剂、腐蚀品。
避免接触的条件:	误操作, 高温, 防止短路和防止可导致短路的移动。
聚合危害:	不聚合。
有害分解产物:	金属氧化物、CO/CO2 等。

SECTION 11 TOXICOLOGICAL INFORMATION

第十一部分 毒理学资料

Toxicity Data:

Not available.

Irritation Data:

The internal battery materials may cause irritatin to eyes and skin.

急性毒性:	无资料
刺激性:	其中的电解质对眼睛、皮肤有刺激性。

SECTION12 ECOLOGICAL INFORMATION

第十二部分 生态学资料

No data available.

生态毒性:	无资料
生物降解性:	无资料
非生物降解性:	无资料

SECTION 13 DISPOSAL CONSIDERATION

第十三部分 废气处理

Appropriate Method of Disposal of Substance:

Lithium batteries are best disposed of as a non-hazardous waste when fully or mostly discharged. Contact a licensed professional waste disposal service to dispose of large quantities materials.

废弃处置方法: 废弃电池的处置应符合《中华人民共和国固体废物污染环境防治法》, 《废电池污染防治技术政策》等有关法律、法规、政策和标准的要求。

SECTION 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 label, Cargo Aircraft Only Label.

UN 编号: UN3480

UN Number: UN3480

包装级别: 不适用

Packaging Group: N/A

Ems 编号: F-A, S-I

Ems No: F-A, S-I

海洋污染物: 无

Marine pollutant: No

正确的装运名称: 锂电子电池 (包括锂离子聚合物电池)

Proper Shipping name: Lithium ion batteries (Including lithium ion polymer batteries)

危险分类: 货物符合 IATA 第 64 版《危险品规则》包装说明 965 第 IB 节规定(2023 年版), 《国际海运危险货物规则》特殊规 188 海运危险货物规则, 包括通过 UN38.3 测试手册要求。

Hazard Classification: The goods are complied with the requirements of Section IB of Packing instruction 965 of 64th DGR Manual of IATA(2023 Edition), special provision 188 of IMDG CODE (, including the passing of the UN38.3 test.

OR:

或者:

运输标签: 锂电池操作标记

Label for conveyance: Lithium Battery Mark

UN Number: UN3481

包装级别: 不适用

Packaging Group: N/A

Ems 编号: F-A, S-I

Ems No: F-A, S-I

海洋污染物: 无

Marine pollutant: No

正确的装运名称: 安装在设备中的锂电子电池 (包括锂离子聚合物电池) / 与设备包装在一起的锂离子电池 (包括锂离子聚合物电池)

Proper Shipping name: Lithium ion batteries contained in equipment (Including lithium ion polymer batteries) / Lithium ion batteries packed with equipment (Including lithium ion polymer batteries)

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MSDS-568th File No:LQ230101 2023-01-01

危险分类：货物符合 IATA 第 64 版《危险品规则》包装说明 966/967 第 II 节规定（2023 年版），《国际海运危险货物规则》特殊规 188 海运危险货物规则，包括通过 UN38.3 测试手册要求。

Hazard Classification: The goods are complied with the requirements of Section II of Packing instruction 966/967 of 64th DGR Manual of IATA(2023Edition), special provision 188 of IMDG CODE, including the passing of the UN38.3 test.

SECTION 15 REGULATORY INFORMATION

第十五部分 法规信息

ICAO:

1. Unless be exempted according to ICAO TI, the lithium ion cell/batteries (UN3840, PI 965) and lithium metal Cell/batteries (UN3090, PI 968) are forbidden for carriage on passenger aircraft.
2. Unless be approved according to ICAO TI, Lithium ion cells/batteries (UN3480, PI 965) must be offered for transport at a state of charge (SoC) not exceeding 30% of their rated design capacity.
3. A shipper is not permitted to offer for transport more than one (1) package prepared according to section II of PI 965 and PI 968 may be placed into an overpack.
4. Packages prepared according to Section II of PI 965 and PI 968 must be offered to the operator separately from other cargo and must not be loaded into a unit load device (ULD) before being offered to the operator.

国内法规:

本品运输时在 GB12268-2012《危险货物物品名表》中的编号为：3480/3481。

该型号锂电池通过联合国《关于危险货物运输的建议书 试验和标准手册》UN38.3 试验，根据《危险货物物品名表》中的特殊规定，不作为危险货物运输。

本品在《铁路危险货物物品名表》(2009 版)中的铁危编号为：91013/91014。

ICAO:

1. 除非依据《技术细则》的相关要求取得豁免，单独包装的锂离子电池（芯）（UN3480, PI 965）和锂金属电池（芯）（UN 3090, PI 968）货物禁止使用客机运输。
2. 除非依据《技术细则》的相关要求取得特别批准，按照包装说明 965 要求运输的锂离子电池（芯）货物，交运时锂离子电池（芯）的荷电状态不得超过其额定容量的 30%。
3. 在任何一票货物中，按照包装说明 968 第 II 节或 968 第 II 节要求运输的锂电池货物包装件不得超过一个。每个集合包装中所装的按照包装说明 965 第 II 节或 968 第 II 节要求运输的锂电池货物包装件不得超过一个。
4. 按照包装说明 965 或 968 第 II 节要求运输的锂电池货物包装件或集合包装必须与其他货物分开交运，且在交运前不得装入集装箱。

SECTION 16 OTHER INFORMATION

第十六部分 其他信息

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 person receiving it shall made his own determination of the suitability of the material for his particular purpose.

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