

MSDS 报告

MSDS Report

Prepared For : 申请商:	Jiangxi Hualiyuan Lithium Energy Co., Ltd 江西华立源锂能科技股份有限公司
Address: 地址:	No, Development Avenue, Jizhou Industrial Park, Ji'an City, Jiangxi Province 江西省吉安市吉州工业园区发展大道 1 号
Product Name: 产品名称:	Li-ion Cell 锂离子电池
Model : 型号:	HLY 18650
Nominal Voltage: 额定电压:	3.7V
Rated Capacity: 额定容量:	2000mAh, 7.4Wh
Weight: 重量:	44.0g
Dimension : 尺寸:	64.9mm×18.3mm (T×D)
Prepared By : 编制单位:	Shenzhen TCT Testing Technology Co., Ltd. 深圳市通测检测技术有限公司 1F, Building 1, Yibaolai Industrial Park, Qiaotou Village, Fuyong Town, Baoan District, Shenzhen, Guangdong, China 广东省深圳市宝安区福永桥头亿宝来工业城 1 栋 1 楼
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Date 日期: 2016. 04. 25



Material Safety Data Sheet 化学品安全技术说明书

Section 1- Chemical Product & Company Identification 第一部分 化学品及企业标识	
Product Name: 产品名称:	Li-ion Cell 锂离子电芯
Manufacture: 制造商:	Jiangxi Hualiyuan Lithium Energy Co., Ltd 江西华立源锂能科技股份有限公司
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Item Code: 项目号:	TCT160406M012

Section 2- Hazards Identification 第二部分 危险性概述	
hazard categories 危险性类别	Not dangerous with normal use. Do not dismantle, open or shred, Li-ion Cell the ingredients contained within or their ingredients could be harmful. 正常使用时无危险。不能拆除、打开、分解。锂离子电芯中包含的成分或其它成分可能是有害的
Appearance, Color, Odor 外观、颜色、气味	Solid object with no odor, no color. 固体、无气味、无颜色。
Primary Route(s) of Exposure 侵入途径	These chemicals are contained in a sealed stainless steel enclosure. Risk of exposure occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, exposure to the electrolyte solution contained within can occur by Inhalation, Ingestion, Eye contact and Skin contact. 这些化学物品被包含在一个密封的不锈钢外壳内。如果电芯的外壳受到的机械、热、或电滥用到达一定程度，会发生化学物质暴露的风险。如果发生这种情况，那暴露的电解液可能导致吸入，摄取，眼睛接触和皮肤接触的伤害。

<p>Potential Health Effects 健康危害</p>	<p>ACUTE (short term): See Section 8 for exposure controls In the event that this battery has been ruptured, the electrolyte solution contained within the battery would be corrosive and can cause burns. 急性中毒: 见第 8 部分接触控制, 如果这个电池已经破裂, 电解液中包含的成分将会腐蚀, 会造成烧伤。</p> <p>Inhalation: Inhalation of materials from a sealed battery is not an expected route of exposure. Vapors or mists from a ruptured battery may cause respiratory irritation. 吸入: 吸入一个密封电池的材料不是一个预期的接触途径。破裂电池的蒸气或薄雾可能导致呼吸道刺激。</p> <p>Ingestion: Swallowing of materials from a sealed battery is not an expected route of exposure. Swallowing the contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract. 摄入: 吞咽一个密封电池的材料不是一个预期的接触途径。吞咽裂开的电池成分会导致口、食道、胃肠道严重的化学烧伤。</p> <p>Skin: Contact between the battery and skin will not cause any harm. Skin contact with contents of an open battery can cause severe irritation or burns to the skin. 皮肤: 电池与皮肤接触不会造成任何伤害。皮肤与裂开的电池成分接触可能会导致严重的刺激或烧伤皮肤。</p> <p>Eye: Contact between the battery and the eye will not cause any harm. Eye contact with contents of an open battery can cause severe irritation or burns to the eye. 眼睛: 电池与眼睛之间的接触不会造成任何伤害。眼睛与裂开的电池成分接触可能会导致严重的刺激或烧伤眼睛。</p> <p>NIC (long term): see Section 11 for additional toxicological data. 慢性中毒: 见第 11 部分附加的毒理学资料</p>
<p>Reported as carcinogen 致癌物质</p>	<p>Not applicable 不可用</p>

Section 3- Composition/Information on Ingredients

第三部分 成分/组成信息

Chemical Name 化学名称	Concentration or concentration ranges (%) 浓度或浓度范围(%)	CAS Number CAS 号(化学文摘索引登记号)
Lithium Cobalt Oxide 钴酸锂	15-40	12190-79-3
Graphite 石墨	10-30	7782-42-5
Phosphate(1-), hexafluoro-, lithium 六氟磷酸锂	10-30	21324-40-3
Copper 铜	7-13	7440-50-8
Aluminum foil 铝箔	5-10	7429-90-5
Nickel 镍	1-5	7440-02-0
PVC 聚氯乙烯	1-2	9002-86-2

Labeling according to EC directives.

标签根据 EC 指令。

No symbol and risk phrase are required.

不需要象形符号和风险短语。

Note: CAS number is Chemical Abstract Service Registry Number.

注意: CAS 号 是化学文摘服务注册号码。

N/A=Not apply.

N / A =不适用。

Section 4- First Aid Measures**第四部分 急救措施**

Inhalation 吸入	If contents of an opened battery are inhaled, remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid. 如果吸入裂开电池的成分, 去除被污染的衣服, 用大量的水冲洗皮肤或淋浴 15 分钟, 并立即就医。
Skin contact 皮肤接触	If skin contact with contents of an open battery occurs, as quickly as possible remove contaminated clothing, shoes and leather goods. Immediately flush with lukewarm, gently flowing water for at least 30 minutes. If irritation or pain persists, seek medical attention. Completely decontaminate clothing, shoes and leather goods before reuse or discard. 如果皮肤与裂开的电池成分接触, 立即除去被污染的衣物、鞋和皮革制品, 立刻用流动的水慢慢冲洗至少 30 分钟。如果刺激或疼痛持续, 注意立刻就医。衣物、鞋和皮革制品请完全净化再使用, 或直接丢弃。
Eye contact 眼睛接触	If eye contact with contents of an open battery occurs, immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes while holding the eyelids open. Normal saline solution may be used as soon as it is available. If necessary, continue flushing during transport to emergency care facility. Take care not to rinse contaminated water into the unaffected eye or onto face. Quickly transport victim to an emergency care facility. 如果眼睛与裂开的电池成分接触, 立即先用流动的清水慢慢的冲洗污染的眼睛至少 30 分钟, 并保持眼睑打开, 并立即使用生理盐水。如必要, 在急救护理设施途中继续冲洗。注意不要让受污染的水进入不受影响的眼睛或脸, 并快速运输受害者到急救护理设施。
Ingestion 摄入	If ingestion of contents of an open battery occurs, never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. Do not induce vomiting. Have victim drink 60 to 240 mL (2-8 oz.) of water. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Have victim rinse mouth with water again. Quickly transport victim to an emergency care facility. 如果摄入裂开的电池成分, 若受害者立即失去意识, 或者是无意识的抽搐, 不要给其口服任何东西。让受害者用清水彻底漱口。不要诱导其呕吐, 受害者需喝 60 至 240 毫升 (2 - 8 盎司) 的水。若自然发生呕吐时, 受害者有减少摄入的风险, 然后让受害者继续用清水漱口, 并立即运输受害者到急救护理设施。

Section 5- Fire Fighting Measures**第五部分 消防措施**

Flammable Properties 易燃性能	In the event that this battery has been ruptured, the electrolyte solution contain within the battery would be flammable. Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of flammable or corrosive materials. 如果这个电池已经破裂, 电池中的电解液含有易燃物。像任何密封的容器, 当暴露在过热的时候, 电池芯可能会破裂, 这可能导致释放易燃或腐蚀性材料。
Suitable extinguishing Media 合适的灭火介质	Use extinguishing media suitable for the materials that are burning. 使用适合灭火燃烧的材料

Unsuitable extinguishing Media 不适合的灭火介质	Not available 不适用
Explosion Data 爆炸数据	Sensitivity to Mechanical Impact: This may result in rupture in extreme cases ; Sensitivity to Static Discharge: Not Applicable 机械冲击敏感性: 在极端情况下可能导致破裂 静电放电敏感性: 不适用
Specific Hazards arising from the chemical 具体的化学危害	Fires involving Li-ion Cell can be controlled with water. When water is used, however, hydrogen gas may evolve. In a confined space, hydrogen gas can form an explosive mixture. In this situation, smothering agents are recommended to extinguish the fire. 控制火灾涉及锂离子电芯 可以用水控制。当使用水, 然而会有氢气产生。在一个有限的空间, 氢气能形成爆炸性混合物。在这种情况下, 建议用灭火剂灭火。
Protective Equipment and precautions for firefighters 设备的防护及消防措施	As for any fire, evacuate the area and fight the fire from a safe distance. Wear a pressure-demand, self-contained breathing apparatus and full protective gear. Fight fire from a protected location or a safe distance. Use NIOSH/MSHA approved full-face self-contained breathing apparatus (SCBA) with full protective gear. 对于任何火灾、疏散区和救火需保持一个安全的距离。穿防护服、自给式呼吸器和防护装备。灭火需保持一个受保护的位置或一个安全的距离。使用通过 NIOSH/MSHA 认证的正面的自给式呼吸器完整的防护装备。
NFPA 美国国家防火协会	Health: 0 Flammability: 0 Instability: 0 健康:0 可燃性:0 不稳定:0

Section 6- Accidental Release Measures

第六部分 泄露应急处理

Personal Precautions, protective equipment, and emergency procedures 个人预防措施、防护装备和应急程序	Restrict access to area until completion of clean-up. Do not touch the spilled material. Wear adequate personal protective equipment as indicated in Section 8. 限制区域, 直到完成清理工作。请勿触摸泄漏的材料。穿戴适当的个人防护设备, 如第 8 部分所示
Environmental Precautions 环境保护措施	Prevent material from contaminating soil and from entering sewers or waterways. 防止物质污染土壤和进入下水道或水道。
Methods and materials for Containment 方法和材料控制	Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean up spills immediately. 出于安全, 阻止泄漏, 可以用干砂或沙土来遏制液体泄露, 立即清理泄漏。
Methods and materials for cleaning up 清理的方法和材料	Absorb spilled material with an inert absorbent (dry sand or earth). Scoop contaminated absorbent into an acceptable waste container. Collect all contaminated absorbent and dispose of according to directions in Section 13. Scrub the area with detergent and water; collect all contaminated wash water for proper disposal. 用惰性吸收剂(干砂或沙土)吸收溢出的材料。污染物

转移到可吸收废物的容器。收集所有受污染的吸收剂和根据第 13 部分的指令处置。用洗涤剂和水清洁污染区域, 收集所有受污染的洗涤水进行适当处置。

Section 7- Handling and Storage

第七部分 操作处置与储存

Handling 操作

The battery should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container.
禁止打开、毁坏或焚烧电池, 因为电池有可能在这些处理过程中发生爆炸、破裂或泄露等事故。
Do not short circuit terminals, or over charge the battery, forced over-discharge, throw to fire.
禁止将电池短路、过充、强制放电或扔入火中。
Do not crush or puncture the battery, or immerse in liquids.
禁止挤压刺穿电池或将电池浸入溶液中。

Storage 储存

Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided.
禁止物理或电滥用, 禁止高温储存, 最好将电池储存在阴凉、干燥、通风及温度变化较小的环境中。
Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.
禁止将电池接触加热设备或将电池直接暴露与阳光中。
The voltage for a long time storage shall be 3.7V~4.2V range.
长时间存储的电压应 3.7V~4.2V 的范围内。

Other Precautions 其他要注意的防范措施

The battery may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures.
拆解、挤压、直接放入火中或高温条件下, 电池可能发生爆炸和燃烧。
Do not short or install with incorrect polarity.
禁止短接或将电池正负极错误的安装在设备中。

Section 8 - Exposure Controls/Personal Protection

第八部分 接触控制和个体防护

Engineering Controls 工程控制

Use local exhaust ventilation or other engineering controls to control sources of dust, mist, fumes and vapor.
在工程方面, 需要有抽气通风设备。控制灰尘、雾、烟雾和蒸气的来源。
Keep away from heat and open flame. Store in a cool, dry place.
远离高温、明火。储存在阴凉干燥的地方。

Personal Protective Equipment 个人防护设备	Respiratory Protection: Not necessary under normal conditions. 呼吸保护: 在正常情况下不需要。 Skin and body Protection: Not necessary under normal conditions, Wear suitable protective clothing and gloves if handling an open or leaking battery. 皮肤及身体防护: 在正常情况下不需要, 如果处理一个裂开的或泄漏的电池需要穿戴适当的防护服和手套。 Hand protection: Wear suitable gloves if handling an open or leaking battery. 手保护: 如果处理一个裂开的或泄漏的电池需要戴适当手套。 Eye Protection: Not necessary under normal conditions, Wear safety glasses if handling an open or leaking battery. 眼睛保护: 在正常情况下不需要, 如果处理一个裂开的或泄漏的电池需要戴上安全眼镜。
Other Protective Equipment 其他防护设备	Have a safety shower and eye wash fountain readily available in the immediate work area. 在工作区域应该有一个立即可以使用的安全淋浴和喷水洗眼器。
Hygiene Measures 卫生措施	Do not eat, drink, or smoke in work area. Maintain good housekeeping. 在工作区域不得进食, 饮水或吸烟。

Section 9- Physical and Chemical Properties

第九部分 理化特性

Physical State 物理状态	Form: Solid 形态: 固体
	Color: Purple 颜色: 紫色
	Odour: Odorless 气味: 无气味
Change in condition 变化的条件:	
pH, with indication of the concentration pH 值, 指示的浓度	Not applicable 不适用
Melting point/freezing point 熔点/凝固点	Not available. 不适用
Boiling Point, initial boiling point and Boiling range: 沸点、初沸点、沸点范围:	Not available. 不适用
Flash Point 闪点	Not available. 不适用
Upper/lower flammability or explosive limits 自燃或爆炸的上、下极限:	Not available. 不适用
Vapor Pressure: 蒸汽压:	Not applicable 不适用

Vapor Density: (Air = 1) 蒸汽密度(空气= 1)	Not applicable 不适用
Density/relative density 密度/相对密度	Not available. 不适用
Solubility in Water: 水溶性:	Insoluble 不可溶解的
n-octanol/water partition coefficient 正辛醇/水分配系数	Not available. 不适用
Auto-ignition temperature 自燃温度	130°C
Decomposition temperature 分解温度	Not available. 不适用
Odour threshold 嗅阈	Not available. 不适用
Evaporation rate 蒸发率	Not available. 不适用
Flammability (soil, gas) 易燃性(土壤、天然气)	Not available. 不适用
Viscosity 粘性	Not applicable 不适用

Section 10 – Stability and Reactivity 第十部分 稳定性和反应性

Stability 稳定性	The product is stable under normal conditions. 产品在正常条件下稳定。
Conditions to Avoid (e.g. static discharge, shock or vibration) 避免条件(如静电放电, 冲击或振动)	Do not subject Li-ion Cell to mechanical shock. 锂离子电芯 不能受到机械冲击。 Vibration encountered during transportation does not cause leakage, fire or explosion. 在运输期间的振动不能导致漏液, 起火或爆炸。 Do not disassemble, crush, short or install with incorrect polarity. Avoid mechanical or electrical abuse. 不能拆开, 碾碎, 短路或错误的极性安装。机械或电力损伤。
Incompatible Materials 不兼容的材料	Not Available 不可用
Hazardous Decomposition Products 有害的分解物	This material may release toxic fumes if burned or exposed to fire 如果焚烧或暴露于火中, 这种材料会释放有毒气体。
Possibility of Hazardous Reaction 危险反应的可能性	Not Available 不可用

Section 11 – Toxicological Information

第十一部分 毒理学信息

Irritation 刺激	Risk of irritation occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, irritation to the skin, eyes and respiratory tract may occur. 如果电芯的外壳受到的机械、热或电滥用到达一定程度，会发生刺激的风险。如果发生这种情况，可能会刺激皮肤、眼睛和呼吸道。
Sensitization 致敏	Not Available 无适用
Neurological Effects 影响神经系统	Not Available 无适用
Teratogenicity 致畸	Not Available 无适用
Reproductive Toxicity 再生毒性	Not Available 无适用
Mutagenicity (Genetic Effects) 诱变(遗传效应)	Not Available 无适用
Toxicologically Synergistic Materials 协同材料毒理学	Not Available 无适用

Section 12-Ecological Information

第十二部分 生态学信息

General note: 通用信息:	Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. 不允许未稀释或大量的产品到达地下水、水道或污水系统。
Anticipated behavior of a chemical product in environment/possible environmental impact/ ecotoxicity 化学产品在环境/可能的环境预期的行为的一种生态毒性	Not Available 不适用
Mobility in soil 在土壤中的流动	Not Available 不适用
Persistence and Degradability 持久性和分解性	Not Available 不适用
Bioaccumulation potential 生物聚积	Not Available 不适用

Other Adverse Effects 其他不利影响	Not Available 不适用
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Section 13 – Disposal Considerations 第十三部分 废弃处置	
Product disposal recommendation 产品处理建议	Observe local, state and federal laws and regulations. 遵守当地、州和联邦法律和法规。
Packaging disposal recommendation 包装处理建议	<p>Be aware discarded batteries may cause fire, tape the battery terminals to insulate them. Don't disassembly the battery. Completely discharge containers may be recycled or re-used. Observe local, state and federal laws and regulations. 注意废弃电池可能引起火灾,用胶带固定电池的端子并隔离它们。不要拆卸电池。完全放电的电池可以被回收或重用,并遵守当地、州和联邦法律和法规。</p> <p>The potential effects on the environment and human health of the substances used in batteries and accumulators, the desirability of disposing of waste batteries and accumulators as unsorted municipal waste and of participating in their separate collection so as to facilitate treatment and recycling. 废旧的电池和蓄电池的材料会对环境和人体健康有潜在的影响,废旧的电池和蓄电池作为未分类的城市垃圾有意向得到解决,将参与城市的分类收集,以便处理和回收。</p>

Section 14 – Transport Information 第十四部分 运输信息	
UN number 联合国货物编号 (UN 编号)	3480
UN Proper shipping name 联合国运输专用名称	Lithium ion Batteries (limited to a maximum of 30% SoC) ; 锂离子电池(荷电状态不得超过其额定容量的 30%);
Transport hazard class(es) 运输风险级别	9
Packing group 包装类别	-
Marine pollutant (Yes/No) 海洋污染物(是/否)	No
Transport in bulk (According to Annex II of MARPOL 73/78 and the IBC Code) 散装运输(根据防污公约 73/78 的附件 II 和国际散化规则代码)	No information available. 无适用信息。

Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises.

用户需注意或遵守在他们的住所室内或室外的运输或传送的特殊预防措施。

Transport information: The transportation of primary lithium cells and batteries is regulated by the International Air Transport Association (According to Section II/Section IB of PACKING INSTRUCTION 965 of IATA DGR 57th Edition for transportation), International Civil Aviation Organization, International Maritime Dangerous Goods Code and the US Department of Transportation.

运输信息: 一次性锂电池和电池芯的运输是由国际航空运输协会(根据国际航空运输协会 DGR 第 57 版运输 Section II/Section IB 包装说明 965), 国际民航组织、国际危险货物海运规则和美国交通部制定。

The batteries must meet the following criteria for shipment:

出货的电池必须符合以下准则:

Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185.

需满足美国交通部列出的 49 CFR 173.185 中的要求

The transport of primary lithium batteries is prohibited aboard passenger aircraft.

禁止用客机运输一次性锂电池。

Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule) Lithium batteries shipped as may not be classified as "Dangerous Goods" when shipped in accordance with "IATA-DGR" or "special provision 188 of IMO-IMDG Code".

查阅联邦公报 2004 年 12 月 15 日(危险物品; 禁止用客机运输一次性锂电池和锂电芯;最终条例) 锂电池运输不能被归类为“危险物品”, 出货按照“IATA-DGR”或“IMO-IMDG 代码特殊条款 188”。

Per IATA "Lithium Batteries as Cargo in 2016 Update III": Lithium ion cells and batteries (UN 3480) must be offered for transport at a state of charge (SoC) not exceeding 30% of their rated design capacity. And they are forbidden for transport as cargo on a passenger aircraft. All packages must bear the Cargo Aircraft Only label in addition to the other marks and labels required by the Regulations.

根据国际航空运输协会 2016 年锂电池航空货物运输变更规定: 按 UN3480 运输的锂离子电芯和电芯其荷电状态 (SoC) 不超过设计额定容量的 30%。并且不得配载客机。且货物必须黏贴“仅限货机” (CARGO AIRCRAFT ONLY) 标签。

Separate batteries when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport.

电池在单独运输时, 应包装牢固, 防止短路。

More information concerning shipping, testing, marking and packaging can be obtained from label master at <http://www.labelmaster.com/>.

更多关于航运、测试、标记和包装的信息可以从 <http://www.labelmaster.com/> 获得。

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

运输方式: 空运, 海运, 铁路, 公路。

Section 15 – Regulatory Information
第十五部分 法规信息*OSHA hazard communication standard (29 CFR 1910.1200)*

OSHA 危害通信标准 (29 CFR 1910.1200)

☐ Hazardous 危险品☒ Non-hazardous 非危险品**Section 16 – Additional Information**
第十六部分 其他信息

The information above is believed to be accurate and represents the best information currently available to us. However, TCT makes no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. This material safety data sheet provides guidelines for the safe handling and use of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required.

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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.

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*******End of report*******
*******报告结束*******

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