MSDS Report

Applicant's name **委托方名称**	Zhaoqing New Leader Battery Industry Co., Ltd. 肇庆新利达电池实业有限公司
Applicant's address **委托方地址**	New Leader Industry Building, Tenth Area Chuang Ye Road, Ding Hu New Town, Zhao Qing City, Guangdong Province, China 广东省肇庆市鼎湖新城第十区创业路新利达工业大厦
Name of sample **样品名称**	Lithium Manganese Dioxide Button Cell 锂锰扣式电池
Model 型号	CR2032
Nominal voltage **标称电压**	3.0V
Rated capacity **额定容量**	240mAh or 0.72 WH
Sample Mass **样品重量**	3.1g
Dimension 尺寸	Φ19.94mm×3.11mm (D×H)
Prepared by **编制单位**	NRCC (Shenzhen) Safety Technology Co., Ltd. 诺诚（深圳）安全科技有限公司 (Testing and Inspection Body affiliated to the National Registration Center for Chemicals, MEM) （应急管理部化学品登记中心旗下检测检验机构） Building A, No.2, Tengfeng 5th Road, Fuyong, Bao'an District, Shenzhen 深圳市宝安区福永街道腾丰五路 2 号 A 栋
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Seal of NRCC safety 报告单位（盖章）： _____

Material Safety Data Sheet 材料安全技术说明书

Section 1 - Product & Company Identification 第一部分 产品及企业标识	
Name of sample 样品名称	Lithium Manganese Dioxide Button Cell 锂锰扣式电池
Manufacturer's name 制造商名称	Zhaoqing New Leader Battery Industry Co., Ltd. 肇庆新利达电池实业有限公司
Manufacturer's address 制造商地址	New Leader Industry Building, Tenth Area Chuang Ye Road, Ding Hu New Town, Zhao Qing City, Guangdong Province, China 广东省肇庆市鼎湖新城第十区创业路新利达工业大厦
Factory's name 工厂名称	Zhaoqing New Leader Battery Industry Co., Ltd. 肇庆新利达电池实业有限公司
Factory's address 工厂地址	New Leader Industry Building, Tenth Area Chuang Ye Road, Ding Hu New Town, Zhao Qing City, Guangdong Province, China 广东省肇庆市鼎湖新城第十区创业路新利达工业大厦
Contact Person 联系人	Jiang Dongtao
Emergency Tel 应急电话	+86-758-7766802
E-mail 邮箱	hf@newleader.cn

Section 2 - Hazard Identification 第二部分 危险性概述	
Classification of Danger 危险性类别	See section 14. 见第十四部分。
Primary Route(s) of Exposure 浸入途径	Inhalation,Ingestion, Skin contact and Eye contact. 吸入、食入、皮肤接触、眼睛接触。
Health Hazard 健康危害	There is no danger in normal use, the battery cannot be disassembled, opened or decomposed, and the materials or components inside are 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。 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 or raw materials can cause severe chemical burns to the 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 the battery's internal chemistry can cause severe irritation or burn 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 the battery's internal chemistry can cause severe irritation or burn 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/组成的信息

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	7439-93-2
Manganese Dioxide 二氧化锰	26	1313-13-9
Graphite 石墨	7.5	7782-42-5
Lithium perchlorate 高氯酸锂	2.5	7791-03-9
Ethylene glycol dimethy ether 乙二醇二甲醚	1.5	110-71-4
Propylene carbonate 碳酸丙烯酯	4	108-32-7
Steel 钢	43	12597-69-2
Dimethoxymethane 二甲氧基甲烷	7	109-87-5
Polypropylene 聚丙烯	6.5	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	Take off contaminated clothing, rinse with plenty of water, if skin allergies and redness, please seek medical treatment in time. 脱下已污染的衣物，用大量的清水冲洗，若皮肤出现过敏及红肿情况请速就医。
Eye contact 眼睛接触	Irrigate with flowing water for 15 minutes. If irritation persists, please seek medical treatment in time. 用流动水冲洗 15 分钟，如刺激持续发生，速就医。

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	For small fires, can use dry powder fire extinguisher, dry sand and other proper fire extinguishing media. 对于小型火险，可使用干粉灭火器，干燥沙等合适的灭火介质。
Attention in Fire-extinguishing 灭火注意事项	Firefighting personnel shall wear gas masks and full-body firefighting 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 泄漏应急措施

Personal Precautions, protective equipment, and emergency procedures 个人预防措施、防护装备和应急程序	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. 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/泄漏处和处于逆风。参考第七部分和第八部分中列出的防护措施。
Environmental Precautions 环境保护措施	Prevent product from contaminating soil and from entering sewers or waterways. 防止产品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，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	Do not disassemble, squeeze, or put the battery into a high temperature environment. Do not short circuit or install with incorrect polarity. 禁止拆解、挤压或投入高温环境中，禁止短路或将电池正负极错误的安装在设备中。
Storage 储存	Store in a cool, dry, well-ventilated area away from incompatible substances. Keep out of the reach of children. 储藏于阴凉，干燥，通风处，远离接触会发生反应的材料。放在儿童无法接触的地方。
Other Precautions 其他要注意的防范措施	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection equipment. 按照良好的工业卫生和安全规范进行操作。避免接触皮肤，眼睛或衣服。使用个人防护设备。

Section 8 - Exposure Controls/Personal Protection 第八部分 接触控制/个人防护	
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	Eye and Face Protection: Not to be considered under normal use conditions. If the electrolyte leaks, wear protective glasses and a safety mask. 眼睛和脸部保护：正常使用条件下不必考虑。如果电解液泄露，请佩戴防护眼镜和安全面罩。 Skin and Body Protection: Not to be considered under normal use conditions. If the electrolyte leaks, wear protective gloves and clothing. 皮肤和身体防护：正常使用条件下不必考虑。如果电解液泄露，请穿戴防护手套和防护服。 Respiratory Protection: Not to be considered under normal use conditions. If the electrolyte leaks or the battery vents, wear a gas mask. 呼吸系统防护：正常使用条件下不必考虑。如果电解液泄露或电池泄气，请佩戴防毒面罩。

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: Normally, no odor. If leaking, smells of medical ether. 气味：正常情况下，无气味。泄漏时，医用乙醚的气味。
Change in condition 变化条件	
pH	No data is available

酸碱度	无数据可提供。
Flash Point 闪点	Not applicable. 不适用。
Flammability 易燃度	No data is available 无数据可提供。
Relative density 相对密度	No data is available 无数据可提供。
Solubility (water) 溶解性（水溶性）	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

Chemical Stability 化学稳定性	Stable under recommended storage conditions. 在推荐的储存条件下可以保持稳定。
Conditions to Avoid 应避免的条件	Heat above 70°C or incinerate，expose over a long period to humid conditions. 加热 70°C 以上或焚烧，长时间暴露在潮湿的条件下。
Incompatible materials 不相容材料	Acids, Oxidizing agents, Bases. 酸，氧化剂，碱。
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。

Section 11 - Toxicological Information
第十一部分 毒理学信息

Irritation 刺激	In the case of internal material exposure, the vapor fumes may cause irritation to the eyes and the leaking electrolyte may cause irritation to the skin. 内部物质暴露的情况下，蒸汽烟雾可能对眼睛产生刺激，泄露的电解液可能对皮肤产生刺激。
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	No data is available 无数据可提供。

协同材料毒理学	

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。

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

UN number 联合国货物编号（UN 编号）	3090 or 3091
Proper shipping name 运输专用名称	Lithium metal batteries (including lithium alloy batteries) or; 锂金属电池（包括锂合金电池）或： Lithium metal batteries packed with equipment (including lithium alloy batteries) or; 锂金属电池与设备包装在一起（包括锂合金电池）或: Lithium metal batteries contained in equipment (including lithium alloy batteries).

	锂金属电池内置于设备中（包括锂合金电池）。
DGR 危险品规则	Can be shipped by air in accordance with International Civil Aviation Organization (ICAO) or International Air Transport Association (IATA) DGR 66th Edition (2025) Packing Instructions Section IB of 968, Section II of 969 or Section II of 970 appropriately. 可根据国际民用航空组织(ICAO)或国际航空运输协会(IATA) DGR 66 版(2025)包装指令 PI968 IB、PI969 II 或 PI970 II 适当空运。 For PI968 IB: Paste Class 9—Batteries Label, Cargo Aircraft Only Label and Battery Mark. 针对 PI968 IB：粘贴 9 类电池标签、限货机标签和电池标记。 For PI969 II or PI970 II: Paste Battery Mark. 针对 PI969 II 或 PI970 II：粘贴电池标记。 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）或不适用（包装指令 969~970 第 II 部分） PG Packing Group: N/A PG 包装等级：不适用
IMDG CODE 国际海运危险货物规则	The batteries are not restricted to IMDG Code 2024 Edition (Amdt 42-24) according to special provision 188. 根据特殊规定 188，该电池不受 IMDG Code 2024 版(Amdt 42-24)限制。 Paste Battery Mark. 粘贴电池标记。 UN Classification (Transport hazard class): N/A UN 分类（运输危险类别）：不适用 PG Packing Group: N/A PG 包装等级：不适用 Marine pollutant (Y/N): N 海洋污染物（Y / N）: N EmS No.: F-A, S-I EmS 编号: F-A, S-I
Regulations concerning road transportation of dangerous goods 危险货物道路运输规则	The batteries are not restricted to JT/T 617.1-2018~JT/T 617.7-2018 according to special provision 188 of JT/T 617.3-2018. 根据 JT/T 617.3-2018 特殊规定 188，该电池不受 JT/T 617.1-2018~JT/T 617.7-2018 限制。 Paste Battery Mark. 粘贴电池标记。

	UN Classification (Transport hazard class): N/A UN 分类（运输危险类别）：不适用 PG Packing Group: N/A PG 包装等级：不适用
ADR 危险货物国际道路运输欧洲公约	The batteries are not restricted according to ADR 2025 special provision 188. 根据 ADR 2025 特殊规定 188，该电池不受限制。 Paste Battery Mark. 粘贴电池标记。 UN Classification (Transport hazard class): N/A UN 分类（运输危险类别）：不适用 PG Packing Group: N/A PG 包装等级：不适用
RID 国际铁路危险货物运输规则	The batteries are not restricted according to RID 2025 special provision 188. 根据 RID 2025 特殊规定 188，该电池不受限制。 Paste Battery Mark. 粘贴电池标记。 UN Classification (Transport hazard class): N/A UN 分类（运输危险类别）：不适用 PG Packing Group: N/A PG 包装等级：不适用

Section 15 - Regulatory Information
第十五部分 法规信息

Recommendations on the Transport of Dangerous Goods-Model Regulations

《关于危险货物运输的建议书 规章范本》

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

《关于危险货物运输的建议书 试验和标准手册》

Dangerous Goods Regulations

《危险品规则》

International Maritime Dangerous Goods Code

《国际海运危险货物规则》

Regulations Concerning Road Transportation of Dangerous Goods

《危险货物道路运输规则》

Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR)

《危险货物国际道路运输欧洲公约》

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)

《国际铁路危险货物运输规则》

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)

Federal Environmental Pollution Control Act (FEPCA)

《联邦环境污染控制法》 (FEPCA)

Resource Conservation and Recovery Act (RCRA)

《资源保护和恢复法案》(RCRA)

Code of Federal Regulations (CFR)

《联邦条例》(CFR)

In accordance with all Federal, State and local laws.

符合所有联邦、州和地方法律。

Section 16 - Other Information
第十六部分 其他信息

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

本份 MSDS 中的信息只是基于我们当前所拥有的相关材料的信息而编制的，只是为了描述本品的健康、安全与环境需求，以使各有关方面能更好地了解和信任本产品。这些信息只是提供给您，以供考虑、研究和确认。其中的一些危害预防措施描述并非是唯一的。所以本份 MSDS 不能作为使用本品实现任何特定目的的保证。各有关使用者有责任预先完成本品的安全性及其他方面的测试，以评判其是否满足您的使用目的。

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 MSDS Report********

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