

Material Safety Data Sheet

Section 1 - Chemical and Company Identification		
第一部分-化学品及企业标识		
Sample Name 样品名称	Primary Lithium Manganese Dioxide Batteries 一次性锂锰电池	
Model/型号	CR 9V	
Ratings/额定参数	9V, 1000mAh	
Lithium content/锂含量	1.22g	
Manufacturer 制造商	Shenzhen Cestpower Battery Co. Ltd., 深圳市瑟斯特电池有限公司	
Manufacturer Contact information 制造商联系信息	address 地址	Block F, Hengtai Industrial Park, No 56, Guan yuan Road, Guangming District, Shenzhen, China 深圳市光明区冠园路56号恒泰工业园F栋
	Tel./应急电话	+86 13418750005
	Email/邮箱	sales@cestpower.com

Section 2 - Hazards Identification	
第二部分-危险性概述	
<p>Hazards Identification: 危险性描述</p> <p>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。</p>	
<p>Primary Route (s) of Exposure: 接触途径</p> <p>inhalation, ingestion, Skin contact and Eye contact. 吸入、食入、皮肤接触、眼睛接触。</p>	
<p>Potential Health Effects: 潜在健康影响</p> <p>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。</p> <p>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。</p> <p>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。</p> <p>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。</p>	

Material Safety Data Sheet

Section 3- Composition/Information on Ingredients

第三部分-成分/组成信息

Chemical Name 化学名称	CAS Number CAS 号 (化学文摘登记号)	Concentration or concentration ranges (%) 浓度或浓度范围(%)
Manganese dioxide 二氧化锰	1313-13-9	46.0
Iron 铁	7439-89-6	25.1
Propylene carbonate 碳酸丙烯酯	108-32-7	7.0
Poly(tetrafluoroethylene) 聚四氟乙烯	9002-84-0	5.0
1,2-Dimethoxyethane 乙二醇二甲醚	110-71-4	5.0
Lithium 锂	7439-93-2	2.9
Polypropylene 聚丙烯	9003-07-0	3.0
Graphite 石墨	7782-42-5	2.0
Aluminium 铝	7429-90-5	2.0
Lithium perchlorate 高氯酸锂	7791-03-9	1.0
Nicke 镍	7740-02-0	1.0

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 applicable.

N/A=不适用

Section 4- First Aid Measure

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。
--	---

Material Safety Data Sheet

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 water, dry sand and other proper fire extinguishing media. 请使用水, 干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 Measure

第六部分-泄漏应急处理

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, 可以用干沙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(干沙或沙土)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。用洗涤剂和清水清洁污染区域, 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 handling 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	Long period storage: 25±5°C, 60±25%R.H 长期存储: 25±5°C, 相对湿度 60±25% 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。

Material Safety Data Sheet

	<p>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。</p> <p>Do not store together with oxidizing and acidic materials. 不要与氧化和酸性物质存储在一起。</p>
--	--

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	<p>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。</p>
Personal Protective Equipment 个人防护设备	<p>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。</p> <p>Protective Gloves: Not necessary under conditions of normal use. 防护手套：正常使用条件下不必考虑。</p> <p>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。</p> <p>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。</p>

Section 9 - Physical and Chemical Properties

第九部分-理化特性

Physical state: Solid 物理状态：固体
Odor: Odorless 气味：无气味
Solubility: Partial soluble in water 溶解度：部分溶于水

Section 10 - Stability and Reactivity

第十部分-稳定性和反应性

Stability 稳定性	<p>Stable under normal temperatures and pressures. 常温常压下稳定。</p>
Conditions to Avoid 应避免的条件	<p>Heat above 70°C or Incinerate, Deform, Mutilate, Crush, Disassemble, Overcharge, Short circuit, Expose over a long period to humid conditions.</p>

Material Safety Data Sheet

	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	Not applicable. 不适用
Reproductive Toxicity 再生毒性	Not applicable. 不适用
Toxicologically Synergistic Materials 协同材料毒理学	Not applicable. 不适用

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 applicable. 不适用
Mobility in soil 土壤中移动性	Not applicable. 不适用
Persistence and Degradability 持久性和降解性	Not applicable. 不适用

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。
----------------------------------	---

Material Safety Data Sheet

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

The battery shall be passed the test items of the UNITED NATIONS "Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria" section 38.3 and meet the requirements of UNITED NATIONS "Recommendations on the Transport of Dangerous Goods, model Regulations "

该电池必须通过联合国《关于危险货物运输的建议书 试验和标准手册》第 38.3 章节的测试项目和满足联合国《关于危险货物运输的建议书 规章范本》的要求。

The battery shall be 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;

该电池必须做好防短路保护。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。

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。

The battery can be shipped by air in according to PACKING INSTRUCTION 968 Section IB , or PACKING INSTRUCTION 969~970 Section II of the 2025 IATA Dangerous Goods regulations 66th Edition.

该电池可以根据 2025 年 IATA 危险物品规则第 66 版包装指令 968 第 IB 部分或包装指令 969~970 第 II 部分运输。

UN number: UN3090 or UN3091;

UN 编号：UN3090 或 UN3091:

UN Proper shipping name/Description (technical name): Lithium metal batteries or Lithium metal batteries packed with equipment or Lithium metal batteries contained in equipment;

UN 合适的运输名称/描述(技术名称)：锂金属电池，锂金属电池与设备包装在一起或锂金属电池内置于设备中；

UN Classification (Transport hazard class): Class 9 (PI968 Section IB) or Not applicable (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)

UN Packing Group: Not applicable

UN 包装类别：不适用

-The international Maritime Dangerous Goods (IMDG) Code.

-国际海运危险货物(IMDG)规则。

Material Safety Data Sheet

UN number: UN3090 or UN3091;

UN 编号: UN3090 或 UN3091:

UN Proper shipping name/Description (technical name): Lithium metal batteries or Lithium metal batteries packed with equipment or Lithium metal batteries contained in equipment;

UN 合适的运输名称/描述(技术名称): 锂金属电池, 锂金属电池与设备包装在一起或锂金属电池内置于设备中;

UN Classification (Transport hazard class): Not applicable

UN 分类(运输危险类别): 不适用

UN Packing Group: Not applicable

UN 包装类别: 不适用

The battery is not restricted according to IMO IMDG Code (inc. Amendment 42-24) Special Provision 188.

海运按照国际海事组织《国际海运危险货物规则》(42-24 版)特殊规定 188 不受限制。

Section 15 - Regulatory Information

第十五部分-法规信息

International Civil Aviation Organization (ICAO) Technical Instructions

ICAO 国际民用航空组织(ICAO)技术细则:

1. Unless be exempted according to ICAO TI, the lithium ion cell/batteries (UN 3480, PI 965) and lithium metal cell/batteries (UN 3090, PI 968) are forbidden for carriage on passenger aircraft.

除非依据《技术细则》的相关要求取得豁免, 单独包装的锂离子电池(芯)(UN 3480, PI 965)和锂金属电池(芯)(UN 3090, PI 968)货物禁止使用客机运输。

2. Unless be approved according to ICAO TI, Lithium ion cells/batteries (UN 3480, PI 965) must be offered for transport at a state of charge (SoC) not exceeding 30% of their rated design capacity.

除非依据《技术细则》的相关要求取得特别批准, 按照包装说明 965 要求运输的锂离子电池(芯)货物, 交运时锂离子电池(芯)的荷电状态不得超过其额定容量的 30%。

Section 16 - Additional Information

第十六部分-附加信息

Compiler 编制人: John Zhang

Reviewer 审核人: Tracy Chen

Approver 批准人: Leo Chi

Issue Date 签发日期: 2024-12-05

Effective date 生效日期: 2025-01-01

Material Safety Data Sheet

Other Information 其他信息:

This information has been compiled from sources considered to be dependable and is, to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty (either expressed or implied) or guarantee is made to the accuracy reliability or completeness of the information contained herein.

This information relates to the specific materials designated and may not be valid for such material used in combination with any other materials or in any process. It is the user's responsibility to satisfy himself as to the suitability and completeness of this information for his particular use.

Cestpower does not accept liability for any loss or damage that may occur, whether direct, indirect, incidental or consequential, from the use of this information. Cestpower does not offer warranty against patent infringement.

Additional information is available by calling the telephone number above designated purpose.

本信息源自可靠来源，据我们所知，截至编制之日，均准确可靠。然而，我们并不对本文所含信息的准确性、可靠性或完整性作出任何明示或暗示的陈述、保证或担保。

本信息仅针对指定的特定材料，可能不适用于此类材料与其他材料结合使用或在任何工艺过程中使用的情况。用户有责任自行确保本信息对于其特定用途的适用性和完整性。

对于因使用本信息而可能发生的任何直接、间接、偶然或后果性损失或损害，本公司概不负责。本公司不提供专利侵权担保。

如需了解更多信息，请致电上述指定电话号码。