化学品安全技术说明书（MSDS）

委托方 Client	Ropla Elektronik Sp. z o.o.
委托方地址 Add. of Client	ul. Wrocławska 1C, 52-200 Suchy Dwór
样品名称 Description	锂离子圆柱电池 Li-ion Cylindrical Battery
型号规格 Model/Type	INR18650-26M
标称电压 Nominal Voltage	3.7V
额定容量 Rated Capacity	2600mAh
额定能量 Rated Energy	9.62Wh
Trade Name 品牌名	AKYGA
制造厂 Manufacturer	Ropla Elektronik Sp. z o.o.
制造厂地址 Add. Of Manufacturer	ul. Wrocławska 1C, 52-200 Suchy Dwór
技术依据 Reference documents	ISO 11014:2009 化学品安全技术说明书—内容和项目顺序 ISO 11014:2009 Safety data sheet for chemical products-Content and order of sections GB/T 16483-2008 化学品安全技术说明书 内容和项目顺序 GB/T 16483-2008 Safety data sheet for chemical products-Content and order of sections 国际航空运输协会《危险品规则》（第 63 版） IATA Dangerous Goods Regulation (63rd) 国际海事组织《国际海运危险货物规则》（第 40-20 版） IMO International Maritime Dangerous Goods Code (40-20 edition)

出版日期 Date of Receipt	2022 年 04 月 14 号

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一． 样品信息 Sample information

样品名称 Sample Name	锂离子圆柱电池 Li-ion Cylindrical Battery	样品型号 Type	INR18650-26M
标称电压 Nominal voltage	3.7V	额定容量 Rated capacity	2600mAh
样品外观 Shape	圆柱形 Cylindrical		

二．内容与说明 Content and instructions

1. 化学品及企业标识 Chemical product and company identification

化学品的名称 Name of chemical product		锂离子圆柱电池 Li-ion Cylindrical Battery
制造商 Manufacturer	名称 Name	Ropla Elektronik Sp. z o.o.
	地址 Address	ul. Wrocławska 1C, 52-200 Suchy Dwór
	电话号码 Telephone number	+48-71-3698742
	应急咨询电话 Emergency telephone number	+48-71-3698742
	电子邮件 E-mail address	s.maczuga@ropla.eu

这份 MSDS 报告由东莞市中认联科检测技术有限公司签发；
This MSDS was prepared by Dongguan ZRLK Testing Technology Co., Ltd.

2. 危险性概述 Hazards identification

1) 主要的物理及化学危险性 Important Physical and chemical hazards

在强压变形、拆解、短路时有起火爆炸与化学烧伤等危险，在高温环境或放置于火焰环境中、超负荷使用时有起火爆炸危险.

When the battery is in extreme pressure deformation, high-temperature environment, overload, short-circuit condition, or disassemble the battery, an explosion of fire and chemical burn hazards may occur.

2) 对人体健康影响 Effects of the human health.

眼睛 Eyes

正常使用下无危害性，但在拆解、弯曲、短路可能会引起电池起火爆炸伤害眼睛。破损时挥发出气体会对眼睛产生刺激。

In normal condition, contact between the battery and eyes will not cause any harms. However, the gas Volatilize from a damaged battery may be harmful to eyes.

皮肤 Skin

正常情况下接触无对皮肤危害性。在电池破损情况下接触有可能引起化学烧伤或皮肤过敏发炎症状。

In normal condition, contact between the battery and skin will not cause any harms. Contact with a damaged battery may cause skin allergies or chemical burns.

吸入 Inhalation

完好电池并无挥发出可供吸入气体情况。破损时会挥发出微量气体会刺激呼吸道，严重者可能引起过敏反应。

A battery volatilizes no gas unless it was damaged. Damaged battery will volatilize little gas that may stimulate the respiratory tract or cause an anaphylaxis in serious condition.

食入 Ingestion

食入会对呼吸道产生伤害、对肠胃产生烧伤，严重会造成永久性损害

Swallowing battery will be damaged to the respiratory tract and cause chemical burns to the stomach; in serious conditions it will cause Permanent damage.

3. 成分/组成信息 Composition/information on ingredients

Hazardous Ingredients (Chemical Name)	Concentration or concentration ranges (%)	CAS Number
钴酸锂 Lithium Cobalt Oxide (LiCoO2)	35.5	12190-79-3
铝 Aluminum Foil (Al)	9	7429-90-5
聚偏氟乙烯树脂 1.1-Difluoroethylene polymer	1	24937-79-9
石墨 Graphite (C)	18	7782-42-5

铜 Copper Foil (Cu)	15	7440-50-8
丁苯橡胶 Styrene-Butadiene polymer	1.5	9003-55-8
六氟磷酸锂 /Lithium hexafluorophosphate	2.8	21324-40-3
碳酸乙烯酯 Ethylene carbonate	5	96-49-1
碳酸二甲酯 Dimelene carbonate	5	616-38-6
碳酸甲乙酯 Carbonate, methyl ethyl	5	623-53-0
镍/Nickel	2.2	7440-02-0

4. 急救措施 First-aid measures

眼睛 Eyes

如有接触损坏电池，立即用清水清洗眼睛 15 分钟以上直至刺痛/刺激感消失为止，并及时去就医。

If your eyes contact with a damaged battery, flush with copious amount of water for at least 15 minutes until the stinging and irritation subside, and Seek immediate medical attention.

皮肤 Skin

如有接触，立即脱下被污染衣服并用大量清水冲洗皮肤或淋浴，如灼伤感持续立刻去就医。

If your skin contact with a damaged battery, immediately take off contaminated clothing and flush your skin with copious amount of water or have a shower. Seek immediate medical attention if burning sensation continues.

吸入 Inhalation

立刻转移到空气新鲜环境下呼吸新鲜空气，休息。如出现呼吸困难或头晕头痛等症状立刻请人陪同去就医。

Remove to fresh air immediately and have a rest, If you feel dyspnea, dizziness or headache, seek immediate medical attention.

食入 Ingestion

如果食入电池，不要催吐且不要再吃下食物或喝饮料，立刻就医

If battery or open battery is ingested, do not induce vomiting or give food or drink. Seek medical attention immediately.

5. 消防措施 Fire-fighting measures

此产品在强压弯曲或短路等情况下容易起火并冒出大量烟雾，应正确使用并置于阴凉环境下，避免放置在高温、日光照射及受重压的地方。如发生起火，戴上防毒面具在条件允许情况下洒水或用灭火器让毗邻的未起火电池降温避免火势蔓延并用工具把起火电池和其他电池分离，让其自然熄灭；或用大量的水灭火，但起火电池一般都会在内部化学物质反应完后火才熄灭下来。如果有电池起火火势较大，立刻报火警并疏散人员到安全地方。

This battery can get fire easily and made a lot of smoke under the forced bending and short-circuit condition, so it should be properly used and placed in a cool environment and Avoid placing the battery package under heat,

pressure and direct sunlight. In the event of fire, wear gas masks and cool the adjacent batteries and control the spread of fire with water or extinguishers, separate the fire batteries with other batteries as conditions permit, let the fire naturally extinguished, otherwise put out the fire with lots of water. In normal condition the fire is not extinguished until the reactions that between the chemicals contained in the battery are completed. In the event of a big fire, report the fire immediately and evacuate to a safe place.

6. 泄漏应急处理 Accidental release measures

将溢漏物与电池清扫，并放进干燥可密闭的金属容器或材质不易燃的容器中，交由电池回收企业进行环保处理。避免电池弃扔到自然环境中。

Clean the spills and batteries, place them in a dry sealed metal container or nonflammable material container, and bring them to battery recycling companies to deal with environmental protection. Do not throw away the damaged batteries or waste batteries.

7. 操作处置与储存 Handling and storage

操作 Handling

不能擅自组装拆解电池或短路，不能让电池接近火源。运输电池应避免暴力装卸电池货物、避免电池受到挤压或剧烈振动。

Do not assemble and disassemble a battery, battery short-circuit is not allowed too. Keep the battery away from the fire. When transporting these batteries, the battery should be careful handling to avoid the battery being squeezed or excessive vibration.

储存 Storage

长时间存储前先充满电。电池应储存于阴凉环境中。

The battery should be fully charged before long term storage. The battery should be stored in a cool environment.

8. 接触控制和个体防护 Exposure controls/Personal Protection

工程控制 Engineering control

选择合理的通风设备，足够量的防毒面具灭火器及水源，配备存放泄漏电池的金属容器。配备洗浴设备。

Choose the suitable ventilation equipment; provide sufficient quantity of fire extinguishers, gas mask and water; equip with metal storage containers and bathing equipments.

呼吸系统防护 Respiratory protection

正常情况下无必要作防护 Normally there is no need to do protection.

眼睛防护 Eye protection

正常情况下无必要作防护 Normally there is no need to do protection.

身体和皮肤防护 The body and skin protection

正常情况下无必要作防护 Normally there is no need to do protection.

9. 理化特性 Physical and chemical properties

物品外观与形状 Object appearance and shape

圆柱形 Cylindrical

气味 Odour

无 None

10. 稳定性和反应性 Stability and reactivity

稳定性 Stability

正常环境下稳定。 Stable under the regular environment.

应避免的条件 Should avoid conditions

高温或过湿环境，撞击震动或受挤压，正负极反接使用。

High temperature, wet environment, mechanical shock, vibration, crush, reverse polarity used should be avoided.

不相容物质 Incompatible materials

无 None

危险的分解产物 Hazardous decomposition products

在起火时会释放出刺鼻的浓烟雾。

When the battery catches fire, it will release pungent thick smoke.

11. 毒理学信息 Toxicological information

正常情况下接触电池无毒性作用。

In normal condition, contact with the battery is non-toxic.

12. 生态学信息 Ecological information

正常处理电池不会对生态环境产生影响。

Proper disposal of battery does not present ecological hazard.

13. 废弃处置 Disposal considerations

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。

It needs to be referred to the waste battery recycling companies for recycling disposal, cannot arbitrarily discarded in the environment. Specific conditions reference to the relevant national laws and regulations.

14. 运输信息 Transport information

这份报告适用于海运，空运和陆运；

This report applies to by sea, by air and by land;

该电池样品为锂离子圆柱电池,该电池型号已通过 UN38.3 测试。

This battery sample is Li-ion Cylindrical Battery and This battery type is proved to meet the Requirements tests in the UN *Manual of Tests and Criteria,* Part III, subsection 38.3.

锂离子圆柱电池应满足 2022 国际航空运输协会《危险品规则》(63 版)的 3.9.2.6.1(e) 规定进行包装空运；

Li-ion Cylindrical Battery Can be transport by air according to the International Air transport Association (IATA) Dangerous Goods Regulations relevant regulations (63rd) for section 3.9.2.6.1(e).

可按 IATA《危险品规则》中包装说明 PI965 IB、PI966 II 和 PI 967 II 章节相关规定进行包装空运。

Can be transport by air according to the Packing Instructions PI965 IB、PI966 II and PI 967 II Section of IATA

锂离子圆柱电池必须加以保护防止短路，包括防止与同一包装件内可能导致短路的导电材料接触；

Li-ion Cylindrical Battery was protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to short circuit;

锂离子圆柱电池必须放置于可将其完全封闭的内包装中，再放入外包装。为防止电池损坏和被挤压，内包装必须放电坚固硬质外包装中；

Li-ion Cylindrical Battery offered for transport must be packed in inner packaging's that completely enclose the cell or battery; to provide protection from damage or compression to the batteries, the inner packaging's must be placed in a strong rigid outer packaging;

锂离子电池依据 PI 965 IB 章节运输时，必须在荷电状态(SoC)不超过其额定容量的 30%状态下进行运输；

Lithium-ion batteries according to the PI 965 Section IB transport listed in this report must be offered for transport at a state of charge (SoC) not exceeding 30% of their rated capacity.

可按 IMO IMDG CODE(2020 版)《国际海运危险货物规则》特殊规定第 188 条相关规定进行包装海运。

Can be transport by sea according to the special provision 188 of IMO *International Maritime Dangerous Goods Code relevant regulations*.

According to 2.9.4.7 of IMO IMDG Code (2020 Edition), Manufacturers and subsequent distributors of batteries manufactured shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5;

根据 IMO IMDG CODE(2020 版) 的 2.9.4.7，锂电池或电池组的制造商和生厂后的销售商应提供联合国《试验和标准手册》第 III 部分第 38.3 小节第 38.3.5 段规定的 UN38.3 试验概要；

According to 2.9.4.7 of IMO IMDG Code (2020 Edition), Manufacturers and subsequent distributors of batteries manufactured shall make available the test summary as specified in the manual of tests and criteria, Part III, sub-section 38.3, paragraph 38.3.5;

根据 RID/ADR(2019 版) 的 2.2.9.1.7(g), 锂电池组的制造商和和生厂后的销售商应提供联合国《试验和标准手册》第 III 部分第 38.3 小节第 38.3.5 段规定的 UN38.3 试验概要；

According to 2.2.9.1.7(g) of RID/ADR (2019 Edition), Manufacturers and subsequent distributors of batteries manufactured shall make available the test summary as specified in the manual of tests and criteria, Part III, sub-section 38.3, paragraph 38.3.5;

15. 法规信息 Regulatory Information

《危险品规则》Dangerous Goods Regulations

《国际海运危险货物规则》IMO International Maritime Dangerous Goods Code relevant regulations.

参照联合国，国家，地方性法规。

Refer to U. N., national, local regulations.

16. 其他信息　Other information

上述信息是基于现有的数据信息，是我们目前所掌握的最佳资料。然而，不对此类信息做出适当性担保或任何其他明示或默示担保，我们也不承担使用此类信息所产生的任何责任。用户应自行调查，以确定信息是否适合其特定目的。虽然在编制本报告所载的数据时采取了合理的预防措施，但仅供你参考、考虑和调查。这份材料安全数据表为安全处理和使用本产品提供了指导方针；它没有也不能就所有可能的情况提出建议；因此，应该评估你对本产品的具体使用情况，以确定是否需要采取额外的预防措施。
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