ONRO TECHNOLOGY CO.,LTD

Dongguan Ang'yue Electronics Co.

Add: 6th Floor, Building 4, Zone A, Kegu Industrial Park, Shangsha Community, Chang'an Town, Dongguan City, Guangdong Province
Tel： 0769-88002607 Fax：0769-88002607
http：onroworld.com E-mail：1137078351@qq.com

NO.: AYMD-2024-011702

Material Safety Data Sheet

材料安全数据表

样 品 名 称: 可充电锂离子电池

Name of Sample： Rechargeable Li-ion Battery

委 托 单 位： 余姚煜昌电器有限公司

Commissioner： Yuyao Yuchang Electrical Appliance Co.,Ltd.

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材料安全数据表

Material Safety Data Sheet

1. 化学品及企业标识 Chemical product and company identification	
样品名称 Name of Sample	可充电锂离子电池 Rechargeable Li-ion Battery
样品型号 Type/Model	1826A
产品参数 Ratings	3.6V/ 2600mAh/9.36Wh
委托单位 Commissioned by	余姚煜昌电器有限公司 Yuyao Yuchang Electrical Appliance Co.,Ltd.
委托单位地址 Commissioner address	浙江省余姚市泗门镇同济路北段 18 号 No.18 North Tongji Road, simen Town,315470 Yuyao,, Zhejiang, P.R.China
生产单位 Manufacturer	东 莞 市 昂 跃 电 子 有 限 公 司 Dongguan Ang'yue Electronics Co.,LTD.
生产单位地址 Manufacturer address	东莞市长安镇上沙社区中南南路6号科谷工业园第4栋6楼 6th Floor, Block A4, Kegu Industrial Park, No.6, South Zhongnan Road, Shangsha Community,Chang an Town Dongguan City
鉴定依据 Inspection according to	EEC Directive 93/112/EC 联合国《关于危险品货物运输的建议书》 UN “Recommendations on the TRANSPORT OF DANGEROUS GOODS”
应急电话 Emergency telephone	0769-88002607
	送样日期：2024-1-10 签发日期：2024-1-17 Receiving date: 2024-1-10 Date of issue :2024-1-17

Approved By ： Reviewed By: Tested By :
批注：高凤宵 审核：潘锦梅 主检：何锦燕

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2. 成分组成信息
Composition Information

材料及组分 Chemical Name	化学式 Chemical Formula	CAS 号 CAS NO.	重量含量 Wt%
Nickel-cobalt-manganese lithium 镍钴锰酸锂	LiNiCoMnO2	346417-97-8	36.6
Graphite 石墨	C	7782-42-5	19.8
PVDF 聚偏氟乙烯	(CH2-CF2)n	24937-79-9	0.4
CMC 羧甲基纤维素	C8H16NaO8	9000-11-7	0.3
Acetylene black 乙炔黑	C	1333-86-4	0.9
Styrene-butadiene rubber 丁苯橡胶	(C8H8.C4H6)x	9003-55-8	0.4
PP 聚丙烯	(C3H6)n	9003-07-0	0.7
Lithium hexafluorophosphate 六氟磷酸锂	LiF6P	21324-40-3	2.0
Ethvlene carbonate 碳酸乙烯酯	C3H4O3	96-49-1	2.0
Ethyl methyl carbonate 碳酸甲乙酯	C4H8O3	623-53-0	1.0
Dimethyl carbonate 碳酸二甲酯	C3H6O3	616-38-6	6.8
Copper 铜	Cu	7440-50-8	7.6
Aluminum 铝	Al	7429-90-5	3.5
Nickel 镍	N	7440-02-0	0.7
Iron 铁	Fe	7439-89-6	17.3

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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	该物品不属于放射性危险品 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	该物品为锂离子电池，瓦时率 9.36Wh，属于锂离子电池（包括锂聚合物电池） This article is Li-ion Battery, Watt hour rate 9.36Wh, Which belong to the Lithium ion batteries (including lithium polymer batteries)

3.2 Danger sort 危险类别：N/A

3.2.1 Routes of entry 进入途径：

3.2.1.1 Eyes and Skin - When leaking the electrolyte solution contained in the battery irritates go ocular tissues and the skin.

眼睛和皮肤--当电池泄漏时，电池内部的电解液会刺激眼膜和皮肤，甚至有疼痛感。

3.2.1.2 Inhalation --Respiratory (and eye)irritation may occur if fumes are released due heat or an abundance of leaking batteries.

吸入--电池大量泄漏产生热量导致冒烟，吸入会刺激呼吸系统。

3.2.1.3 Ingestion--The ingestion of the battery can be harmful . Content of open battery can cause serious chemical burns of mouth , esophagus and gastrointestinal tract .

吞食--吞食电池对身体有很大伤害，电池里含的物质会引起嘴、食道、胃肠道化学灼伤。

3.3 Health harm 健康损害：

Exposure to leaking electrolyte from ruptured or leaking battery can cause .电池破裂导致电解液外漏会导致以下伤害：

3.3.1 Inhalation --Burns and irritation of the respiratory system, coughing wheezing, and shortness of breath.

吸入--灼伤或刺激呼吸系统，可能会产生咳嗽、喘息和呼吸浅短等现象。

3.3.2 Eyes --Redness, tearing, burns .The electrolyte is corrosive to all ocular

tissues.

眼睛--红肿、疼痛、灼伤。电解液会腐蚀视网膜。

3.3.3 Skin --The electrolyte is corrosive and causes shin irritation and bums.

皮肤--电解液有腐蚀性，会刺激皮肤甚至灼伤皮肤。

3.3.4 Ingestion -- The electrolyte solution cause tissue damage to throat and gastrointestinal track.

吞食--电解液会导致咽喉组织损伤和胃肠道损伤。

Environment harm 环境危害：Not necessary under conditions of normal use .

正常使用条件下没有危害。

3.3.5 Explosion danger 爆炸危险：The battery may be explosive at high temperature (above 60℃) or exposing to the fire.

电池在高温条件下（60℃以上）或者置于火中会导致爆炸。

4. 急救措施
First Aid Measures

4.First Aid Measures 急救措施

4.1 Skin contact：Not anticipated . If the battery is leaking and the contained material contacts the skin ,flush with copious amounts of clear water for at lease 15 minutes.

皮肤：意外接触，如果电池泄漏所含物质接触皮肤，请用大量清水冲洗至少 15 分钟。

4.2 Eye contact: Not anticipated . If the battery is leaking and the contained material contacts eyes ,flush with copious amounts of clear water for at lease 15 minutes.

Get medical attention at once.

眼睛：意外接触，如果电池泄漏所含物质接触眼睛，请用大量清水冲洗至少 15 分钟，立即就医。

4.3 Inhalation: Not anticipated . If the battery is leaking ,remove to fresh air . If irritation persists,consult a physician.

吸入:意外接触。如果电池泄漏，请移到空气新鲜的地方。如果刺激持续，请咨询医生。

4.4 Ingestion：Not anticipated . If the battery is leaking and the contained material is ingested ,rinse mouth and surrounding area with clear water at once . Consult a physician immediately for treatment .

吞食:意外接触。如果电池泄漏并摄入了含有的物质，立即用清水冲洗口腔和周围区域，并立即咨询医生进行治疗。

5. 消防措施
Fire-fighting Measures

5.1 Unusual Fire and Explosion Hazards :Battery may explode or leak potentially hazardous vapors subject to : exposed to excessive heat (above the maximum rated temperature as specified by the manufacturer)or fire,over-charged,short circuit,punctured and

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crushed.
异常的着火和爆炸危险:电池暴露于高温环境(高于制造商规定的最高额定温度)或火灾、过充电、短路、穿刺和挤压的情况下，可能会爆炸或泄漏潜在的有害气体。
5.2 Hazardous Combustion Products : Fire excessive heat ,or over voltage conditions may produce hazardous decomposition products . Damaged batteries can result in rapid heating and the release of flammable vapors .
危险燃烧危害:着火，过热或过电压条件下可能导致产品分解。损坏的电池会导致快速升温和释放可燃性气体。
5.3 Extinguishing Media : Dry chemical type extinguishers are the most effective means to extinguish a battery fire ,A CO2 extinguisher will also work effectively.
灭火器:干粉灭火剂是最有效扑灭电池火灾的灭火器，二氧化碳灭火器也能有效地灭火。
5.4 Fire Fighting Procedures : Use a positive pressure self-contained breathing apparatus if batteries are involved in a fire .Full protective clothing is necessary .During water application ,caution is advised as burning pieces of flammable particles may be ejected from the fire.
灭火程序:如果火灾中涉及电池，请使用自给式正压呼吸器。必须穿完整的防护服。在用水灭火时应小心，因为燃烧的一些可燃颗粒可能会从火中喷出。

6. 泄露应急处理
Accidental Release Measures

6 . Accidental Release Measures 意外泄漏措施
The material contained within the battery would only be released under abusive conditions .In the event of battery rupture and leakage, collect all the released materials that are not or burning in an appropriate waste disposal container while wearing proper protective clothing and ventilate the area . Placed in approved container and disposed according to the local regulation .
电池内的物质只有在恶劣的条件下才会被释放。如果电池破裂或泄漏，请将所有未被释放或正在燃烧的物质收集在适当的废物处理容器中，同时穿上适当的防护服并在通风区域进行。放置在批准的容器中，并根据当地法规进行处理。

7. 操作处置和储存
Handing and Storage

7.1Handling 操作：
7.1.1 Batteries are designed to be recharged . However, improperly charging a battery may cause the battery to flame .When charging the battery ,use dedicated chargers and follow the specified conditions.

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电池被设计成充电的。但是，不正确的充电可能会导致电池着火。当给电池充电时，请使用专用充电器并遵守指定的充电条件进行。

7.1.2 Never disassemble or modify a battery .不要拆解电池。

7.1.3 Do not immerse , throw ,and wet a battery in water .不要浸没、投掷和用水弄湿电池。

7.1.4 Should a battery unintentionally be crushed ,thus releasing its contents,rubber gloves must be used to handle all battery components .Avoid the inhalation of any vapors that may be emitted .

如果电池不慎被挤压，从而导致电池内的物质释放出来，必须带上橡胶手套来处理电池的所有成份，避免吸入可能释放的任何气体。

7.1.5 Short circuit causes heating.In addition ,short circuit reduces the life of the battery and can lead to ignition of surrounding materials . Physical contact with to short-circuited battery can cause skin burn .

短路引起过热。此外，短路会缩短电池的寿命，并可能导致周围材料着火。身体接触短路的电池会导致皮肤灼伤。

7.1.6 Avoid reversing the battery polarity ,which can cause the battery to be damaged or flame.

避免颠倒电池极性，可能会导致电池损坏或起火。

7.1.7 In the event of skin or eye exposure to the electrolyte , refer to Section 4 , First Aid Measures .

如果皮肤或眼睛接触到电解液，请参阅第 4 项“急救措施”立即采取急救。

7.2 Storage 储存

7.2.1 Batteries should be separated from other materials and stored in a noncombustible , well ventilated , sprinkler-protected structure with sufficient clearance between walls and battery stacks . Do not place batteries near heating equipment , nor expose to direct sunlight for long periods .

电池应与其他材料分开存放，存放于不易燃烧、通风良好、的地方，自动灭火装置应与墙壁和电池组之间留有足够的间隙。不要将电池放置在加热设备附近，也不要长时间暴露在阳光直射下。

7.2.2 Do not store batteries above 35℃ or below -20℃.Store batteries in a cool(about 20±5℃) in a long time,dry and ventilated area that is subject to little temperature change . Elevated temperatures can result in reduced battery cycle life . Battery exposure to temperatures in excess of 60℃ will result in the battery venting flammable liquid and gases.

请勿将电池存放于 35℃以上或-20℃以下的环境内。电池应长期存放于阴凉(20±5℃左右)、干燥通风、温度变化小的地方。温度升高会导致电池循环寿命缩短。电池暴露在超过 60℃的温度下可能会导致电池泄漏可燃性液体和气体。

7.2.3 Keep batteries in original package until use and do not jumble them.

保持电池最原始的包装直到使用时，不要把电池弄混乱。

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8. 接触控制/个人防护
Exposure Controls/Personal Protection

8.1 Engineering Controls : Keep away from heat and open flame .
工程控制:远离热源和明火。
8.2 Ventilation : Not necessary under conditions of normal use . In case of abuse ,use adequate mechanical ventilation (local exhaust) for the battery that vent gas or fumes.
通风设备:在正常使用条件下不需要。在滥用的情况下，使用适当的机械通风(局部排气)设备把电池产生的气体或烟雾排出。
8.3 Respiratory Protection : Not necessary under conditions of normal use . If battery is burning , leave the area immediately . During fire fighting fireman should use self-contained breathing ,full-face respiratory equipment . Fires may be fought but only from safe fire fighting distance , evacuate all persons from the area of fire immediately .
呼吸防护:正常使用情况下不需要。如果电池正在燃烧，请立即离开该区域。在灭火过程中，消防队员应使用自给式呼吸设备。火灾可以扑救，但必须在安全的灭火距离内扑救，并立即将所有人员撤离火区。
8.4 Eye Protection : Not necessary under conditions of normal use . Use safety glasses with side shields if handling a leaking or ruptered battery .
护眼:正常使用情况下不需要。如果处理漏液或损坏的电池，请使用带侧护的安全眼镜。
8.5 Body Protection : Not necessary under conditions of normal use . Use rubber apron and protective working in case of handling a leaking of ruptured battery .
身体保护:在正常使用条件下不需要。处理电池破裂泄漏时，使用橡胶围裙和防护装置。
8.6 Others : Use good chemical hygiene practice . Wash hands thoroughly after cleaning-up a battery spill caused by leaking battery . No eating ,drinking , or smoking in battery storage area .
其他:保持良好的化学卫生规范。清理完电池泄漏的电解液后，要彻底清洗手。电池存放区禁止吃东西、喝酒、吸烟。

9. 物理和化学特性
Physical and chemical properties

外形：圆柱形
Appearance: Cylindrical
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Ref,NO.:AYMD-2024-011702

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State 状态	**Solid 固体**
Odor 气味	**N/A**
PH 值	**N/A**
Vapor pressuer 气压：	**N/A**
vapor density 气体密度：	**N/A**
Boiling point 沸点：	**N/A**
Solubility in water 在水中的溶解度：	**Insouluble 不溶**
Specific gravity 比重：	**N/A**
Density 密度：	**N/A**

10. 稳定性和反应活性
Stability and reactivity

10.1 Stability : Stable
稳定性： 稳定
10.2 Conditions to Avoid : Do not beat ,throw into fire ,disassemble , short circuit , immerse in water or overcharge , etc .
避免情况:请勿敲打、投入火中、拆卸、短路、浸入水中或过度充电等。
10.3 Hazardous Polymerization: WILL not occur .
危险聚合:不会发生。
10.4 Hazardous Decomposition Products: The battery may release irritative gas once the electrolyte leakage.
危险分解物:一旦电解液泄漏，电池可能释放刺激性气体。

11. 毒理学资料
Toxicological Information

11.1 The battery does not elicit toxicological properties during routine handling and use . If the battery is opened through misuse or damage , discard immediately . Internal components of cell are irritant and sensitization.
电池在日常操作和使用中不会产生毒理学特性。如果电池因误用或损坏而打开，请立即丢弃。芯内部成分具有刺激性和致敏性。
11.2 Irritancy :The electrolytes contained in this battery can irritate eyes with any contact . Prolonged contact with the skin or mucous membranes may cause irritation.
刺激性:本电池中所含的电解质会刺激眼睛。长时间接触皮肤或粘膜可能引起刺激反应。
11.3 Sensitization : No information is available.
致敏性:无相关资料。
11.4 Teratogenicity : No information is available.

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致畸胎性:尚无相关资料。

11.5 Carcinogenicity :No information is available.

致癌性:尚无相关资料。

11.6 Mutagenicity: No information is available.

致突变性:尚无相关资料。

11.7 Reproductive toxicity : No information is available.

生殖毒性:没有相关资料。

12. 生态信息
Ecological Information

12.1 When properly used and disposed , the battery does not present environmental hazard.

正确使用电池时，不会对环境造成危害。

12.2 The battery does not contain mercury , cadmium , or lead .

电池不含汞、镉或铅。

12.3 Do not let internal components enter marine environment . Avoid releasing to water ways , wastewater or ground water .

不要让电池内部成分进入水生态。避免释放到水路系统、废水或地下水中。

13. 废弃处置
Disposal Considerations

13.1 Disposal of the battery should be performed by permitted , professional disposal firms knowledgeable in Federal , State or Local requirements of hazardous waste treatment and hazardous waste transportation .

电池的处置应由经有许可证的专业处置公司进行，这些公司应了解联邦、州或地方对危险废物处理和危险废物运输的要求;

13.2 The battery should be completely discharged prior to disposal and or the terminals taped or capped to prevent short circuit . When completely discharged it is not considered hazardous .

处置前应将电池完全放电或者将电池末端用胶带封盖，以防短路。完全放电的电池被认为是没有危险的。

14. 运输信息
Transport Iinformation

14.1 According to PACKING INSTRUCTION 965~967 of IATA DGR 65th Edition for

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transportation , the special provision 188 of IMDG(inc Amdt 41-22) . The batteries should be securely packed and protected against short-circuits . Examine whether the package of the containers are integrate and tighten closed before transport . Take in a cargo of them without falling , dropping , and breakage . Prevent collapse of cargo piles . Don’t put the goods together with oxidizer and chief food chemicals . The transport vehicle and ship should be cleaned and sterilized before transport . During transport , the vehicle should prevent exposure , rain an high temperature . For stopovers , the vehicle should be away from fire and heat sources . When transported by sea , the assemble place should keep away from bedroom and kitchen , and isolated from the engine room , power and fire source . Under the condition of Road Transportation , the driver should drive in accordance with regulated route , don’t stop over in the residential area and congested area .

按照 IATA DGR 第 65 版《运输包装说明》965~967,IMDG 的特殊规定 188 条款(包括 Amdt 41-22)。电池应妥善包装，防止短路。运输前应检查集装箱包装是否完整、是否紧固。确认装运一批货物，没有掉落、跌落和破损，防止货物堆倒塌。请勿将本品与氧化剂、食品放在一起。运输车辆和船舶在运输前应进行清洁消毒。运输过程中，车辆应防止暴晒、雨淋和高温。中途停留时，车辆应远离火源和热源。海上运输时，装配地点应远离卧室和厨房，并与机舱、电源、火源隔离。在道路运输的情况下，驾驶员应按照规定的路线行驶，不要在居民区和人口密集区域停靠。

14.2 UN number UN 编号

UN Number: 3480

14.3 UN Proper shipping name UN 适当的运输名称

LITHIUM ION BATTERIES (including lithium ion polymer batteries) or LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT OR LITHIUM ION BATTERIES PACKED WITH EQUIPMENT (including lithium ion polymer batteries) .

锂离子电池(包括锂离子聚合物电池)或设备自带的锂离子电池或随设备包装的锂离子电池(包括锂离子聚合物电池)

14.4 Packing Instruction (if applicable) 包装方式（如果适用）

965 IB , 966 II , 967 II

14.5 Marine pollutant 海洋污染物 （Yes / No ）

No

14.6 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)散装运输

No information available 无可用信息。

14.7 Special precautions 特别预防措施

No information available 无可用信息。

15. 监管信息
Regulation Information

15.1 The transport of rechargeable lithium-ion batteries regulated by the united nations

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as detailed in the “ model Regulations on the transport of dangerous Goods Ref . ST/SG/AC . 10/1 Revision 22 2021 ” .
可充电锂离子电池的运输受联合国统一管制，详见“关于危险货物运输的新型法规参考 ST/ SG /AC. 10/1 22 版本 2021”。

15.2 Defined by UN in the “ Recommendations on the transport of Dangerous Goods Chapter 38.3 Manual of Tests and Criteria Ref . ST/SG/AC . 10/11 Rev. 7/Amend . 1 2021” . The Lithium-ion Cells and the battery Packs may or may not be assigned to the UN No. 3480 Class-9 that is restricted for transport .
由联合国在”关于危险货物第 38.3 章试验和标准手册参考 ST/ SG /AC. 10/11 第 7 修订版修正 1 2021”里明确规定，锂离子电池和电池组可能会或可能不会被分配到 UN3480 第 9 类危险品（运输受限）。

15. 其他信息
Other information

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