



SHENZHEN CHUANGKEHUI TECHNOLOGY CO.,LTD.
ADD: 2 FLOOR, C1 BUILDING, JIN DI DA TECHNOLOGY PARK,NO.53 ,LAND
KOU INDUSTRIAL PARK, LONGHUA DISTRICT, SHENZHEN, CHINA
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Material Safety Data Sheet

Product Name	Li-ion Cell
Model	18650
Nominal Voltage	3.7V
Typical Capacity	2000MAH
Chemical System:	Lithium Cobalt Oxide

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION 化学品及企业标识

Product name: Li-ion Cell

样品名称: 锂离子电芯

Company name: Shenzhen ChuangKeHui Technology. Co., Ltd.

制造商名称: 深圳市创科慧科技有限公司

Address: 2F,C1Building,Jin Di Da Science and Technology Park ,,LongHua District,Shenzhen China

制造商地址: 深圳市龙华区大浪街道浪口社区浪口工业园80号202金地大科技园C1栋2楼

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2. COMPOSITION/INFORMATION ON INGREDIENTS 成分/组成信息

Chemical name 化学名称	Concentration/Concentration range% 浓度或浓度范围%	CAS Number CAS 号	Molecular Formula 化学结构
Lithium Cobalt Oxide 钴酸锂	10-40	12190-79-3	
Graphite 石墨	10-30	7782-42-5	C
Phosphate(1-), hexafluoro-, lithium 六氟磷酸锂	10-30	21324-40-3	
Aluminum Foil 铝箔	5-10	7429-90-5	Al
Copper 铜	7-13	7440-50-8	Cu
Nickel 镍	1-5	7440-02-0	Ni
PVC(Chloroethylene, pplymer) 聚氯乙烯	1-5	9002-86-2	

Labeling according to EC directives. No symbol and Hazard phrase are required.

标签根据 EC 指令。不需要象形符号和危险短语。

3. HAZARDS IDENTIFICATION 危险性概述

Classification of Danger: See section 14

危险性类别: 见14部分

Information pertaining to particular dangers for man and environment:

有关人类和环境特殊危险的信息

A sealed lithium cell is not hazardous in normal use on principle.

密封的锂电池在按照说明书正确使用不会产生危害。

In case of abuse, there's Hazard of rupture, fire, heat, leakage of internal components, which could cause casualty loss.

Abuses including but not limited to the following cases: charged for long time, short circuited, put into fire, whacked



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with hard object, punctured with acute object, crushed, and broken.

使用不当的情况下，有破裂、起火、发烫、内部成分泄露的危险，并可能造成意外损失。使用不当的行为包括但不限于下列情况：长时间充电、短路、投入火中、硬物撞击、尖物刺破、破碎、和破裂。

4.FIRST AID MEASURES急救措施

General information: If exposure to internal materials within battery due to damaged outer casing, the following actions are recommended.

概述：如因外壳损坏而暴露电池内部材料，建议采取以下措施。

After inhalation: Remove from exposure and move to fresh air and to be sure call for a doctor. In case of unconsciousness place patient stably in side position for transportation.

吸入：立即将患者移至空气清新处并立即就医。在昏迷的情况下，将患者以侧位稳定以便运输。

After skin contact: Immediately wash with water and soap and rinse thoroughly for 15 minutes, and remove contaminated clothes. Get medical aid.

皮肤接触：立即用肥皂和水完全清洗至少15分钟，同时除去污染的衣物和鞋子，

After eye contact: Rinse opened eye at least 15 minutes under running water. Then consult a doctor.

眼睛接触：张开眼睛立即用大量的水清洗至少15分钟，并立即就医。

After swallowing: Drink copious amounts of water and provide fresh air. Immediately call a doctor.

食入：饮用大量的水并移动至空气新鲜处，并立即就医。

5.FIRE FIGHTING MEASURES消防措施

Characteristics of Hazard: Dusts at sufficient concentrations can form explosive mixtures with air. Combustion generates toxic fumes.

危险特性：高密度粉尘遇空气会形成爆炸性混合物。燃烧生成有毒烟雾。

Hazardous Combustion Products: carbon dioxide.

燃烧产生的危险品：二氧化碳

Extinguishing Media: Water, carbon dioxide gas, chemical power fire extinguishing medium and fire foam..

灭火介质：水、二氧化碳气体、化学电源灭火介质和泡沫灭火剂。

Basic Fighting Procedures: Wear NIOSH/MSHA approved positive pressure self contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

基本操作程序：佩戴NIOSH/MSHA批准的正压自给式呼吸器和防护服，防止与皮肤和眼睛接触。

Unusual Fire&Explosion Hazards: This material does not represent an unusual fire or explosion hazard.

异常火灾和爆炸危险：本材料不会产生异常火灾或爆炸危险。

6.ACCIDENTAL RELEASE MEASURES 泄露应急处理

Person-related safety precautions: Wear protective equipment. Keep unprotected persons away. In case of rupture. Attention! Corrosive material. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Refer to protective measures listed in sections 7 and 8.

人身安全注意事项：穿戴防护用品。让未受保护的人远离。万一破裂。注意！腐蚀性物质。避免接触皮肤，眼睛 或衣服。确保空气流通。根据需要使用个人防护装备。将人员撤离到安全区域。让人们远离溢出/泄露处和处于逆风。参考第7和8部分中列出的防护措施。

Measures for environmental protection: Prevent from contaminating soil, Do not allow product to reach sewage



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system or any water course.

Inform respective authorities in case of seepage into water course or sewage system. Do not allow to enter sewers/surface or ground water.

环境保护措施：防止产品污染土壤。产品不得进入污水系统或任何水道，如有渗漏进入水道或下水道系统，应通知有关部门处理避免进入下水道/地表水或地下水。

Measures for cleaning/collecting: 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（干砂或泥土）吸收溢出的材料。污染物转移到可接受的废物容器中。收集所有受污染的吸收剂，按照第十三部分的说明进行处理。用洗涤剂和水清洁污染区域，收集所有受污染的洗涤水，妥善处理。

7. HANDLING AND STORAGE 操作处置与储存

a. Handling:操作

The battery may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

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。禁止短路或将电池正负极错误地安装在设备中。

b. Storage:储存

Store in a cool, dry, well-ventilated area away from incompatible substances. Store locked up. Keep out of the reach of children.

储存于阴凉，干燥，通风处，远离接触会发生反应的材料。储存锁定。放在儿童无法接触的地方。

C.Other Precautions: 其他注意防范措施

In case of reupture.Handle in accordance with good industrial hygiene and safety practice.Avoid contact with skin,eyes or clothing.Use personal protection equipment.

如有损坏，请按照良好的工业卫生和安全规程进行处理。避免接触皮肤、眼睛或衣服。使用个人防护设备。

8. EXPOSURE CONTROLS/PERSON PROTECTION 接触控制和个体防护

Engineering controls: Use adequate ventilation to keep airborne concentrations low, if used under conditions that generate particulates,the ACGIH TLV-TWA of 3mg/m³ respirable fraction(10mg/m³ total)should be observed.

工程控制：保证空气流通使空气密度保持在低水平。如果在会生成微粒的情况下使用，应仔细观察TLV-TWA3的吸入量（总量为10 mg/m³）。

Personal Protective Equipment: 个人防护设备

Eye/Face protection: Use good industrial practice to avoid eye contact, process of this product releases vapors or fumes which may cause eye irritation. Where eye contact may be likely wear chemical goggles and have eye flushing equipment available.

眼睛/面部保护：使用良好的工业惯例避免眼睛接触，本产品的释放过程中产生的蒸汽或烟雾可能会刺激眼睛。在可能接触眼睛的地方，戴上化学护目镜并备有洗眼设备。

Skin protection: Minimize skin contamination by following good industrial hygiene practices Wearing protective gloves is recommended Wash hands and contaminated skin thoroughly after handling.

皮肤防护：遵循良好的工业卫生规范，戴上防护手套，将皮肤污染降至最低，建议在处理后彻底洗手和清洗受污染的皮肤。



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Respiratory protection: Avoid breathing dust and processing vapors When adequate ventilation is not available wear a NIOSH/MSHA respirator approved for protection against inorganic dusts.

呼吸保护：当通风不充分时，避免吸入粉尘和处理蒸汽，NIOSH/MSHA防护口罩，用于防止无机粉尘。

9. PHYSICAL AND CHEMICAL PROPERTIES 理化特性

General information 一般信息		
Appearance: Cylindrical 形状: 圆柱形		
Color: Blue 颜色: 蓝色		
Odor: Without, if leaking, smells of medical ether 气味: 无, 如果泄露, 医用乙醚的气味。		
Change in condition 变化的条件		
Melting Point/Melting Range:	Not available 熔点/熔化范围: 不适用	
Boiling Point/Boiling Range:	Not available 沸点/沸点范围: 不适用	
Flash Point: 闪点	Not applicable unless indicidual components exposed。除非单个的组件暴露, 否则不适用	
Flammability:易燃度	Not applicable unless indicidual components exposed。除非单个的组件暴露, 否则不适用	
Danger of explosion: 爆炸危险	Not available 不适用	
Oxidizing properties: 氧化性能:	Not available 不适用	
Density: 密度	(Contd. on page 5)	
Relative density 相对密度	Not available 不适用	(Contd. of page 4)
Vapour density 蒸汽密度	Not available 不适用	
Evaporation rate 蒸发率	Not available 不适用	
Solubility in/Miscibility with Water: 水溶性	Not applicable unless indicidual components exposed。除非单个的组件暴露, 否 则不适用	
pH-value: 酸碱度	Not available 不适用	

10. STABILITY AND REACTIVITY 稳定性和反应性

Chemical Stability: Stable under recommended storage conditions

化学稳定性: 在推荐的储存条件下可以保持稳定。

Conditions to Avoid: Exposure to air moisture over prolonged periods.

应避免的条件: 暴露在空气中或长时间受潮。

Incompatible materials: Acids, Oxidizing agents, Bases

不相容材料: 酸, 氧化剂, 碱

Hazardous Decomposition Products: Carbon oxides

有危害分解物: 二氧化碳

11. ECOLOGICAL INFORMATION 生态信息

General note: Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

通用信息: 不允许未稀释或大量的产品接触地下水、水道或污水处理系统。

Anticipated behavior of a chemical product in environment/possible environmental



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impact/ecotoxicity: Not Available

化学产品在环境或可能的环境预期的行为的一种生态毒性：不适用

12. TOXICOLOGICAL PROPERTIES 毒理学信息

Irritation: In the event of exposure to internal contents, vapour fumes may be very irritating to the eyes and skin.

刺激：内部物质暴露的情况下，蒸汽烟雾可能对眼睛和皮肤的刺激性。

Sensitization: Not Available

过敏性：不适用

Reproductive Toxicity: Not Available

再生毒性：不适用

Toxicologically Synergistic Materials:

协同材料毒理性：不适用

13. DISPOSAL CONSIDERATIONS 废弃处置

Waste Treatment : Recycle or dispose of in accordance with government, state & local regulations.

废弃处置方法：建议遵照国家和地方法规处置或再利用。

Do not throw out a used cell. Recycle it through the recycling company.

不要扔掉用过的电池。通过回收公司回收。

Neither a container nor packing is contaminated during normal use. When internal materials leaked from a cell contaminates, dispose as industrial wastes subject to special control.

在正常使用过程中，容器和包装均未受到污染。当内部物质从电池中泄漏时污染，按特殊控制的工业废物处理。

14. TRANSPORT INFORMATION 运输信息

Un number of lithium battery: UN3480 or UN3481;

联合国货物编号（UN编号）：UN3480 or UN3481;

Proper shipping name : 运输专用名称

Lithium ion batteries (limited to a maximum of 30% SoC) or ,

锂离子电池（荷电状态下不得超过其额定容量的30%或；

Lithium ion batteries packed with equipment (including lithium ion polymer batteries) or;

与设备一起包装的锂离子电池（包括锂离子聚合物电池）或；

Lithium ion batteries contained in equipments (including lithium ion polymer batteries) or;

包含在设备中的锂离子电池（包括锂离子聚合物电池）

Label(s)/Placard Required :Miscellaneous Lithium batt

标签/铭牌要求：杂项锂电池

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.

无论是对内还是对外的运输或运输方式，用户都需要注意或遵守的特殊预防措施

ICAO / IATA: Can be shipped by air in accordance with International Civil Aviation Organization (ICAO),TI or



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International Air Transport Association (IATA), DGR Packing Instructions (PI) 965, PI 966, and PI 967 Section II appropriate of IATA DGR 63ST (2022 Edition) for transportation.

国际民间航空组织/国际航空运输协会: 货物可根据民用航空组织 (ICAO), TI 或 国际航空运输协会 (IATA), DGR 63ST (2022版本) 包装说明 (PI) 965, PI 966 和 PI 967 第 II 部分相关规定进行运输。

IMDG CODE: The batteries are not restricted to IMDG Code 2018 Edition (Amdt 39-18) according to special provision 188.

国际海运危险货物规则: 根据特殊规定 188, 该电池不受 IMDG Code 2018 版 (Amdt 39-18) 限制。

DOT: Other requirements for the US Department of Transportation (DOT) Subchapter C, Hazardous Materials Regulations if shipped in compliance with 49 CFR 173.185

美国运输部: 美国运输部 (DOT) 有害物质规则 C 分章中的其他规定, 运输符合要求 49 CFR 173.185

ADR/AND: The batteries are not subject to the provisions of United Nations Economic Commission for Europe (UNECE) ADR/AND if they meet the requirements of special provision 188 of Chapter 3.3, Applicable as from 1 January 2019.

欧洲国际陆运危险货物协定/关于内陆水道国际运输危险货物的欧洲协定: 自 2019 年 1 月 1 日起适用于联合国欧洲经济委员会 (UNECE) ADR/AND, 如果电池符合第 3.3 章第 188 条的特殊要求, 则电池不受限制。

In addition, to be permitted in transport each lithium cell and battery types must have passed the applicable tests set out in Subsection 38.3 of the UN Manual of Tests and Criteria.

此外, 每个锂电芯和电池类型都必须通过联合国《关于危险货物运输的建议书 试验和标准手册》第 38.3 节规定的适用测试。

The packaging shall be adequate to avoid mechanical damage during transport, handling and stacking. The materials and pack design shall be chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of moisture.

包装应足以避免材料在运输、搬运和堆放过程中的机械损伤, 包装设计应能防止意外导电的发展。端子腐蚀和湿气进入。

The package must be handled with care and that a flammability hazard exists if the package is damaged.

包装必须小心处理, 如果包装损坏, 则存在易燃性危险。

Each package must be labeled with a Li-ion polymer battery handling label or in addition to the Class 9 hazard label. 每个包装上必须贴上锂离子聚合物电池处理标签或 9 级危险标签。

15. REGULATORY INFORMATION 法规信息

Dangerous Goods Regulations

《危险物品规则》

Recommendations on the Transport of Dangerous Goods-Model Regulations (20th revised edition)

联合国《关于危险货物运输的建议书 规章范本》(20th 修订版)

Recommendations on the Transport of Dangerous Goods-Manual of Tests and Criteria

联合国《关于危险货物运输的建议书 试验和标准手册》

International Air Transport Association (IATA)

《国际航空运输协会》(IATA)

International Maritime Dangerous Goods (IMDG Code 2018 Edition Amdt 39-18)

《国际海运危险货物规则》(IMDG Code 2018 版 Amdt 39-18)

Technical Instructions for the Safe Transport of Dangerous Goods



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《危险货物安全运输技术指南》

Classification and code of dangerous goods(GB 6944-2012)

《危险货物分类和品名编号》-GB 6944-2012

2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

2012 《职业安全与健康标准》 危险通信标准(29 CFR 1910.1200)

Toxic Substance Control Act (TSCA)

《有毒物质控制法》 (TSCA)

Code of Federal Regulations

《联邦条例》

In accordance with all Federal, State and local laws

符合所有联邦、州、和地方法律。

16. OTHER INFORMATION 其他信息

MSDS creation date : 2022 Version: 1.0

CHUANGKEHUI TECHNOLOGY CO., LTD. believes that information contained in this material safety data sheet (including data and statements) is accurate as of the date first mentioned. The information provided in each data sheet relates only to the specific product designated CKH and is not valid for any other product manufactured by CKH or any other product manufactured by any other party. It should be clearly understood that, the material safety data sheet may not be valid where such CKH product is used in combination with any other materials of in any process. As the conditions and methods of use of the product and information referred to in such data sheet are beyond the control of CKH, the material safety data sheet is provided for your consideration, investigation and verification.

我认为，本材料安全数据表（包括数据和报表）中所含信息在第一次提及的日期是准确的。每个数据表中提供的信息仅与指定CKH的特定产品有关，对于CKH制造的任何其他产品或任何其他方制造的任何其他产品无效。如果CKH产品与任何其他材料结合使用，则材料安全数据表可能无效。由于CKH无法控制产品的使用条件和方法以及数据表中提及的信息，因此提供了材料安全数据表供您考虑、调查和验证。

The information contained in this material safety data sheet herein is provided free of charge and on the understanding that those using it will fully satisfy themselves that their particular conditions of use or operation present no health or safety hazards. CKH expressly disclaims any and all loss, damage, liability of expense arising out of or in any way connected with any use of the product or such information. No statement made shall be construed as a permission or recommendation for the use of any product in a manner that might infringe existing patents.

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End of report