MSDS Report

Prepared For : 申请商：	SHENZHEN PKCELL BATTERY CO., LTD. 深圳市比苛电池有限公司 7th Floor, block B, Yicheng Huanzhi center, Renmin Road, Longhua District, Shenzhen, China. 深圳市龙华区人民路壹成环智中心 B 座 7 楼
Product Name: 产品名称：	LITHIUM BATTERY 锂电池
Model 型号:	CR2032
Nominal Voltage: 标称电压	3.0V
Typical Capacity: 典型容量:	210mAh
Lithium content: 锂含量	0.063g
Weight 重量:	2.8g
Dimension 尺寸 :	Φ20.0mm×3.2mm (D×H)
Prepared By : 编制单位：	Shenzhen NCT Testing Technology Co., Ltd. 深圳诺测检测技术有限公司 2A, 2/F., Building C and 1/F., Building B, Mianshang Younger Pioneer Park, Hangcheng Road, Gushu, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China 广东省深圳市宝安区西乡街道固戍航城大道绵商青年创业园 B 栋第 1 层、 C 栋 2 层 2A
Report No. 报告编号:	NCT210471248XM1-1

Written by 编写: Misty Zeng

Approved by 批准: [signature]

Inspected by 审核: Hely Wang

Date 日期: 2022. 01. 01

Shenzhen NCT Testing Technology Co., Ltd. 2008

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: LITHIUM BATTERY

产品名称：锂电池

Manufacture: SHENZHEN PKCELL BATTERY CO., LTD.

制造商：深圳市比苛电池有限公司

Address: 7th Floor, block B, Yicheng Huanzhi center, Renmin Road, Longhua District, Shenzhen, China.

地址：深圳市龙华区人民路壹成环智中心 B 座 7 楼

Contact Person 联系人: Mr. Nie

Tel 电话: +86-13727580105

Fax 传真: +86-755-86670609

Emergency Tel 应急电话: +86-13727580105

E-mail 邮箱: 3004814533@qq.com

Item Code 项目号: NCT210471248XM1-1

Section 2- Hazards Identification

第二部分 危险性概述

Hazard Description 危险性描述	Not dangerous with normal use. Do not dismantle, open or shred the battery ingredients contained within or their ingredients products could be harmful. 正常使用没有危险，不能拆解、打开或分解电池，里面的材料或成分是有害的。
Primary Route(s) of Exposure 接触途径	Inhalation, Ingestion, Skin contact and Eye contact. 吸入、食入、皮肤接触、眼睛接触。

Potential Health Effects **潜在健康影响**	**Inhalation:** Vapors or mists from a ruptured battery may cause respiratory irritation. **吸入：** 破裂的电池散发出来的气雾会引起呼吸道刺激。 **Ingestion:** The battery ingredients contained within or their ingredients products can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract. **食入：** 电池的组成成分或原料可以导致嘴，食道和胃肠道的严重化学烧伤。 **Skin:** Skin contact with contents of an open battery can cause severe irritation or burns to the skin. **皮肤：** 皮肤接触到电池的内部化学材料可能会导致严重的刺激或烧伤皮肤。 **Eye:** Eye contact with contents of an open battery can cause severe irritation or burns to the eye. **眼睛：** 眼睛接触到电池的内部化学材料可能会导致严重的刺激或烧伤眼睛。

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 锂	2.5-3.5	7439-93-2
Manganese Dioxide 二氧化锰	37-39	1313-13-9
Graphite 石墨	3.5-4.5	7782-42-5
Lithium perchlorate 高氯酸锂	1.0-2.0	7791-03-9
Ethylene glycol dimethy ether 乙二醇二甲醚	6.0-8.0	110-71-4
Propylene carbonate 碳酸丙烯酯	7.5-8.5	108-32-7
Iron 铁	29-31	7439-89-6
Chromium 铬	10.5-12.5	7440-47-3
Molybdenum 钼	1.0-1.5	7439-98-7
Polypropylene 聚丙烯	2.0-3.0	9003-07-0

Note: CAS number is Chemical Abstract Service Registry Number.

注意：CAS 号是化学文摘服务注册号。

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	Remove source of contamination or move victim to fresh air. Obtain medical advice. 移除污染源或者将受害者移至新鲜空气处。寻求医生建议。
Ingestion 食入	Please rinse mouth thoroughly with water. Induce vomiting under the guidance of professional personage. Please seek medical treatment in time. 立即用清水漱口，在专业人士的指导下催吐，速就医。
Skin contact 皮肤接触	Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid. 脱下已污染衣服，用大量的水冲洗至少 15 分钟，速就医。
Eye contact 眼睛接触	Irrigate with flowing water for 15 minutes. If irritation persists, consult a physician. 用流动水冲洗 15 分钟，如刺激持续发生，请求助于医生。

Section 5- Fire Fighting Measures

第五部分 消防措施

Characteristics of Hazard 危险特性	Toxic fumes, gases or vapors may evolve on burning. 火灾时可释放有害浓烟、气体或者蒸汽。
Hazardous Combustion Products 燃烧产生的危险物品	Carbon monoxide, carbon dioxide, lithium oxide fumes and so on. 一氧化碳，二氧化碳，锂氧化物烟气等。
Fire-extinguishing Methods and Extinguishing Media 灭火方法及灭火剂	Please use dry sand and other proper fire extinguishing media. 请使用干燥沙等合适的灭火介质。
Attention in Fire-extinguishing 灭火注意事项	The firemen should put on antigas masks and full fire-fighting suits. 消防人员须佩戴防毒面具、穿全身消防服。

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	Don't handing the batteries in manner that allows terminals to short circuit. Do not open, disassemble, crush or burn battery. 不要以让接头短路的方式对电池进行操作。不要打开，分解，挤压或燃烧电池。
Storage 储存	Do not storage the battery haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects. 不要将电池随意丢在盒子或抽屉里，以免电池之间或电池与其他金属物质发生短路。 Keep out of reach of children. 储存在小孩接触不到的地方。 Do not expose the battery to heat or fire. Avoid storage in direct sunlight. 不要将电池暴露在火源和热源附近，避免在阳光直射下存储。 Do not store together with oxidizing and acidic materials. 不要与氧化和酸性物质存储在一起。

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	No engineering controls are required for handling batteries that have not been damaged. Personal protective equipments for damaged batteries should include chemical resistant gloves and safety glasses. 操作未破损的电池，没有工程控制要求。对于破损的电池，个人防护用品应包括化学品防护手套和安全眼镜。
Personal Protective Equipment 个人防护设备	Respiratory Protection: In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting cell cores. Respiratory Protection is not necessary under conditions of normal use. Not necessary under conditions of normal use. 呼吸保护：当电池排气阀打开时，应尽量使通风设备开至最大，避免将打开排气阀的电芯局限在某一狭窄空间内。正常操作条件下，呼吸保护是不必要的。正常使用条件下不必考虑。 Protective Gloves: Not necessary under conditions of normal use. 防护手套：正常使用条件下不必考虑。 Other Protective Clothing or Equipment: Not necessary under conditions of normal use. 其他防护服装或设备：正常使用条件下不必考虑。 Personal Protection is recommended for venting battery: Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields. 当电池排气阀打开时，应做好个人防护：呼吸防护，防护手套，防护服装和有护边的安全玻璃罩都是要准备的。

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: Silver 颜色：银色
	Odour: Odorless 气味：无气味
Change in condition 变化条件:	
pH, with indication of the concentration **pH，有浓度指示**	No data is available 无数据可提供

Melting point/freezing point 熔点/凝固点	No data is available 无数据可提供
Boiling Point, initial boiling point 沸点，初沸点	No data is available 无数据可提供
Flash Point 闪点	No data is available 无数据可提供
Upper/lower flammability or explosive limits 上/下燃烧或爆炸限值	No data is available 无数据可提供
Vapor Pressure 蒸汽压	No data is available 无数据可提供
Vapor Density: (Air = 1) 蒸汽密度: (空气= 1)	No data is available 无数据可提供
Density/relative density 密度/相对密度	No data is available 无数据可提供
Solubility in Water 水溶性	Insoluble 不能溶解
n-octanol/water partition coefficient 正辛醇/水分配系数	No data is available 无数据可提供
Auto-ignition temperature 自燃温度	No data is available 无数据可提供
Decomposition temperature 分解温度	No data is available 无数据可提供
Odout threshold 溴阈	No data is available 无数据可提供
Evaporation rate 蒸发速率	No data is available 无数据可提供
Flammability (soil, gas) 易燃性（土壤，气体）	No data is available 无数据可提供
Viscosity 粘度	No data is available 无数据可提供

Section 10 – Stability and Reactivity

第十部分 稳定性和反应性

Stability 稳定性	Stable under normal temperatures and pressures. 常温常压下稳定。
Conditions to Avoid 应避免的条件	Heat above 70°C or Incinerate, Deform, Mutilate, Crush, Disassemble, Overcharge, Short circuit, Expose over a long period to humid conditions. 加热 70°C 以上或焚烧、变形、毁坏、粉碎、拆卸、过充电、短路，长时间暴露在潮湿的条件下。
Hazardous Decomposition Products 危害分解物	Toxic Fumes, and may form peroxides. 有毒烟雾，并可能形成过氧化物。
Possibility of Hazardous Reaction 危险反应的可能性	If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons. 如果发生泄露，避免与强氧化剂，无机酸，强碱，卤代烃接触。

Section 11 – Toxicological Information

第十一部分 毒理学信息

Irritation 刺激	In the event of exposure to internal contents, vapor fumes may be very irritating to the eyes and skin. 内部物质暴露的情况下，蒸汽烟雾可能对眼睛和皮肤产生刺激性。
Sensitization 致敏	No data is available 无数据可提供
Reproductive Toxicity 再生毒性	No data is available 无数据可提供
Toxicologically Synergistic Materials 协同材料毒理学	No data is available 无数据可提供

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	No data is available 无数据可提供
Mobility in soil 土壤中移动性	No data is available 无数据可提供
Persistence and Degradability 持久性和降解性	No data is available 无数据可提供

Section 13 – Disposal Considerations

第十三部分 废弃处置

Waste Treatment 废弃处置方法	Recycle or dispose of in accordance with government, state & local regulations. 建议遵照国家和地方法规处置或再利用。
Attention for Waste Treatment 废弃注意事项	Deserted batteries couldn't be treated as ordinary trash. Couldn't be thrown into fire or placed in high temperature. Couldn't be dissected, pierced, crushed or treated similarly. Best way is recycling. 废电池不能被当做普通垃圾。不能扔进火中或置于高温下。不能解体，刺穿，破碎或类似的处理。最好的办法是回收利用。

Section 14 – Transport Information

第十四部分 运输信息

This report applies to by sea, by air and by land;
本报告适用于海运，空运和陆运

The LITHIUM BATTERY (model: CR2032) tested according to the requirements of the UNITED NATIONS "Manual of Tests and Criteria" Part III, subsection 38.3;
该锂电池（型号：CR2032）经过测试符合联合国《试验和标准手册》第三部分，第 38.3 章节的要求。

The LITHIUM 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;
该锂电池做了防短路保护。包括防止与同一封装内的导电材料接触可能导致的短路。

The packaging shall be adequate to avoid mechanical damage during transport, handling and stacking.
包装应足以避免在运输，处理和堆放期间的机械损坏。

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，存在易燃危险。

The LITHIUM BATTERY can be shipped by air in according to Section IB of PACKING INSTRUCTION 968, or Section II of PACKING INSTRUCTION 969~970 of the 2022 IATA Dangerous Goods regulations 63rd Edition.
该锂电池可以根据 2022 年 IATA 危险物品规则第 63 版包装指令 968 第 IB 部分或包装指令 969～970 第 II 部分运输。

With regard to transport, the following regulations are cited and considered:
关于运输，引用和考虑了以下法规：
- The International Civil Aviation Organization (ICAO) Technical Instructions.
- 国际民用航空组织（ICAO）技术细则。
- The International Air transport Association (IATA) Dangerous Goods Regulations.
- 国际航空运输协会（IATA）危险物品规则。

UN number of lithium battery: UN3090 or UN3091;
锂电池的 UN 编号：UN3090 或 UN3091;
UN Proper shipping name/Description (technical name): Lithium metal batteries or Lithium metal batteries contained in equipment or Lithium metal batteries packed with equipment;
UN 合适的运输名称/描述（技术名称）：锂金属电池，锂金属电池内置于设备中或锂金属电池与设备包装在一起;
UN Classification (Transport hazard class): Class 9 (PI968 Section IB) or N/A (PI969~970 Section II)
UN 分类（运输危险类别）：9 类危险品（包装指令 968 第 IB 部分）或者 不适用（包装指令 969~970 第 II 部分）

- The International Maritime Dangerous Goods (IMDG) Code.
- 国际海运危险货物（IMDG）规则。

UN number of lithium battery: UN3090 or UN3091;
锂电池的 UN 编号：UN3090 或 UN3091;
UN Proper shipping name/Description (technical name): Lithium metal batteries or Lithium metal batteries contained in equipment or Lithium metal batteries packed with equipment;
UN 合适的运输名称/描述（技术名称）：锂金属电池，锂金属电池内置于设备中或锂金属电池与设备包装在一起;
UN Classification (Transport hazard class): N/A
UN 分类（运输危险类别）：不适用
Marine pollutant(Y/N): N
海洋污染物（Y / N）：N
The battery is not restricted according to IMO IMDG Code (inc Amdt 40-20).
海运按照 IMO IMDG Code (inc Amdt 40-20) 可按普通货物条件办理。
Need to meet the Special Provision: International maritime dangerous goods code (IMDG) 188, 230, 348, 384.
需要符合这些特殊条款：国际海运危险货物规则（IMDG）188, 230, 348, 384.
EmS No.: F-A, S-I

Section 15 – Regulatory Information

第十五部分 法规信息

《Dangerous Goods Regulations》

《危险物品规则》

《Recommendations on the Transport of Dangerous Goods Model Regulations》

《危险货物运输的建议模型规定》

《International Maritime Dangerous Goods》

《国际海上危险货物运输》

《Technical Instructions for the Safe Transport of Dangerous Goods》

《危险货物安全运输技术指南》

《Classification and code of dangerous goods》

《危险货物分类与代码》

《Occupational Safety and Health Act》(OSHA)

《职业安全与健康法案》(OSHA)

《Toxic Substance Control Act》(TSCA)

《有毒物质控制法》（TSCA）

《Consumer Product Safety Act》(CPSA)

《消费者产品安全法案》（CPSA）

《Federal Environmental Pollution Control Act》(FEPCA)

《联邦环境污染控制法》（FEPCA）

《The Oil Pollution Act》(OPA)

《石油污染法》（OPA）

《Superfund Amendments and Reauthorization Act TitleIII(302/311/312/313)》(SARA)

《超级基金修正案和再授权法案 TitleIII(302/311/312/313)》(SARA)

《Resource Conservation and Recovery Act》(RCRA)

《资源保护和恢复法案》（RCRA）

《Safety Drinking Water Act》(CWA)

《安全饮用水法》》（CWA）

《California Proposition 65》

《加州 65 号提案》

《Code of Federal Regulations》(CFR) 49 CFR sections 100-185, 49 CFR -173.185

《联邦条例》(CFR) 49 CFR sections 100-185, 49 CFR -173.185

EU Battery Directive (2006/66/EC, 2013/56/EU)

欧盟电池指令(2006/66/EC, 2013/56/EU)

Regulation (EC) No. 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)

关于化学品的注册、评估、授权和限制(EC)第 1907/2006 号规例

In accordance with all Federal, State and local laws.

符合所有联邦、州和地方法律。

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, we 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.

The data/information contained herein has been reviewed and approved for general release on the basis that this document contains no export controlled information.

在我们看来上面的信息是准确的，这是我们目前能提供的最佳的信息。但是，对于这些信息，我们不对商品的性能做任何明示的或者暗示的保证，我们也不对使用这些信息造成的后果担负任何责任。 用户应当自己调查研究后决定这些信息是否适用于他们的特定用途。尽管在该文档里提出了合理的预警，但是这仅仅只是给您做参考，考量和调查。这份化学品安全技术说明书提供了安全处理和使用该产品的指南，但是它没有，也不能对所有可能发生的情景提出建议，所以您需要根据您对该产品的特定使用情况来决定是否需要其他的预防措施。

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********End of report 报告结束********