



Microtest
微 测 检 测

MSDS Report

Report No. (报告编号): MTi240111022-01B1

Date of issue(签发日期): Jan. 17, 2024

Sample Name: Portable Power Station

样品名称: 便携式储能电源

Model:

型号:

AC200P L

Applicant:

申请商:

SHENZHEN POWEROAK NEWENER CO., LTD

深圳市德兰明海新能源股份有限公司

Address:

地址:

F19, BLD No.1, Kaidaer, Tongsha Rd No.168, Xili Street,
Nanshan, Shenzhen, China

深圳市南山区西丽街道新围社区同沙路168号凯达尔集团中心
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Shenzhen Microtest Co., Ltd.
深圳市微测检测有限公司



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Material Safety Data Sheet

化学品安全技术说明书

Section 1 – Chemical Product and Company Identification

第 1 节 - 化学品和企业标识

Sample Name.....:	Portable Power Station
样品名称	便携式储能电源
Trade Mark.....:	BLUETTI
商标	
Model.....:	AC200P L
型号	
Rated Capacity/Energy.....:	45Ah/2304Wh
额定容量/能量	
Weight.....:	About(约):27.926Kg
重量	
Dimension.....:	Max(最大值): L:420.0mm , W:280.0mm , H:366.5mm
尺寸	
Manufacture's Name.....:	Huizhou PowerOak Innovation Co.,Ltd
制造商	惠州市新明海科技有限公司
Address.....:	(No.1 Workshop) Longsheng 5th Road, Laoshe Village, Dayawan
地址	West Zone, Huizhou, Guangdong, China 惠州大亚湾西区老寮村龙盛五路 (1 号厂房)
Contact information.....:	Tel(固定电话): /
E-mail address.....:	sunxp@poweroak.net
电子邮件地址	
Version number.....:	V1.0
版本号	
Referenced documents.....:	ISO 11014:2009 Safety data sheet for chemical products
参考文件	ISO 11014: 2009 化学品安全技术说明书

Section 2 – Hazards Identification

第 2 节 - 危害性概述

Preparation hazards and classification 制剂危害及分类	Not dangerous with normal use. Do not dismantle, open or shred battery. Exposure to the ingredients contained within or their ingredients products could be harmful. 正常使用不危险。请勿拆卸、开启或撕碎电池。暴露于其中的成分或其成分产品可能是有害的。
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Apperance, Color, and Odor 外观、颜色和气味	Solid object with no odor, Gray 固体，无气味，灰色
Primary Route(s) of Exposure 主要暴露途径	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. 这些化学物质包含在一个密封的不锈钢外壳中。只有当电池被机械地、热地或电地滥用到危及外壳的程度时，才有暴露的危险。如果出现这种情况，吸入、摄入、眼睛接触和皮肤接触都可能暴露在电解质溶液中。
Potential Health Effects: 潜在健康影响:	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(短期):请参阅第 8 节的暴露控制，如果电池已经破裂，电池内的电解质溶液将是腐蚀性的，并可能导致烧伤。 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:从密封电池中吸入物质不是预期的接触途径。电池破裂产生的蒸汽或薄雾可能引起呼吸道刺激。 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:从密封电池中吸收物质不是预期的暴露途径。吞下打开的电池会引起口腔、食道和胃肠道的严重化学灼伤。 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。皮肤接触打开的电池内容物可能导致严重的刺激或烧伤皮肤。 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:电池与眼睛接触不会造成任何伤害。与打开的电池的内容物进行眼神接触会对眼睛造成严重的刺激或灼伤。 CHRONIC (long term): see Section 11 for additional toxicological

	data 慢性（长期）：有关其他毒理学数据，请参阅第 11 节
Medical Conditions Aggravated by Exposure 因暴露而加重的健康状况	Not applicable 不适用
Reported as carcinogen 报告为致癌物质	Not applicable 不适用

Section 3 – Composition/Information on Ingredients

第 3 节-成分/组成信息

battery is a mixture.

电池是一种混合物

Chemical composition 化学成分	Chemical Formula 化学式	CAS No CAS 号	in % by weight 重量百分比
磷酸铁锂 Lithium iron phosphate	LiFeC ₆ PO ₄	15365-14-7	33.60
石墨 Graphite	C	7782-42-5	15.97
聚偏氟乙烯 Poly(vinylidene fluoride)	C ₂ H ₂ F ₂	24937-79-9	1.06
羧甲基纤维素 Carboxymethyl cellulose	C ₈ H ₁₆ O ₈	9000-11-7	0.25
炭黑 Carbon black	C ₅	1333-86-4	0.52
丁苯橡胶 Styrene butadiene rubber	C ₁₂ H ₁₄	9003-55-8	0.53
聚丙烯 Polypropylene	(C ₃ H ₆) _n	9003-07-0	2.91
六氟磷酸锂 Lithium hexafluorophosphate	LiPF ₆	21324-40-3	2.27
碳酸乙烯酯 Ethylene carbonate	C ₃ H ₄ O ₃	96-49-1	2.57
碳酸甲乙酯 Ethyl methyl carbonate	C ₄ H ₈ O ₃	623-53-0	1.29
碳酸二甲酯 Dimethyl Carbonate	C ₃ H ₆ O ₃	616-38-6	9.01
铜 Copper	Cu	7440-50-8	7.60
铝 Aluminum	Al	7429-90-5	4.25
镍 Nickel	Ni	7440-02-0	0.10
铁 Iron	Fe	7439-89-6	18.06

Labeling according to EC directives.

根据欧共体指令进行标识

No symbol and risk phrase are required.

不需要符号和风险短语

Note: CAS number is Chemical Abstract Service Registry Number. N/A=Not apply

注: CAS 编号为化学文摘服务注册编号。N / A =不适用

Section 4 – First-aid Measures

第 4 节-急救措施

Inhalation 吸入	If contents of an opened battery are inhaled, remove source of contamination or move victim to fresh air. Obtain medical advice. 如果吸入打开的电池的内容物, 清除污染源或转移受害者到新鲜空气。或者获得医学建议。
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. 如果皮肤接触到打开的电池内容物发生, 尽快清除污染的衣服, 鞋子和皮具。立即用温水冲洗至少 30 分钟。如果刺激或疼痛持续, 请就医。彻底清洁衣物、鞋及皮具, 然后再使用或弃置。
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. Neutral 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. 如果眼睛接触到打开的电池的内容物, 立即用温水冲洗污染的眼睛, 同时保持眼睑打开至少 30 分钟。一旦可用, 就可以使用中性盐水溶液。如有需要, 在送往急救中心的途中继续冲洗。注意不要将受污染的水冲洗到未受影响的眼睛或脸上。迅速将伤者送往急救中心。
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. 如果摄入打开的电池的内容物, 如果受害者迅速失去意识, 或者无意识或抽搐, 切勿通过口腔给予任何东西。让受害者用水彻底冲洗口腔。不要催吐。让受害者饮用 60 至 240 毫升 (2-8 盎司) 的水。如果呕吐自然发生, 让受害者向前倾, 以降低误吸风险。让受害者再次用水冲洗口腔。迅速将受害者运送到急救室。

Section 5 – Fire-fighting Measures

第五节-消防措施

Flammable Properties 易燃的特性	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. 如果电池破裂, 电池内的电解质溶液是易燃的。与任何密封容器一样, 电池在过热时可能会破裂;这可能导致易燃或腐蚀性物质的释放。
Suitable extinguishing Media 适合的灭火剂	Use extinguishing media suitable for the materials that are burning. 使用适合燃烧材料的灭火剂
Unsuitable extinguishing Media 不合适的灭火剂	Not available 不适用
Explosion Data 爆炸的数据	Sensitivity to Mechanical Impact: This may result in rupture in extreme cases 对机械冲击的敏感性: 在极端情况下可能会导致破裂 Sensitivity to Static Discharge: Not Applicable 对静电放电敏感:不适用
Specific Hazards arising from the chemical 该化学品产生的特定危害	Fires involving battery 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 涉及电池的火灾可以用水控制。然而, 当使用水时, 氢气可能会进化。在密闭空间中, 氢气可以形成爆炸性混合物。在这种情况下, 建议使用窒息剂扑灭火灾
Protective Equipment and precautions for firefighters 消防人员的防护设备和预防措施	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. 如遇火警, 应立即疏散, 并在安全距离内灭火。穿戴压力要求, 自给式呼吸器和全套防护装备。从受保护的地点或安全距离灭火。使用 NIOSH/MSHA 认可的全脸自给式呼吸器(SCBA)和全套防护装备。
NFPA	Health: 0 Flammability: 0 Instability: 0 健康:0易燃性:0不稳定性:0

Section 6 – Accidental Release Measures

第 6 节-泄漏应急措施

Personal Precautions, protective equipment, and emergency procedures 个人预防措施, 防护设备和应急程序	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. 在清理完成之前限制进入该区域。请勿触摸溢出的材料。如第8节所述, 穿戴足够的个人防护装备。
Environmental Precautions 环境保护措施	Prevent material from contaminating soil and from entering sewers or waterways. 防止材料污染土壤并进入下水道或水道。
Methods and materials for Containment 遏制的方法和材料	Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean up spills immediately. 如果安全, 请停止泄漏。用干沙或泥土包含溢出的液体。立即清理溢出物。
Methods and materials for cleaning up 清理方法和材料	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. 用惰性吸附剂(干沙或土)吸收溢出的物质。将受污染的吸附剂舀入可接受的废物容器中。收集所有受污染的吸附剂, 并按第13条的指示处置。用洗涤剂和水擦洗该区域; 收集所有受污染的洗涤水, 以便妥善处理。

Section 7 – Handling and Storage

第 7 节-操作处理和储存

Handling 操作处理	Don't handling battery with metalwork. Do not open, disassemble, crush or burn battery. Ensure good ventilation/ exhaustion at the workplace. 不要用金属制品处理电池。请勿打开、掩饰、压碎或烧毁电池。确保工作场所有良好的通风。 Prevent formation of dust. 防止灰尘的形成。 Information about protection against explosions and fires: Keep ignition sources away-Do not smoke. 关于防爆和防火的信息: 远离火源——不要吸烟。
Storage	If the battery are subject to storage for such a long term as more



第 8 节-接触控制和个人防护

Tel: (86-755) 88850135 Fax: (86-755) 88850136 Web: <http://www.mtitest.com> E-mail: mti@51mti.com
Add: Add: 101, No.7, Zone 2, Xinxing Industrial Park, Fuhai Road, Xinhe Community, Fuhai Subdistrict, Baoan District, Shenzhen, Guangdong, China

	皮肤和身体保护:在正常情况下不需要, 如果处理打开或泄漏的电池, 请戴上氯丁橡胶或丁腈橡胶手套。 Hand protection: Wear neoprene or natural rubber material gloves if handling an open or leaking battery. 手部防护: 如果处理打开或泄漏的电池, 请戴上氯丁橡胶或天然橡胶材料手套。 Eye Protection: Not necessary under normal conditions, Wear safety glasses if handling an open or leaking battery. 眼睛防护: 在正常条件下不需要, 如果处理打开或泄漏的电池, 请戴上安全眼镜。
Other Protective Equipment 其他防护设备	Have a safety shower and eye wash fountain readily available in the immediate work area. 在工作区域附近有一个安全的淋浴喷头和洗眼喷头。
Hygiene Measures 卫生措施	Do not eat, drink, or smoke in work area. Maintain good housekeeping. 不要在工作区域进食, 饮水或吸烟。保持良好的内务管理。

Section 9 - Physical and Chemical Properties

第 9 节 - 物理和化学特性

Physical State 物理状态	Form: Solid 形态: 固体
	Color: Gray 颜色: 灰色
	Odour: If leaking, smells of medical ether. 气味: 泄漏时, 有醚的气味。
Change in condition: 变化的条件:	
pH, with indication of the concentration pH, 指示浓度	Not applicable 无可用数据
Melting point/freezing point 熔点/凝固点	Not available. 无可用数据
Boiling Point, initial boiling point and Boiling range: 沸点、初始沸点及沸点范围:	Not available. 无可用数据

Flash Point 闪点	Not available. 无可数据
Upper/lower flammability or explosive limits 上/下可燃性或爆炸极限	Not available. 无可数据
Vapor Pressure: 蒸汽压力:	Not applicable 无可数据
Vapor Density: (Air = 1) 蒸汽密度:(空气= 1)	Not applicable 无可数据
Density/relative density 密度/相对密度	Not available. 无可数据
Solubility in Water: 水中溶解度:	Insoluble 无可数据
n-octanol/water partition coefficient n-octanol /water分配系数	Not available. 无可数据
Auto-ignition temperature 自燃温度	Not available. 无可数据
Decomposition temperature 分解温度	Not available. 无可数据
Odour threshold 气味阈值	Not available. 无可数据
Evaporation rate 蒸发率	Not available. 无可数据
Flammability (soil, gas) 易燃性(固体、气体)	Not available. 无可数据
Viscosity 粘性	Not applicable 无可数据

Section 10 - Stability and Reactivity

第 10 节-稳定性和反应性

Stability 稳定性	The product is stable under normal conditions. 该产品在正常条件下稳定。
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Conditions to Avoid (e.g. static discharge, shock or vibration) 应避免的情况(例如静电放电、冲击或振动)	Do not subject battery to mechanical shock. 不要让电池受到机械冲击。 Vibration encountered during transportation does not cause leakage, fire or explosion. 运输过程中产生的振动不会引起泄漏、火灾或爆炸。 Do not disassemble, crush, short or install with incorrect polarity. Avoid mechanical or electrical abuse. 不要拆卸、压碎、短路或安装极性不正确。避免机械或电气滥用。
Incompatible Materials 不相容的材料	Not Available 无可用数据
Hazardous Decomposition Products 危险的分解产物	This material may release toxic fumes if burned or exposed to fire 如果燃烧或暴露在火中，该材料可能释放有毒烟雾
Possibility of Hazardous Reaction 危险反应的可能性	Not Available 无可用数据

Section 11 - Toxicological Information

第 11 节 – 毒理学信息

Irritation 刺激性	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. 只有当细胞被机械地、热地或电地滥用到危及外壳的程度时，才会出现刺激的危险。如果出现这种情况，可能会对皮肤、眼睛和呼吸道造成刺激。
Sensitization 致敏	Not Available 无可用数据
Neurological Effects 神经系统的影响	Not Available 无可用数据
Teratogenicity 致畸性	Not Available 无可用数据
Reproductive Toxicity	Not Available

生殖毒性	无可用数据
Mutagenicity (Genetic Effects) 致突变性（遗传效应）	Not Available 无可用数据
Toxicologically Synergistic Materials 毒理学协同材料	Not Available 无可用数据

Section 12 - Ecological Information

第 12 节 - 生态学信息

General note: 一般说明:	Water hazard class 1(Self-assessment): slightly hazardous for water. 水危害等级 1（自我评估）：对水有轻微危害。 Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. 不允许未稀释的产品或大量产品进入地下水、河道或污水系统。
Anticipated behavior of a chemical product in environment/possible environmental impace/ecotoxicity 化学产品在环境中的预期行为/可能的环境影响/生态毒性	Not Available 无可用数据
Mobility in soil 土壤中的流动性	Not Available 无可用数据
Persistence and Degradability 持久性和降级性	Not Available 无可用数据
Bioaccumulation potential 生物体内积累的可能性	Not Available 无可用数据
Other Adverse Effects 其他不利影响	Not Available 无可用数据

Section 13 – Disposal Considerations

第 13 节 – 废弃处置

Product disposal recommendation: Observe local, state and federal laws and regulations.

Packaging disposal recommendation: Be aware discarded batteries may cause fire, tape the battery terminals to insulate them. Don't disassembly the battery. Completely discharge containers (no tear drops, no powder rest, scraped carefully). Containers may be recycled or re-used. Observe local, state and federal laws and regulations.

产品处置建议:遵守当地、州和联邦法律法规。

包装处理建议:注意废弃电池可能引起火灾,用胶带将电池端子隔离。不要拆卸电池。完全排出容器(无泪滴,无粉末残留,小心刮擦)。容器可循环再造或再用。遵守当地、州和联邦法律法规。

Section 14 – Transport Information

第 14 节-运输资料

For the international transport of lithium batteries, they must comply with these regulations: the International Maritime Dangerous Goods (IMDG) Code by International Maritime Organization (IMO), Dangerous Goods Regulations (DGR) by International Air Transport Association (IATA) and Technical Instructions for the Safe Transport of Dangerous Goods by Air by International Civil Aviation Organization (ICAO). These regulations are based on the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria.

对于锂电池的国际运输,它们必须遵守这些规定:国际海事组织(IMO)的国际海运危险货物(IMDG)规则,国际航空运输协会(IATA)的危险货物规则(DGR)和技术细则 国际民用航空组织(ICAO)通过航空安全运输危险货物。这些法规以“联合国关于危险货物运输的建议书,试验和标准手册”为基础。

Lithium batteries which meet the requirements of UN38.3 (UN Manual of Tests and Criteria, Part III, subsection 38.3) could be transported by air and by sea as ordinary goods, otherwise should be transported according to Class 9, Packing Group II hazardous goods.

符合UN38.3(联合国试验和标准手册,第III部分,第38.3小节)要求的锂电池可作为普通货物通过空运和海运运输,否则应按第9类包装II类危险货物运输

International regulations for transport Sea IMDG CODE (Amdt.41-22): Special provision 188.

《国际海运IMDG规则》(Amdt. 41-22):特别条款188。

ICAO / IATA: Can be shipped by air in accordance with International Civil Aviation Organization (ICAO), TI or International Air Transport Association (IATA), DGR Packing Instructions (PI) 965 Section IA appropriate of IATA DGR 65th (2024 Edition) for transportation.

国际民间航空组织/国际航空运输协会:货物可按照国际民用航空组织(ICAO), TI或国际航空运输协会(IATA), DGR 65th(2024版) 包装说明 (PI) 965 Section IA 相关规定进行空运。

UN number: UN3480

联合国危险货物编号: UN3480

UN Proper shipping name: Lithium ion batteries or Lithium ion batteries contained in equipment or Lithium ion batteries packed with equipment, battery-powered vehicle or battery-powered equipment.

联合国运输名称: 锂离子电池或锂离子电池安装在设备中或锂离子电池与设备包装在一起, 电池供电的车辆或电池供电的设备。

Transport hazard classification: Class 9 lithium battery hazard

联合国危险运输危险级别: 第九类锂电池危险品

Packing group (if applicable): Packing Group II

包装组（如果可能）：II级包装

Marine pollutant (Yes/No): No

海洋污染物（是/否）：否

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): No information available.

散装运输(根据《73/78 防污公约》附件二及《国际散化规则》): 无可用资料

Special precautions: No information available.

特别预防措施：无可用资料

Section 15 - Regulatory Information

第 15 节 - 法规信息

OSHA hazard communication standard (29 CFR 1910.1200)

职业安全与健康管理局危险通讯标准 (29 CFR 1910.1200)

_____ Hazardous 有害的

_____√_____ Non-hazardous 无害的

Section 16 - Other Information

第 16 节 - 其他信息

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