编号 No.: DSP25091667-1

化学品安全技术说明书（MSDS）

申请人 Applicant	东莞市华中锂能科技有限公司 Dong guan Hua ZhongLithium Energy Technology Co., Ltd
申请人地址 Add. of Applicant	广东省东莞市长安镇乌沙兴一路 51 号 3 号楼 906 Room 906 Building 3 No.51 Wu Sha Xingyi Road Changan Town Dongguan City Guang dong Province
样品名称 Description	锂离子聚合物电池 Li-ion Polymer Battery
型号规格 Model/Type	TP 602025
标称电压 Nominal Voltage	3.7V
额定容量 Rated Capacity	250mAh
额定能量 Rated Energy	0.925Wh
制造厂 Manufacturer	唐河县丰隆电子科技有限公司 Tanghe Fenglong Electronic Technology Co., Ltd.
制造厂地址 Add. Of Manufacturer	河南省南阳市唐河县上屯镇丁岗街 4 号 NO.4 Ding gang Street Shang tun Town Tang he County Nanyang City Henan Province
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 66 版） IATA Dangerous Goods Regulation (66th) 国际海事组织《国际海运危险货物规则》（第 42-24 版） IMO International Maritime Dangerous Goods Code (42-24 edition)

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主检: Tested by:	李奕霖 King Li	审核: Checker:	张本斌 Ben Zhang	批准: Approver:	马芳琴 Ailis Ma

一. 样品信息 Sample information

样品名称 Sample Name	锂离子聚合物电池 Li-ion Polymer Battery	样品型号 Type	TP 602025
标称电压 Nominal voltage	3.7V	额定容量 Rated capacity	250mAh
样品外观 Shape	棱柱形 Prismatic		

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		锂离子聚合物电池 Li-ion Polymer Battery
制造商 Manufacturer	名称 Name	唐河县丰隆电子科技有限公司 Tanghe Fenglong Electronic Technology Co., Ltd.
	地址 Address	河南省南阳市唐河县上屯镇丁岗街 4 号 NO.4 Ding gang Street Shang tun Town Tang he County Nanyang City Henan Province
	电话号码 Telephone number	+86-13823658636
	应急咨询电话 Emergency telephone number	+86-13823658636
	电子邮件 E-mail address	743421201@qq.com

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
Lithium nickel cobalt manganese oxide 镍钴锰酸锂	37	182442-95-1
Polyvinylidene fluoride resin 聚偏氟乙烯树脂	1%	24937-79-9
Graphite 石墨	24%	7782-42-5
Styrene-butadiene rubber 丁苯橡胶	1%	9003-55-8
Lithium hexafluorophosphate 六氟磷酸锂	2.5%	21324-40-3

Ethylene carbonate 碳酸乙烯酯	4.5%	96-49-1
Dimelene carbonate 碳酸二甲酯	4.5%	616-38-6
Carbonate methy ethyl 碳酸甲乙酯	4.5%	623-53-0
Copper foil 铜箔	7%	7740-50-8
Aluminum foil 铝箔	5.5%	7429-90-5
Nickel 镍	3%	7440-02-0
Polyethylene 聚乙烯	4.5%	9002-88-4
其它/Others	1%	/

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

适当的灭火剂 Suitable Extinguishing Media：可用水幕和普通泡沫灭火剂灭火。Suitable: Water spray or regular foam.

化学品产生的具体危险 Specific Hazards Arising from the Chemical：燃烧可能产生刺激性、腐蚀性和或毒性气体。烟雾可能导致头晕或窒息。May decompose upon combustion to generate irritating, corrosive or toxic fumes. Fumes may cause dizziness or suffocation.

消防人员的特别防护行动 Special Protective Action for Fire-fighters：消防员应戴自给正压式呼吸器，穿消

防护服以防止皮肤和眼里接触。在上风处灭火。不相关人员疏散至安全区域；Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Fire-extinguishing work is done from the windward. Uninvolved persons should evacuate to a safe place.

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

棱柱形 Prismatic

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

包装说明 (Packing Instruction):	PI965 IB	PI966 II	PI967 II
运输专用名称 Proper Shipping Name/ Description	锂离子电池 Lithium ion batteries	锂离子电池与设备包装在一起 Lithium ion batteries packed with equipment	锂离子电池安装在设备中 Lithium ion batteries contained in equipment
运输标签(Hazard Label)	锂电池或钠电池标签 Lithium or sodium battery label		
危险性类别(Hazard Class):	9	-	-
UN 编号(UN Number):	UN3480	UN3481	UN3481
包装等级(Packing Group):	-	-	-
海洋污染物(Marine pollutant):	NO	NO	NO

空运 IATA DGR (66th)

可以根据国际民用航空组织(ICAO)，TI 或国际航空运输协会(IATA)DGR 第 66 版本说明第 PI965 IB、PI966 II 和 PI967 II 进行空运。

Can be carried out in accordance with the ICAO, TI, or IATA DGR(66th) Packing Instructions Section IB 965 or Section II 966 or Section II 967 Air transportation.

海运 IMDG (2024 Edition)

根据特殊规定 188，该电池不受 IMDG Code 2024 版(Amdt 42-24)限制。

The batteries are not restricted to IMDG Code 2024 Edition (Amdt 42-24)according to special provision 188.

铁路 RID (2025 Edition)

可按 RID (2025 版)《国际危险货物铁路运输欧洲协定》相关规定进行包装铁路运输。

Packaging for railway transportation can be carried out in accordance with the relevant provisions of the RID (2025 edition) European Agreement concerning the International Carriage of Dangerous Goods by Rail.

陆运 ADR (2025 Edition)

可按 ADR (2025 版)《国际危险货物道路运输欧洲协定》相关规定进行包装道路运输。

Packaging road transportation can be carried out in accordance with the relevant provisions of the ADR (2025 version) European Agreement concerning the International Carriage of Dangerous Goods by Road.

备注 (Remark)	1. 锂离子电池芯和电池必须在荷电状态（SoC）不超过其额定容量的 30%状态下进行运输。锂离子电池芯和电池进行 PI967 运输时，设备指示电池容量不超过 25%。 Lithium-ion cells and batteries must be transported in a state of charge (SoC) not exceeding 30% of their rated capacity.When transporting lithium-ion battery cells and batteries for PI967, the device indicates that the battery capacity should not exceed 25%. 2. 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和将其完全封闭的内包装中，再放入外包装。 The battery must be protected against short circuits, including preventing contact with conductive materials that may cause short circuits within the same packaging and completely enclosing it in the inner packaging before placing it in the outer packaging.

	3. 锂离子电池芯和电池的制造商和生产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。 Manufacturers and subsequent distributors of cells and 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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The data/information contained herein has been reviewed and approved for general release on the basis that this document contains no export controlled information.

***** The end *****