

# Material Safety Data Sheet

## 材料安全数据表

### 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: 18650 (1S2P) 3.7V 4400mAh 16.28Wh  
型号/类型: 18650 (1S2P) 3.7V 4400mAh 16.28Wh

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 (%)	
Nickel cobalt manganese 三元(镍钴锰)	LiNixCoyMn1-x-yO2	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)	C3H4O3	96-49-1	3.35
	碳酸甲乙酯(EMC)	C4H8O3	623-53-0	0.785
	碳酸二乙酯(DEC)	C5H10O3	105-58-8	5.23
	碳酸丙烯酯(PC)	C4H6O3	108-32-7	1.785
	六氟磷酸锂 (LiPF6)	F6LiP	21324-40-3	1.35
Polypropylene 聚丙烯	C 3 H 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 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 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:	无味
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.

**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 irritation 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。

## SECTION 12 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 废弃处理

**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

General packaging requirement 一般包装要求：

1. The cells or batteries must be protected so as to prevent short circuits.

电芯或电池必须加以保护，以防止短路。

2. The cells or batteries or equipment must be packed in suitable strong outer packaging.

电芯或电池或设备必须包装在合适的坚固的外包装中。

If batteries contained in equipment, equipment must be secured against movement within the outer

packaging and be packed so as to prevent accidental activation.

如果电池包含在设备中，设备必须在外包装内固定，防止移动，并进行包装，以防止意外激活。

3. If batteries contained in equipment, equipment must be secured against movement within the outer, packaging and be packed so as to prevent accidental activation.

如果电池包含在设备中，设备必须在外包装内固定，防止移动，并进行包装，以防止意外激活。

Air transportation, according to IATA-DGR 65 th Edition (Effective 1 January-31December 2024)

空运，依据 IATA-DGR 第 65 版（2024 年 1 月 1 日至 12 月 31 日生效）

UN Number + PSN: UN 3480, LITHIUM ION BATTERIES

UN 编号+运输专用名: UN 3480, 锂离子电池

Hazard Class: Class 9

危险等级: 第九类危险品

Packaging requirement: Strong package, packaging according to PACKING INSTRUCTION965, section IB

包装要求: 坚固包装，按照包装说明 965 IB 部分要求打包

UN Number + PSN: UN 3481, LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, or UN 3481, LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT

UN 编号+运输专用名: UN 3481, 锂离子电池与设备一起包装，或 UN 3481, 锂离子电池安装在设备中

Hazard Class: Not restricted

危险等级: 不受限制

Packaging requirement: Strong package, packaging according to

PACKING INSTRUCTION 966-967, section II  
包装要求: 坚固包装, 按照包装说明 966-967 II 部分要求打包

Sea transportation, according to IMO IMDG Code (Amend 41-2022)

海运, 依据 IMO IMDG Code (Amend 41-2022)

UN Number + PSN: UN 3480, LITHIUM ION BATTERIES, or  
UN 3481, LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, or  
UN 3481, LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT  
UN 编号+运输专用名: UN 3480, 锂离子电池 或  
UN 3481, 锂离子电池与设备一起包装, 或 UN 3481, 锂离子电  
池安装在设备中  
Hazard Class: Not restricted, according to sp188  
危险等级: 不受限制, 根据特殊条款 188  
Package instruction: Strong package, Packaging in accordance to corresponding  
requirements of sp188  
包装说明: 坚固包装, 按照 sp188 相应要求进行包装  
EmS No. /应急措施编号: F-A, S-I

Road transportation, according to ADR-2023

公路运输, 依据 ADR-2023

UN Number + PSN: UN 3480, LITHIUM ION BATTERIES, or  
UN 3481, LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, or  
UN 3481, LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT  
UN 编号+运输专用名: UN 3480, 锂离子电池 或  
UN 3481, 锂离子电池与设备一起包装, 或 UN 3481, 锂离子电  
池安装在设备中  
Hazard Class: Not restricted, according to sp188  
危险等级: 不受限制, 根据特殊条款 188  
Package instruction: Strong package, Packaging in accordance to corresponding  
requirements of sp188  
包装说明: 坚固包装, 按照 sp188 相应要求进行包装  
EmS No. /应急措施编号: F-A, S-I

## SECTION 15 REGULATORY INFORMATION

### 第十五部分 监管信息

*Dangerous Goods Regulation (DGR)*

*Recommendations on the Transport of Dangerous Goods Model Regulations*

*International Maritime Dangerous Goods (IMDG)*

*Occupational Safety and Health Act (OSHA)*

*Toxic Substances Control Act (TSCA)*

*Code of Federal Regulations (CFR)*

*Technical Instructions for the Safe Transport of Dangerous Goods*

*California Proposition 65*

*Superfund Amendments and Reauthorization Act Title III (302/311/312/313) (SARA)*

*Globally Harmonized System of Classification and Labeling of Chemicals (GHS)*

In accordance with all Federal, State and local laws. 符合所有联邦、州和地方法律。

## 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 make his own determination of the suitability of the material for his particular purpose.

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