

材料安全数据表

Material Safety Data Sheet

产品名称: 锂离子电池组
Product Name: Lithium-ion Battery

产品型号: Ex18650B1 3.6V 3250mAh 11.7Wh
Product Module:

制表单位: 阳江纳谷科技有限公司
The Company: Ledlenser Corporation Ltd.

1. 化学品及企业标识 Identification of the chemical and supplier

产品标识 Product identifier

产品名称 Products Name	锂离子电池组 Lithium-ion Battery
产品型号 Product Module	Ex18650B1
额定电压 Rated Voltage	3.6V
额定容量 Rated Capacity	3250mAh
额定能量 Rated Energy	11.7Wh

安全物质资料表提供企业信息 Details of the supplier of the MSDS

制造商 Manufacturer	阳江纳谷科技有限公司 Ledlenser Corporation Ltd.	
制造商地址 Manufacturer Address	广东省阳江市阳东区东城镇裕东一路 25 号 No.25, Yudong 1 Road, Dongcheng Town, Yangdong District, Yangjiang City, Guangdong Province, China	
鉴定依据 Inspection according to	依据 GB/T 16483-2008 & ISO 11014:2009/联合国《关于危险品货物运输的建议书》编制; According to GB/T 16483-2008 & ISO 11014:2009/EEC Directive 93/112/EC UN "Recommendations on the TRANSPORT OF DANGEROUS GOODS;	
紧急联系电话 Emergency Telephone call	662-6603594	
Date 日期	Appraisal 鉴定日期	2024-12-26
	Validity 有效期	2025.01.01 - 2025.12.31

2. 成分/组成信息 Composition / Information on Ingredient

危险成分 (化学名称) Hazardous Ingredients (Chemical Name)	含量及含量百分比 (%) Concentration or Concentration ranges (%)	CAS 编号 CAS Number
Lithium Metal Oxiate	20-60	7739-93-2
Aluminum	1-10	7429-90-5
Carbon	10-30	7440-44-0
Copper	1-15	96-49-1
Organic electrolyte pronicpacally involves	5-25	7439-89-6
Aluminum,Lron.aluminum labmunate plastic	1-30	7429-90-5

3. 危险性概述 Hazards Identification

爆炸危险性 Explosive risk	该物品不属于爆炸危险品。 This article does not belong to the explosion dangerous goods.
易燃危险性 Flammable risk	该物品不属于易燃危险品。 This article does not belong to the flammable material.
氧化危险性 Oxidation risk	该物品不属于氧化危险品。 This article does not belong to the oxidation of dangerous goods.
毒害危险性 Toxic risk	该物品不属于毒害危险品。 This article does not belong to the toxic dangerous goods.
放射危险性 Radioactive risk	该物品不属于放射危险品。 This article does not belong to the radiation of dangerous goods.
腐蚀危险性 Mordant risk	该物品不属于腐蚀危险品。 This article does not belong to the corrosion of dangerous goods.
其他危险性 other risk	该电池瓦时率为 11.7Wh, 属于锂离子电池 (包括锂离子聚合物电池)。 Watt hour rate 11.7Wh which belong to the Lithium ion batteries (including lithium ion polymer batteries).

4. 急救措施 First aid measures

眼睛：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。

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

皮肤：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。

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

吸入：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。

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

食入：引用两杯牛奶或水。如果当事人仍然清晰可以采取催吐的方法，并且立即就医。

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

5. 消防措施 Fire-fighting measure

燃点：不适用。

Flash Point: N/A.

自燃温度：不适用。

Auto-Ignition Temperature: N/A.

灭火介质：大量水(降温)，二氧化碳。

Extinguishing Media: Water, CO₂.

特殊灭火程序：自给式呼吸器。

Special Fire-Fighting Procedures: Self-contained breathing apparatus.

异常火灾或爆炸：当电芯暴露于过热的环境中时，安全阀可能会打开。

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

燃烧产生的危险物品：一氧化碳，二氧化碳，锂氧化物烟气。

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

6. 泄漏应急处理 Accidental release measures

当电池发生泄漏，液体可以用砂、土、或其他惰性物质吸收，受污染的区域应同时通风。

When leakage of batteries happens, liquid could be absorbed with sands, earth, or other inert substance, and the contaminated area should be ventilated meantime.

未放热或燃烧的破损电池，应装入密封的塑料袋或容器。

Damaged batteries that are not hot or burning should be placed in a sealed plastic bag or container.

7. 操作处置和储存 Handling and Storage

操作注意事项：储存时远离食物和水源。吃饭喝水前彻底清洗双手。储有化学物的容器搬用时需防止静电的产生和积聚。

Precautions for safe handling: Consumption of food and beverage should be avoided in work areas. Wash hands with soap and water before eating, drinking. Ground containers when transferring liquid to prevent static accumulation and discharge.

有关火灾及防止爆炸的资料：电池在拆开、挤压、遇火或高温情况下，会引起起火或爆炸，严谨短路或非正常操作。

Information about fire and explosion protection: Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

储存注意事项：储存在一个低温、干燥、通风良好的环境。远离热源，避免长时间阳光照射。未使用时密封容器。

Conditions for safe storage, including any incompatibilities: Requirements to be met by storerooms and receptacles. Store in a cool, dry well-ventilated place. Keep away from heat, avoiding the long time of sunlight.

8. 接触控制 / 个人防护 Exposure controls / Personal protection

呼吸防护：当电池排气阀打开时，应尽量使通风设备开至最大，避免将打开排气阀的电芯局限在某一狭窄空间内。正常操作条件下，呼吸保护是不必要的。

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

通风条件：正常使用条件下不需要。

Ventilation: Not necessary under conditions of normal use.

防护手套：正常使用条件下不需要。

Protective Gloves: Not necessary under conditions of normal use.

其他防护服或设备：正常使用条件下不需要。

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

电池开阀试验时应做好个人防护。

呼吸防护，防护手套，防护服装和有护边的安全玻璃罩都是要准备的。

Personal Protection is recommended for venting battery.

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

9. 理化特性 Physical and Chemical Properties

有关基本物理及化学特性的信息。

Information on basic physical and chemical properties.

外观：不适用。

Appearance: Not applicable.

气味：不适用。

Odour: Not applicable.

气味阈值：不适用。

Odor thresholds: Not applicable.

酸碱度：不适用。

PH: Not applicable.

燃点：除单个电芯暴露试验外其他不适用。

Flammability: Not applicable unless individual components exposed.

溶解性（水溶性）：除单个电芯暴露试验外其他不适用。

Solubility (water): Not applicable unless individual components exposed.

溶解性（其他）：除单个电芯暴露试验外其他不适用。

Solubility (other): Not applicable unless individual components exposed.

易燃性（固态、气态）：除单个电芯暴露试验外其他不适用。

Flammability (solid, gas): Not applicable unless individual components exposed.

初始沸点和沸腾范围：除单个电芯暴露试验外其他不适用。

Initial boiling point and boiling range: : Not applicable unless individual components exposed.

蒸汽压力：不适用。

Vapor pressure: Not applicable.

蒸汽密度：不适用。

Vapor density: Not applicable.

相对密度：不适用。

Relative density: Not applicable.

辛醇/水分配系数：不适用。

Distribution coefficient : octanol/water.

自动点火温度：不适用。

Automatic ignition temperature: Not applicable.

分解温度：不适用。

Decomposition temperature: Not applicable.

闪点：不适用。

Flash point: Not applicable.

蒸发速率：不适用。

Evaporation rate: Not applicable.

范围：不适用。

Scope: Not applicable.

易燃性或爆炸性上限/下限：除单个电芯暴露试验外其他不适用。

Flammability or explosive upper / lower limits: Not applicable unless individual components exposed.

粘度：不适用。

Viscosity: Not applicable.

10. 稳定性和反应活性 Stability and reactivity

稳定性：产品在第 7 节所述的条件下稳定。

Stability: Product is stable under conditions described in Section 7.

应避免的材料：氧化剂，碱，水。

Materials to avoid: Oxidising agents, alkalis, water.

危险分解物：有毒烟雾，并可能形成过氧化物。

Hazardous polymerization: Hazardous Decomposition Products: Toxic Fumes, and may form peroxides.

如果发生泄露，避免与强氧化剂，无机酸，强碱，卤代烃接触。

If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalies, halogenated Hydrocarbons.

11. 毒理性资料 Toxicological information

标志及症状：无，除非电池破裂。

Signs & symptoms: Signs & symptoms: None, unless battery ruptures.

吸入：对肺有刺激性。

Inhalation: Inhalation: Lung irritant.

皮肤接触：对皮肤刺激性。

Skin contact: Skin irritant.

眼睛接触：对眼睛有刺激性。

Eye contact: Eye irritant.

食入：吞下中毒。

Ingestion: Poisoning if swallowed.

下列情况会危害人员身体健康：万一发生与电池内部材料接触的事故，轻微或严重的刺激，都可能使皮肤出现干燥和灼烧的感觉，并且损坏靶器官（肝脏，肾脏）的神经。

Medical conditions generally aggravated by exposure: In the event of exposure to internal contents, moderate to server irritation, burning and dryness of the skin may occur, Target organs nerves, liver and kidneys.

12. 生态学资料 Ecological information

生态毒性资料 Ecological toxicity	无可用资料。 No data available.
生态环境 Environmental	正常处理电池不会对环境造成危害。 Proper disposal of battery does not present ecological hazard.
生物体内积累： Bioaccumulation potential:	慢慢地生物降解。 Slowly Bio-degradable.

13. 废弃处置 Disposal consideration

废弃处理方法：交由电池回收企业进行回收处置，不能随意丢弃于环境中，具体参照有关国家相关法规。
Waste Treatment: It needs to be referred to the waste battery recycling companies for recycling disposal, batteries can't be arbitrarily discarded in the environment. Specific conditions reference to the relevant national laws and regulations.

14. 运输信息 Transport information

UN 编号: UN Number:	UN3480 UN3480 UN3481 UN3481
运输专用名称 Proper Shipping Name	1) 锂离子电池; 1) Lithium ion batteries; 2) 锂离子电池伴随设备包装在一起; 2) Lithium ion batteries packed with equipment; 3) 锂离子电池装在设备中 (包括锂离子聚合物电池) 3) Lithium ion batteries contained in equipment. (including Lithium ion polymer batteries)
运输标签配置 Label for conveyance	第九类危险品标签 Lithium battery Label 仅货机标签 Class 9 hazard Label 锂电池操作标签 Cargo aircraft only Label
包装等级 Packing Group:	不适用 N/A
EMS 编号 EMS NO.	F-A,S-I F-A,S-I
包装组别 Packing group	I

该电池包装应遵守 IATA DGR 66 版包装说明 PI 965 1A 的运输要求。

The package of battery should be complied with the requirements of Packing instruction 1A of 965 IATA DGR 66th Edition for transportation.

该电池包装应遵守 IMDG (41-22) 或“关于危险货物运输的规章范围” 188 的特殊规定。

The package of battery should be complied with the requirements of 188 of IMDG (41-22) or the <Recommendations On The Transport Of Dangerous Goods-Model Regulations>188

海洋污染物 (是/否): 否。

Marine contaminants (yes / no): No.

运输方式: 空运、海运、铁路、公路。

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

在其他场地内外进行运输或传送时, 用户需要了解或需要遵守的特殊预防措施: 无其他信息。

Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either on or outside the premises: No further information.

15. 法规信息 Regulation information

可适用于锂离子电池运输的法律法规

Major applicable regulations for the transportation of lithium-ion cell sand batteries.

《关于危险货物运输的建议书规章范本》 (TDG)

Recommendations on The Transport of Dangerous Goods (TDG)

《国际海运危险货物规则》 (IMDG)

International Maritime Organization (IMO) International Maritime Dangerous Goods Code.

《国际空运危险货物规则》 (ICAO-TI)

The international Civil Aviation Organization Technical Instructions on the Safe Transport of Dangerous Goods by Air (ICAO-TI)

《国际航空运输协会-危险品规则》 (IATA-DGR)

International Air Transport Association Dangerous Goods Regulations (IATA-DGR)

《中国民航航空危险品运输管理规定》 (CCAR276-R1)

Provision of the Civil Aviation Administration of China on the Administration of Transport of Dangerous Goods by Air.

《联合国关于危险货物运输的建议书试验和标准手册》，第三部分，38.3 条

Recommendations on The Transport of Dangerous Goods, the UN Manual of Tests and Criteria, Part III, Sub-Section 38.3

《空运危险货物包装检验安全规范》 GB19433-2009

Safety Code for inspection of Packaging of Dangerous Goods Transported by Air (GB19433-2009)

《锂电池航空运输规范》 MH/T 1020-20138

Standard for Transport of Lithium Batteries by Air (MH/T 1020-20138)

16. 其他信息 Other information

参考资料 Reference

【1】 国际民用航空组织 (ICAO), 网址: <http://www.icao.int>

The International Civil Aviation Organization (ICAO), website: <http://www.icao.int>

【2】 国际航空运输协会 (IATA), 网址: www.iata.org

The International Air Transport Association (IATA), website: www.iata.org

【3】 国际海事协会 (IMO), 网址: <http://www.imo.org>

The International Maritime Organization (IMO), website: www.imo.org

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