

Report No.: 18270BC20162004  
报告编号

# MSDS REPORT

## MSDS 报告

Client Name : EcoFlow Innovation Ltd.  
委托单位 : 深圳市正浩智造科技有限公司

Address : Plant A201, Founder Technology Industrial Park, Shiyan  
地址 : Sub-district, Bao'an District Shenzhen, Guangdong 518000  
China  
深圳市宝安区石岩街道龙腾社区松白公路北侧方正科技工业  
园厂房 A201

Product Name : Portable Power Station  
产品名称 : 移动储能站


Date : Jun. 02, 2022  
日期 : 2022 年 06 月 02 日

**Shenzhen Anbotech Compliance Laboratory Limited**  
**深圳安博检测股份有限公司**

**Shenzhen Anbotech Compliance Laboratory Limited**

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Code: AB-BAT-11-b

 Hotline  
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## MATERIAL SAFETY DATA SHEET

## 材料安全数据清单

## 1. Chemical Product and Company Identification产品及申请公司信息

Sample name: Portable Power Station  
样品名称 移动储能站

Sample model: EFD330-EB  
样品型号

Rating: Nominal Voltage 标称电压: 51.2V  
规格 Rated Capacity 额定容量: 20Ah, 1024Wh  
Weight 重量: 9.7kg

Manufacturer: EcoFlow Innovation Ltd.  
制造商 深圳市正浩智造科技有限公司

Address: Plant A201, Founder Technology Industrial Park, Shiyan  
制造商地址 Sub-district, Bao'an District Shenzhen, Guangdong 518000 China  
深圳市宝安区石岩街道龙腾社区松白公路北侧方正科技工业园厂房 A201

Factory: EcoFlow Innovation Ltd.  
工厂 深圳市正浩智造科技有限公司

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## 2. Composition/Information on Ingredients原料成分信息

Chemical Name 化学名称	Percent of Content 含量百分比	CAS No. CAS 编号
Lithium Cobalt Oxide 钴酸锂(LiCoO <sub>2</sub> )	25%~35%	12190-79-3
Graphite 石墨(C)	15%~20%	7782-42-5
Polyvinylidene Fluoride 聚偏氟乙烯(PVDF)	1%~5%	24937-79-9
Acetylene Black 乙炔黑(SP)	0.5%~3%	1333-86-4
Aluminum 铝(Al)	21%~23%	7429-90-5
Copper 铜(Cu)	10%~11%	7440-50-8
Lithium hexafluorophosphate 六氟磷酸锂(LiPF <sub>6</sub> )	10%~15%	21324-40-3

## 3. Hazards Summarizing 危险概述

Danger sort 危险类别: N/A

Routes of entry 进入途径:

1. Eyes and Skin – When leaking, the electrolyte solution contained in the battery irritates to ocular tissues and the skin.  
眼睛和皮肤 – 当电池泄漏时, 电池内部的电解液会刺激眼膜和皮肤, 甚至有疼痛感。
2. Inhalation—Respiratory (and eye) irritation may occur if fumes are released due heat or an abundance of leaking batteries.  
吸入 – 电池大量泄漏产生热量导致冒烟, 吸入会刺激呼吸系统。
3. Ingestion – The ingestion of the battery can be harmful. Content of open battery can cause serious chemical burns of mouth, esophagus and gastrointestinal tract.  
吞食 – 吞食电池对身体有很大伤害。电池里含的物质会引起嘴、食道和胃肠道 化学灼伤。

Health harm 健康损害:

Exposure to leaking electrolyte from ruptured or leaking battery can cause 电池破裂导致电解液外漏会导致以下伤害:

1. Inhalation—Burns and irritation of the respiratory system, coughing, wheezing, and shortness of breath.  
吸入—灼伤或刺激呼吸系统, 可能会产生咳嗽、喘息和呼吸浅短等现象。
2. Eyes—Redness, tearing, burns. The electrolyte is corrosive to all ocular tissues.  
眼睛—红肿, 疼痛, 灼伤。电解液会腐蚀视网膜。

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3. Skin—The electrolyte is corrosive and causes skin irritation and burns.  
皮肤—电解液有腐蚀性，会刺激皮肤甚至灼伤皮肤。
4. Ingestion—The electrolyte solution causes tissue damage to throat and gastrointestinal track.  
吞食—电解液会导致咽喉组织损伤和胃肠道损伤。

**Environment harm 环境危害:** Not necessary under conditions of normal use. 正常使用条件下没有危害。

**Explosion danger 爆炸危险:** The battery may be explosive at high temperature (above 60°C) or exposing to the fire. 电池在高温条件下（大于 60°C）或者置于火中会导致爆炸。

#### 4. First Aid Measures 急救措施

**Skin contact:** Not anticipated. If the battery is leaking and the contained material contacts the skin, flush with copious amounts of clear water for at least 15 minutes.

**Eye contact:** Not anticipated. If the battery is leaking and the contained material contacts eyes, flush with copious amounts of clear water for at least 15 minutes. Get medical attention at once.

**Inhalation:** Not anticipated. If the battery is leaking, remove to fresh air. If irritation persists, consult a physician.

**Ingestion:** Not anticipated. If the battery is leaking and the contained material is ingested, rinse mouth and surrounding area with clear water at once. Consult a physician immediately for treatment.

**皮肤接触:** 没有事先预料的，如果电池漏液接触到皮肤上，立即用大量的清水冲洗至少 15 分钟。

**眼睛接触:** 没有事先预料的，如果电池漏液接触到眼睛上，立即用大量的清水冲洗至少 15 分钟，并立即就医。

**吸入:** 没有事先预料的电池泄漏，转移到空气新鲜的地方，如果刺激性还存在，请咨询医生。

**吞食:** 没有事先预料的，如果电池漏液并且吞食了电池原料，立即用清水冲洗嘴部及周围部位，并就医治疗。

#### 5. Fire Fighting Measures 消防措施

**Unusual Fire and Explosion Hazards:** Battery may explode or leak potentially hazardous vapors subject to: exposed to excessive heat (above the maximum rated temperature as specified by the manufacturer) or fire, over-charged, short circuit, punctured and crushed.

**Hazardous Combustion Products:** Fire, excessive heat, or over voltage conditions may produce hazardous decomposition products. Damaged batteries can result in rapid heating and the release of flammable vapors.

**Extinguishing Media:** Dry chemical type extinguishers are the most effective means to extinguish a battery fire. A CO<sub>2</sub> extinguisher will also work effectively.

**Fire Fighting Procedures:** Use a positive pressure self-contained breathing apparatus if batteries are involved in a fire. Full protective clothing is necessary. During water application, caution is advised as burning pieces of flammable particles may be ejected from the fire.

**异常着火和爆炸危险:** 电池爆炸或漏液可能是由以下原因导致: 暴露于高温环境 (超过制造商规定的最大额定温度) 或者火中, 电池过充电, 短路, 刺穿和挤压。

**产品烧毁危害:** 着火, 过热或者过压条件可能会导致产品分解。损坏的电池会导致快速升温 and 释放可燃性气体。

**灭火仪器:** 对于电池着火灭火最有效的是干燥的化学型灭火器, 二氧化碳灭火器也可。

**消防程序:** 如果火灾中有电池, 要使用正压呼吸装置, 全防护服是必不可缺的, 在使用水设备时要小心谨慎, 因为燃烧的一些可燃性颗粒会从火中喷射出。

## 6. Accidental Release Measures 意外泄漏措施

The material contained within the battery would only be released under abusive conditions. In the event of battery rupture and leakage, collect all the released materials that are not hot or burning in an appropriate waste disposal container while wearing proper protective clothing and ventilate the area. Placed in approved container and disposed according to the local regulations.

电池内部的原料只会在恶劣条件下释放。万一电池破裂和泄漏, 收集所有不热和燃烧后的残渣置于废料处理箱, 要穿上防护服和在通风的地方进行。放置在被批准的容器并按照规定处理废料。

## 7. Handling and Storage 操作和贮存

### Handling 操作:

1. Batteries are designed to be recharged. However, improperly charging a battery may cause the battery to flame. When charging the battery, use dedicated chargers and follow the specified conditions.


电池被设计为可充电的, 然而不正确的充电方式可能会导致电池着火。当给电池充电时, 要使用专用的充电器并按照指定的充电条件进行。

2. Never disassemble or modify a battery. 不拆解电池。
3. Do not immerse, throw, and wet a battery in water. 不浸没、投掷和用水弄湿电池。
4. Should a battery unintentionally be crushed, thus releasing its contents, rubber gloves must be used to handle all battery components. Avoid the inhalation of any vapors that may be emitted. 如果电池被无意挤压而导致内部物质释放, 必须带上橡胶手套处理所有的电池成分, 避免吸入释放的任何气体。
5. Short circuit causes heating. In addition, short circuit reduces the life of the battery

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and can lead to ignition of surrounding materials. Physical contact with to short-circuited battery can cause skin burn. 短路会引起电池过热。此外，短路会使电池寿命大大减少，甚至会导致周围材料着火。身体接触短路的电池会导致皮肤灼伤。

6. Avoid reversing the battery polarity, which can cause the battery to be damaged or flame. 避免颠倒电池极性，可能会引起电池损坏或者燃烧。
7. In the event of skin or eye exposure to the electrolyte, refer to Section 4, First Aid Measures. 如果皮肤或者眼睛接触到电解液，参考第四项并立即采取急救措施。

### Storage 贮存:

1. Batteries should be separated from other materials and stored in a noncombustible, well ventilated, sprinkler-protected structure with sufficient clearance between walls and battery stacks. Do not place batteries near heating equipment, nor expose to direct sunlight for long periods. 电池应该和其他材料分开并且贮存在通风且不易燃烧的地方。自动灭火装置应与墙和电池组保持足够的间隙。不要把电池靠近加热装置，或者直接长时间的暴露于阳光直射的区域。
2. Do not store batteries above 35°C or below -20°C. Store batteries in a cool (about 20±5°C) in a long time, dry and ventilated area that is subject to little temperature change. Elevated temperatures can result in reduced battery cycle life. Battery exposure to temperatures in excess of 60°C will result in the battery venting flammable liquid and gases. 不要在35°C以上和-20°C以下的环境贮存电池。电池应该贮存在干燥的、通风良好的阴凉区域（大约20±5°C）。升高温度会导致电池循环寿命减少。电池暴露于60°C以上的温度可能会导致电池泄漏可燃性液体和气体。
3. Keep batteries in original package until use and do not jumble them. 保持电池最原始的包装直到使用时，不要把电池弄混乱。

## 8. Exposure Controls/Personal Protection 暴露控制/自我防护

**Engineering Controls:** Keep away from heat and open flame.

**Ventilation:** Not necessary under conditions of normal use. In case of abuse, use adequate mechanical ventilation (local exhaust) for the battery that vent gas or fumes.

**Respiratory Protection:** Not necessary under conditions of normal use. If battery is burning, leave the area immediately. During fire fighting fireman should use self-contained breathing, full-face respiratory equipment. Fires may be fought but only from safe fire fighting distance, evacuate all persons from the area of fire immediately.


**Eye Protection:** Not necessary under conditions of normal use. Use safety glasses with side shields if handling a leaking or ruptured battery.

**Body Protection:** Not necessary under conditions of normal use. Use rubber apron

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and protective working in case of handling a leaking of ruptured battery.

**Protective Gloves:** Not necessary under conditions of normal use. Use chemical resistant rubber gloves if handling a leaking or ruptured battery.

**Others:** Use good chemical hygiene practice. Wash hands thoroughly after cleaning-up a battery spill caused by leaking battery. No eating, drinking, or smoking in battery storage area.

**工程控制:** 远离高温和明火。

**通风设备:** 正常使用条件下是不必要的。为了防止不合理的滥用,要使用合适的机械通风设备排出电池产生的气体和黑烟。

**呼吸防护:** 正常使用条件下是不必要的。如果电池着火,立即远离着火区域。在灭火期间要使用自给自足的全脸防护的呼吸装置。要保持安全的灭火距离并立即疏散着火区域的所有人员。

**眼睛防护:** 正常使用条件下是不必要的。处理泄漏或者破裂的电池时要戴上有边罩的防护眼镜。

**身体防护:** 正常使用条件下是不必要的。处理泄漏或者破裂的电池时要穿上有橡胶围裙或者安全工作服。

**防护手套:** 正常使用条件下是不必要的。处理泄漏或者破裂的电池时要戴上抗化学腐蚀的橡胶手套。

**其他:** 保持良好的化学卫生习惯。清理完泄漏电池的漏液后要彻底地清洗手。在贮存电池的区域不吃东西,不喝酒,不吸烟。

## 9. Physical and Chemical Properties 物理和化学特性

State 状态:	Solid 固体
Odor 气味:	N/A
PH 值:	N/A
Vapor pressure 气压:	N/A
Vapor density 气体密度:	N/A
Boiling point 沸点:	N/A
Solubility in water 在水中的溶解度:	Insoluble 不溶
Specific gravity 比重:	N/A
Density 密度:	N/A

## 10. Stability and Reactivity 稳定性和反应活性

**Stability:** Stable

**Conditions to Avoid:** Do not heat, throw into fire, disassemble, short circuit, immerse in water or overcharge, etc.

**Incompatibility:** None during normal operation. Avoid exposure heat, open flame and



corrosives.

**Hazardous Polymerization:** Will not occur.

**Hazardous Decomposition Products:** The battery may release irritative gas once the electrolyte leakage.

**稳定性:** 稳定

**避免条件:** 不能加热, 不要置于火中, 不随便拆解, 不短路, 不浸入水中, 不过充等。

**不适用性:** 正常操作条件下没有。避免暴露在高温、明火和腐蚀性物质环境中。

**聚合物危害:** 不会发生。

**拆解产品危害:** 一旦电解液泄漏, 电池会挥发出刺激性气体。

## 11. Toxicological Information 有害物质信息

The battery does not elicit toxicological properties during routine handling and use. If the battery is opened through misuse or damage, discard immediately. Internal components of cell are irritant and sensitization.

**Irritancy:** The electrolytes contained in this battery can irritate eyes with any contact. Prolonged contact with the skin or mucous membranes may cause irritation.

**Sensitization:** No information is available.

**Teratogenicity:** No information is available.

**Carcinogenicity:** No information is available.

**Mutagenicity:** No information is available.

**Reproductive toxicity:** No information is available.

电池在正常的操作和使用中不能有发出有毒物质。如果由于不正确的使用或破坏导致电池裂开, 立即丢掉。电芯内部成分有刺激性甚至诱发过敏。

**刺激性:** 电池内部的电解液会刺激眼睛。皮肤或黏膜长时间接触或产生刺激效应。

**过敏:** 没有可用的信息。

**致畸胎性:** 没有可用的信息。

**致癌性:** 没有可用的信息。

**诱变性:** 没有可用的信息。

**生殖毒性:** 没有可用的信息

## 12. Ecological Information 生态信息

1. When properly used and disposed, the battery does not present environmental hazard.

正确使用电池时不会造成环境损害。

2. The battery does not contain mercury, cadmium, or lead.

电池不能含有汞、镉、铅。

3. Do not let internal components enter marine environment. Avoid releasing to water



ways, wastewater or ground water.

不要让电池内部成分进入水生态。避免排入水路系统、废水和地下水中。

### 13. Disposal Considerations 废弃处理

1. Disposal of the battery should be performed by permitted, professional disposal firms knowledgeable in Federal, State or Local requirements of hazardous waste treatment and hazardous waste transportation. 处理电池要有许可，在联邦、国家或者当地危害物质处理部门和危害物质运输部门要求的处理知识。
2. The battery should be completely discharged prior to disposal and/or the terminals taped or capped to prevent short circuit. When completely discharged it is not considered hazardous. 处理电池之前要完全放电或者把电池末端用胶带粘上防止短路。完全放电的电池被认为是没有危害的。
3. The battery contains recyclable materials. Recycling options available in your local area should be considered when disposing of this product, through licensed waste Carrier.

电池包含可循环利用的材料。在当地回收利用这些处理掉的产品时，要取得废弃物处理的授权。

### 14. Transport Information 运输信息

According to PACKING INSTRUCTION 965 ~ 967 of IATA DGR 63rd Edition for transportation, the special provision 230 of IMDG (inc Amdt 40-20). The batteries should be securely packed and protected against short-circuits. Examine whether the package of the containers are integrate and tighten closed before transport. Take in a cargo of them without falling, dropping, and breakage. Prevent collapse of cargo piles. Don't put the goods together with oxidizer and chief food chemicals. The transport vehicle and ship should be cleaned and sterilized before transport. During transport, the vehicle should prevent exposure, rain and high temperature. For stopovers, the vehicle should be away from fire and heat sources. When transported by sea, the assemble place should keep away from bedroom and kitchen, and isolated from the engine room, power and fire source. Under the condition of Road Transportation, the driver should drive in accordance with regulated route, don't stop over in the residential area and congested area.

根据包装说明的 IATA DGR 第 63 期 965 ~ 967 运输、IMDG 的特殊条款 230 (inc Amdt 40-20)。电池应牢固地填充，防止短路。检查集装箱的包装是否在运输前整合并拧紧。确定没有一个货物掉落、跌落、和破损，防止货物堆崩溃。不要把货物与氧化剂，食品放在一起。运输车辆和船舶在运输前应清洗和消毒，运输车辆应避免接触雨水和高温。停留时，

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车辆应远离火和热源。海运时,装配位置应远离卧室和厨房,并从机舱、电源和火源处隔离。公路运输情况下,司机开车应该按照规定路线,不要在居民区和人口稠密区停留。

**(a) UN number UN 编号**

3480&amp;3481

**(b) UN Proper shipping name UN 适当的运输名称**

LITHIUM ION BATTERIES (including lithium ion polymer batteries) or; LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or LITHIUM ION BATTERIES PACKED WITH EQUIPMENT (including lithium ion polymer batteries)

锂离子电池(包括锂离子聚合物电池); 或内置在设备中的锂离子电池或与设备包装在一起的锂离子电池(包括锂离子聚合物电池)。

**(c) Packing Instruction (if applicable)包装方式 (如果适用)**

965 IA, 966 I, 967 I

**(d) Marine pollutant 海洋污染物(Yes/No)**

No

**(e) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)**

散装运输

No information available.无可用信息。

**(f) Special precautions 特别预防措施**

No information available.无可用信息。

**15. Regulatory Information 监管信息**

The transport of rechargeable lithium-ion batteries regulated by the united nations as detailed in the “model Regulations on the transport of dangerous Goods Ref. ST/SG/AC.10/1 Revision 21 2019”.

Defined by UN in the “Recommendations on the transport of Dangerous Goods Chapter 38.3 Manual of Tests and Criteria Ref. ST/SG/AC.10/11 Rev.7 2019”. The Lithium-ion Cells and the battery Packs may or may not be assigned to the UN No. 3480 Class-9 that is restricted for transport.

可充电锂离子电池的运输受联合国的统一监管, 详见“关于危险货物运输的新型法规参考 ST / SG / AC.10/1 21版本 2019”。

联合国在“关于危险货物第38.3章试验和标准手册参考ST / SG / AC.10 / 11第7版 2019”里明确规定, 锂离子电芯和电池组有可能或可能不被划分到UN3480 第九类危险品(运输受限)。



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**16. Other Information其他信息****Prepared Department 申请商:** EcoFlow Innovation Ltd.

深圳市正浩智造科技有限公司

-- End of report --

-- 报告结束 --





中国认可  
国际互认  
检测  
TESTING  
CNAS L3503

Report No.: 18270BC20162001  
报告编号

# Lithium Battery UN38.3 Test Report

## 锂电池 UN38.3 测试报告

**Client Name** : EcoFlow Innovation Ltd.  
**委托单位** : 深圳市正浩智造科技有限公司

**Address** : Plant A201, Founder Technology Industrial Park, Shiyán  
**地址** : Sub-district, Bao'an District Shenzhen, Guangdong 518000  
China  
深圳市宝安区石岩街道龙腾社区松白公路北侧方正科技工业  
园厂房 A201

**Product Name** : Portable Power Station  
**产品名称** : 移动储能站

**Date** : Jun. 02, 2022  
**日期** : 2022 年 06 月 02 日

**Shenzhen Anbotek Compliance Laboratory Limited**  
**深圳安博检测股份有限公司**

检测专用章

**Shenzhen Anbotek Compliance Laboratory Limited**

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### 1. SAMPLE DESCRIPTION 样品描述:

Sample Name: 样品名称	Portable Power Station 移动储能站	Sample Model: 样品型号	EFD330-EB		
Manufacturer: 制造商	EcoFlow Innovation Ltd. 深圳市正浩智造科技有限公司				
Address of manufacturer: 制造商地址	Plant A201, Founder Technology Industrial Park, Shiyan Sub-district, Bao'an District Shenzhen, Guangdong 518000 China 深圳市宝安区石岩街道龙腾社区松白公路北侧方正科技工业园厂房 A201				
Factory: 工厂	EcoFlow Innovation Ltd. 深圳市正浩智造科技有限公司				
Address of factory: 工厂地址	Plant A201, Founder Technology Industrial Park, Shiyan Sub-district, Bao'an District Shenzhen, Guangdong 518000 China 深圳市宝安区石岩街道龙腾社区松白公路北侧方正科技工业园厂房 A201				
Battery Nominal Voltage: 电池标称电压	51.2V	Rated Capacity: 额定容量	20Ah 1024Wh	Trademark: 商标	ECOFLOW
Charge Current: 充电电流	10A	Maximum Continuous Charge Current: 最大持续充电电流	20A	End Charge Current: 充电截止电流	1A
Cut-off Voltage: 终止电压	40V	Maximum Continuous Discharge Current: 最大持续放电电流	60A	Limited Charge Voltage: 充电限制电压	57.6V
Cells Number: 内含电芯个数	16	Cell Model: 电芯型号	C40	Cell Rated Capacity: 电芯额定容量	20Ah
Date of Sample Received: 样品接收日期	May 23, 2022 2022 年 05 月 23 日				
Date of Test: 检测日期	May 23, 2022 to Jun. 01, 2022 2022 年 05 月 23 日 至 2022 年 06 月 01 日				
Tested by: 检测	Checked by: 审核		Approved by: 批准		

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**2. REFERENCE METHOD 参考方法**

UN "Manual of Tests and Criteria" ST/SG/AC.10/11/Rev.7/Subsection 38.3

联合国《试验和标准手册》（第 7 版）38.3 节

**3. EQUIPMENT LIST 设备清单**

Name of equipment /Model 设备名称/型号	Serial No. 编号	Due Date 校准有效期
Altitude Simulation Testing Machine 模拟高空低压试验箱 BE-DY-125	SE-132	2023-03-02
High Fast Temperature&Humidity Chamber 快速温变箱 ZJ-KSWB1506	SE-1488	2022-07-11
Electromagnetic Vibration Testing Machine 电磁式振动试验机 EV103V	SE-439	2022-09-26
Shock Testing Machine 机械冲击台 HSKT-10	SE-440	2023-02-23
High Temperature Short Circuit Test Chamber 高温短路试验箱 KY-CS50	SE-4071	2022-05-18
Impact Testing Machine 冲击试验机 BE-5060	SE-136	2022-07-11
Power Battery Detection System 动力电池检测系统 CE-7002-100V200A	SE-4087	2022-07-26
DC Power Supply 直流电源 QJ3020E	SE-1532	2022-09-02
Electronic loading 电子负载 JT6111	SE-1535	2022-09-02
TRUE RMS multimeter 台式万用表 MS8040	SE-2010	2022-05-18
Electronic Weight Meter 电子秤 TCS-300	SE-1452	2022-11-24
Temperature rise recorder 温升记录仪 34970A	SE-004	2023-03-02



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#### 4. ENVIRONMENTAL CONDITIONS OF THE TEST 环境条件

Temperature: (20±5) °C  
温度

R.H.: (25~75) %RH  
相对湿度

#### 5. TEST ITEM AND CONCLUSION 测试项目及结论

ITEM 测试项目	SAMPLE NUMBER 样品编号	STANDARD 执行标准	CONCLUSION 结论
Altitude simulation 高度模拟	B1~B4, B5~B8	ST/SG/AC.10/11/Rev. 7	PASS 通过
Thermal test 热测试			PASS 通过
Vibration 振动			PASS 通过
Shock 冲击			PASS 通过
External short circuit 外部短路			PASS 通过
Impact 撞击	C1~C5, C6~C10		PASS 通过
Overcharge 过度充电	B9~B12, B13~B16		PASS 通过
Forced discharge 强制放电	C11~C20, C21~C30		PASS 通过

##### Notes 说明:

B1~B4: Batteries at first cycle in fully charged states;

为第 1 个充放电周期完全充电状态的电池;

B5~B8: Batteries after 25 cycles ending in fully charged states;

为第 25 个充放电周期后完全充电状态的电池;

B9~B12: Batteries at first cycle in fully charged states;

为第 1 个充放电周期完全充电状态的电池;

B13~B16: Batteries after 25 cycles ending in fully charged states;

为第 25 个充放电周期后完全充电状态的电池;

C1~C5: Cells at first cycle at 50% of the design rated capacity;

为第 1 个充放电周期 50%设计额定容量状态的电芯;

C6~C10: Cells at 25 cycle at 50% of the design rated capacity;

为第 25 个充放电周期 50%设计额定容量状态的电芯;

C11~C20: Cell batteries at first cycle in fully charged states;

为第 1 个充放电周期完全充电状态的电芯;

C21~C30: Cells after 25 cycles ending in fully discharged states.

为第 25 个充放电周期后完全放电状态的电芯。



## 6. TEST METHOD 测试方法

Tests T.1 to T.5 shall be conducted in sequence on the same cell or battery. Tests T.6 and T.8 shall be conducted using not otherwise tested cells or batteries. Test T.7 may be conducted using undamaged batteries previously used in tests T.1 to T.5 for purposes of testing on cycled batteries. In order to quantify the mass loss, the following procedure is provided:

$$\text{Mass loss(\%)} = (M_1 - M_2) / M_1 \times 100$$

Where M1 is the mass before the test and M2 is the mass after the test. When mass loss does not exceed the values in Table blow, it shall be considered as "no mass loss".

小型电芯或电池必须按顺序进行试验 T.1 至 T.5。试验 T.6 和 T.8 应使用未另外试验过的电芯或电池。试验 T.7 可以使用原先在试验 T.1 至 T.5 中使用过的未损坏电池进行，以便测试交替充电放电过的电池。

质量损失依照下式计算：

$$\text{质量损失(\%)} = (M_1 - M_2) / M_1 \times 100$$

式中 M1 是实验前的质量，M2 是试验后的质量。如质量损失不超过下表所列数值，即视为“无质量损失”。

Mass M of cell or battery 电芯或电池质量 M	Mass loss limit 质量损失限值
M<1g	0.5%
1g≤M≤75g	0.2%
M>75g	0.1%

### T.1 Altitude simulation

Test cells and batteries shall be stored at a pressure of 11.6 kPa or less for at least six hours at ambient temperature (20 ± 5 °C).

Cells and batteries meet this requirement if there is no leakage, no venting, no disassembly, no rupture and no fire and if the open circuit voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states.

#### T.1 高度模拟

试验电芯和电池应在压力等于或低于 11.6 千帕和环境温度为(20±5°C) 下存放至少 6 小时。

要求电芯和电池无渗漏、无排气、无解体、无破裂、无起火，并且每个试验电芯或电池在试验后的开路电压不小于其在进行这一实验前电压的 90%。有关电压的要求不适用于完全放电状态的试验电芯和电池。

### T.2 Thermal test

Test cells and batteries are to be stored for at least six hours at a test temperature equal to 72 ± 2°C, followed by storage for at least six hours at a test temperature equal to - 40 ± 2°C. The maximum time interval between test temperature extremes is 30 minutes. This procedure is to be repeated until 10 total cycles are complete, after which all test cells and batteries are to be stored for 24 hours at ambient temperature (20 ± 5°C). For large cells and batteries the duration of exposure to the test temperature extremes should be at least 12 hours.

Cells and batteries meet this requirement if there is no leakage, no venting, no disassembly, no rupture and no fire and if the open circuit voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states.

#### T.2 热测试

试验电芯和电池应先在试验温度等于 72±2°C 的条件下存放至少 6 小时，接着再在试验温度等于-40±2°C 的条件下存放至少 6 小时。两个极端试验温度之间的最大时间间隔为 30 分钟。此程序重复进行，完成 10 次，接着将所有试验电芯和电池在环境温度（20±5°C）下存放 24 小时。对于大型电芯和电池，暴露于极端试验温度的时间至少应为 12 小时。

要求电芯和电池无渗漏、无排气、无解体、无破裂和无起火，并且每个试验电芯或电池在试验后的开路电压不小于其在进行这一试验前电压的 90%。有关电压的要求不适用于完全放电状态的试验电芯和电池。

### T.3 Vibration

Cells and batteries are firmly secured to the platform of the vibration machine without distorting the cells in such a manner as to faithfully transmit the vibration. The vibration shall be a sinusoidal waveform with a logarithmic sweep between 7 Hz and 200 Hz and back to 7 Hz traversed in 15 minutes. This cycle shall be repeated 12 times for a total of 3 hours for each of three mutually perpendicular mounting positions of the cell. One of the directions of vibration must be perpendicular to the terminal face. The logarithmic frequency sweep shall differ for cells and batteries with a gross mass of not more than 12 kg (cells and small batteries), and for batteries with a gross mass of more than 12 kg (large batteries).

For cells and small batteries: from 7 Hz a peak acceleration of 1  $g_n$  is maintained until 18 Hz is reached. The amplitude is then maintained at 0.8 mm (1.6 mm total excursion) and the frequency increased until a peak acceleration of 8  $g_n$  occurs (approximately 50 Hz). A peak acceleration of 8  $g_n$  is then maintained until the frequency is increased to 200 Hz.

For large batteries: from 7 Hz to a peak acceleration of 1  $g_n$  is maintained until 18 Hz is reached. The amplitude is then maintained at 0.8 mm (1.6 mm total excursion) and the frequency increased until a peak acceleration of 2  $g_n$  occurs (approximately 25 Hz). A peak acceleration of 2  $g_n$  is then maintained until the frequency is increased to 200 Hz.

Cells and batteries meet this requirement if there is no leakage, no venting, no disassembly, no rupture and no fire during the test and after the test and if the open circuit voltage of each test cell or battery directly after testing in its third perpendicular mounting position is not less than 90% of its voltage immediately prior to this procedure. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states.

### T.3 振动

电芯和电池紧固于振动机平台，但紧固程度不能造成电芯变形以致不能准确传递振动。振动应是正弦波形，对数频率扫描从 7 赫兹和 200 赫兹，再回到 7 赫兹，跨度为 15 分钟。这一振动过程须对三个相互垂直的电芯安装方位的每一方向重复进行 12 次，共为时 3 小时。其中一个振动方向必须与端面垂直。

作对数式频率扫描，对总质量不足 12 千克的电芯和电池（电芯和小型电池），和对 12 千克及更大的电池（大型电池）有所不同。

对电芯和小型电池：从 7 赫兹开始，保持 1  $g_n$  的最大加速度，直到频率达到 18 赫兹。然后将振幅保持在 0.8 毫米（总位移 1.6 毫米），并增加频率直到最大加速度达到 8  $g_n$ （频率约为 50 赫兹）。将最大加速度保持在 8  $g_n$  直到频率增加到 200 赫兹。

对大型电池：从 7 赫兹开始，保持 1  $g_n$  的最大加速度，直到频率达到 18 赫兹。然后将振幅保持在 0.8 毫米（总行程 1.6 毫米）并增加频率直到最大加速度达到 2  $g_n$ （频率约为 25 赫兹）。将最大加速度保持在 2  $g_n$  直到频率增加到 200 赫兹。

要求电芯和电池无渗漏、无排气、无解体、无破裂和无起火，并且每个试验电芯或电池在第三个垂直安装方位上的试验后立即测得的开路电压不小于在进行这一试验前电压的 90%。有关电压的要求不适用于完全放电状态的试验电芯和电池。

### T.4 Shock

Test cells and batteries shall be secured to the testing machine by means of a rigid mount which will support all mounting surfaces of each test battery.

Each cell shall be subjected to a half-sine shock of peak acceleration of 150  $g_n$  and pulse duration of 6 milliseconds. Alternatively, large cells may be subjected to a half-sine shock of peak acceleration of 50  $g_n$  and pulse duration of 11 milliseconds.

Each battery shall be subjected to a half-sine shock of peak acceleration depending on the mass of the battery. The pulse duration shall be 6 milliseconds for small batteries and 11 milliseconds for large batteries. The formulas below are provided to calculate the appropriate minimum peak accelerations.



Battery 电池	Minimum peak acceleration 最小峰值加速度	Pulse duration 脉冲持续时间
Small batteries 小型电池	150 g <sub>n</sub> or result of formula $\text{Acceleration}(g_n) = \sqrt{\left(\frac{100850}{\text{mass}^*}\right)}$ whichever is smaller	6 ms
Large batteries 大型电池	50 g <sub>n</sub> or result of formula $\text{Acceleration}(g_n) = \sqrt{\left(\frac{30000}{\text{mass}^*}\right)}$ whichever is smaller	11 ms

\* Mass is expressed in kilograms.

Each cell or battery shall be subjected to three shocks in the positive direction and to three shocks in the negative direction in each of three mutually perpendicular mounting positions of the cell or battery for a total of 18 shocks.

Cells and batteries meet this requirement if there is no leakage, no venting, no disassembly, no rupture and no fire and if the open circuit voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states.

#### T.4 冲击

试验电芯和电池用坚固支架紧固在试验机上，支架支撑着每个试验电池的所有安装面。

每个电芯须经受最大加速度 150 g<sub>n</sub> 和脉冲持续时间 6 毫秒的半正弦波冲击。不过，大型电芯须经受最大加速度 50 g<sub>n</sub> 和脉冲持续时间 11 毫秒的半正弦波冲击。

每个电芯须经受半正弦波冲击的峰值加速度取决于电池的质量。对小型电池的脉冲持续时间为 6 毫秒，对大型电池的脉冲持续时间为 11 毫秒。上面的公式用于计算合适的最低限度最大加速度。

每个电芯或电池须在三个相互垂直的电芯或电池安装方位的正极方向经受三次冲击，接着在负极方向经受三次冲击，总共经受 18 次冲击。

要求电芯和电池无渗漏、无排气、无解体、无破裂和无起火，并且每个试验电芯或电池在试验后的开路电压不小于其在进行这一试验前电压的 90%。有关电压的要求不适用于完全放电状态的试验电芯和电池。

#### T.5 External short circuit

The cell or battery to be tested shall be heated for a period of time necessary to reach a homogeneous stabilized temperature of 57±4°C, measured on the external case. This period of time depends on the size and design of the cell or battery and should be assessed and documented. If this assessment is not feasible, the exposure time shall be at least 6 hours for small cells and small batteries, and 12 hours for large cells and large batteries. Then the cell or battery at 57±4°C shall be subjected to one short circuit condition with a total external resistance of less than 0.1 ohm.

This short circuit condition is continued for at least one hour after the cell or battery external case temperature has returned to 57±4°C, or in the case of the large batteries, has decreased by half of the maximum temperature increase observed during the test and remains below that value.

The short circuit and cooling down phases shall be conducted at least at ambient temperature. Cells and batteries meet this requirement if their external temperature does not exceed 170°C and there is no disassembly, no rupture and no fire during the test and within six hours after the test.

#### T.5 外部短路

对于待试电芯或电池，应加温一段必要的时间，使从外壳测量的温度达到均匀的稳定温度 57±4°C，这段时间的长短取决于电芯或电池的大小和设计，对于这个持续时间应加以评估和记录。如无法进行这种评估，则小型电芯或电池的暴露时间应至少持续 6 小时，大型电芯或电池的暴露时间应至少持续 12 小时。然后，电芯或电池在 57±4°C 下经受总外电阻小于 0.1 欧姆的短路条件。



这一短路条件应在电芯或电池外壳温度回到  $57\pm4^{\circ}\text{C}$  后持续至少 1 小时, 或在大电池的情况下外壳温度降幅达试验中所观察的最高温升幅的二分之一并保持低于此温度值。

短路和降温阶段应至少相当于环境温度。

要求电芯和电池外壳温度不超过  $170^{\circ}\text{C}$ , 并且在试验过程中及试验后 6 小时内无解体, 无破裂, 无起火。

#### T.6 Impact / Crush

Impact (applicable to cylindrical cells greater than 18 mm in diameter)

The sample cell or component cell is to be placed on a flat smooth surface. A  $15.8 \pm 0.1\text{mm}$  diameter, at least 6 cm long, or the longest dimension of the cell, whichever is greater, Type 316 stainless steel bar is to be placed across the centre of the sample. A  $9.1 \pm 0.1\text{ kg}$  mass is to be dropped from a height of  $61 \pm 2.5\text{ cm}$  at the intersection of the bar and sample in a controlled manner using a near frictionless, vertical sliding track or channel with minimal drag on the falling mass. The vertical track or channel used to guide the falling mass shall be oriented 90 degrees from the horizontal supporting surface.

The test sample is to be impacted with its longitudinal axis parallel to the flat surface and perpendicular to the longitudinal axis of the  $15.8 \pm 0.1\text{mm}$  diameter curved surface lying across the centre of the test sample. Each sample is to be subjected to only a single impact.

Crush (applicable to prismatic, pouch, coin/button cells and cylindrical cells not more than 18 mm in diameter)

A cell or component cell is to be crushed between two flat surfaces. The crushing is to be gradual with a speed of approximately 1.5 cm/s at the first point of contact. The crushing is to be continued until the first of the three options below is reached.

- (a) The applied force reaches  $13 \pm 0.78\text{ kN}$ ;
- (b) The voltage of the cell drops by at least 100 mV; or
- (c) The cell is deformed by 50% or more of its original thickness.

Once the maximum pressure has been obtained, the voltage drops by 100 mV or more, or the cell is deformed by at least 50% of its original thickness, the pressure shall be released.

A prismatic or pouch cell shall be crushed by applying the force to the widest side. A button/coin cell shall be crushed by applying the force on its flat surfaces. For cylindrical cells, the crush force shall be applied perpendicular to the longitudinal axis.

Each test cell or component cell is to be subjected to one crush only. The test sample shall be observed for a further 6 h. The test shall be conducted using test cells or component cells that have not previously been subjected to other tests.

Cells and component cells meet this requirement if their external temperature does not exceed  $170^{\circ}\text{C}$  and there is no disassembly and no fire during the test and within six hours after this test.

#### T.6 撞击/挤压

撞击 (适用于直径不小于 18 毫米的圆柱形电芯)

试样电芯或组成电芯放在平坦光滑的表面上, 一根 316 型不锈钢棒横放在试样中心, 钢棒直径  $15.8 \pm 0.1$  毫米, 长度至少 6 厘米, 或电芯最长端的尺度, 取二者之长者。将一块  $9.1 \pm 0.1$  千克的重锤从  $61 \pm 2.5$  厘米高处跌落到钢棒和试样交叉处, 使用一个几乎没有摩擦的、对落体重锤阻力最小的垂直轨道或管道加以控制。垂直轨道或管道用于引导落锤沿水平支撑表面呈 90 度落下。

接受撞击的试样, 纵轴应与平坦表面平行并与横放在试样中心的直径  $15.8 \pm 0.1$  毫米弯曲表面的纵轴垂直。每一试样只经受一次撞击。

挤压 (棱柱形、袋装、硬币/纽扣电芯和直径小于 18 毫米的圆柱形电芯)

将电芯或组成电芯放在两个平面之间挤压, 挤压力度逐渐加大, 在第一个接触点上的速度大约为 1.5 厘米/秒。挤压持续进行, 直到出现以下三种情况之一:

- (a) 施加的力量达到  $13 \pm 0.78$  千牛顿;
- (b) 电芯的电压下降至少 100 毫伏; 或
- (c) 电芯变形达到原始厚度的 50%或以上。

一旦达到最大压力、电压下降 100 毫伏或更多, 或电芯变形至少达原厚度的 50%, 即可解除压力。



棱柱形或袋装电芯应从最宽的一面施压。纽扣/硬币形电芯应从其平坦表面施压。圆柱形电芯应从与纵轴垂直的方向施压。

每个试样电芯或组成电芯只做一次挤压试验。试样应继续观察 6 小时。试验应使用之间未做过其他试验的电芯或组成电芯进行。

要求电芯或组成电芯外壳温度不超过 170°C，并且在试验过程中及试验后 6 小时内无解体，无起火。

#### T.7 Overcharge

The charge current shall be twice the manufacturer's recommended maximum continuous charge current. The minimum voltage of the test shall be as follows:

(a) When the manufacturer's recommended charge voltage is not more than 18V, the minimum voltage of the test shall be the lesser of two times the maximum charge voltage of the battery or 22V.

(b) When the manufacturer's recommended charge voltage is more than 18V, the minimum voltage of the test shall be 1.2 times the maximum charge voltage.

Tests are to be conducted at ambient temperature; the duration of the test shall be 24 hours.

Rechargeable batteries meet this requirement if there is no disassembly and no fire during the test and within seven days after the test.

#### T.7 过度充电

充电电流必须是制造商建议的最大持续充电电流的两倍。试验的最小电压如下：

(a) 制造商建议的充电电压不大于 18 伏时，试验的最小电压应是电池最大充电电压的两倍或 22 伏两者中的较小者；

(b) 制造商建议的充电电压大于 18 伏时，试验的最小电压应为最大充电电压的 1.2 倍。

试验应在环境温度下进行，进行试验的时间应为 24 小时。

要求可充电电池在试验过程中和试验后 7 天内无解体，无起火。

#### T.8 Forced discharge

Each cell shall be forced discharged at ambient temperature by connecting it in series with a 12V D.C. power supply at an initial current equal to the maximum discharge current specified by the manufacturer.

The specified discharge current is to be obtained by connecting a resistive load of the appropriate size and rating in series with the test cell. Each cell shall be forced discharged for a time interval (in hours) equal to its rated capacity divided by the initial test current (in ampere).

Primary or rechargeable cells meet this requirement if there is no disassembly and no fire during the test and within seven days after the test.

#### T.8 强制放电

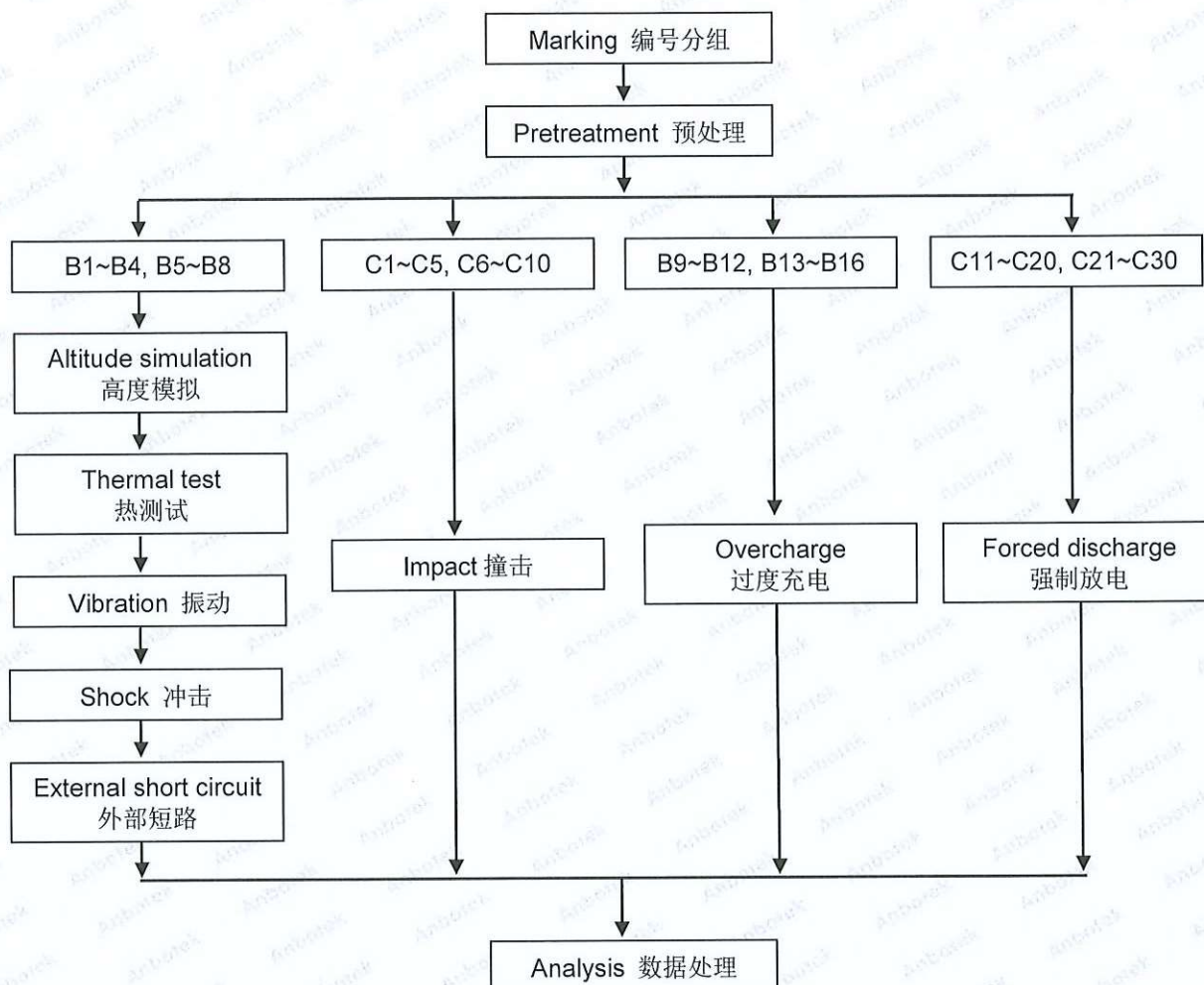
每个电芯应在环境温度下与 12 伏直流电源串联在起始电流等于制造商给定的最大放电电流的条件下强制放电。

将适当大小和额定值的电阻负荷与试验电池串联，计算得出给定的放电电流。对每个电池进行强制放电，放电时间（小时）应等于其额定容量除以初始试验电流（安培）。

要求原电芯或可充电电芯在试验过程中和试验后 7 天内无解体，无起火。



## 7. TEST PROCEDURE 测试程序



## 8. DATA 测试数据

## T.1 Altitude simulation 高度模拟

No. 编号	Pre-test 测试前		After test 测试后		Mass loss 质量亏损 (%)	Voltage loss 电压亏损 (%)	Whether leakage, venting, disassembly, rupture, fire (Y/N) 有无渗漏, 排气, 解体, 破裂和起火 (是/否)
	Mass 质量 克(kg)	Voltage 电压 伏(V)	Mass 质量 克(kg)	Voltage 电压 伏(V)			
B1	9.695	5.117	9.695	5.117	0.00	0.00	N
B2	9.664	5.119	9.663	5.119	0.01	0.00	N
B3	9.692	5.122	9.692	5.121	0.00	0.02	N
B4	9.679	5.127	9.679	5.127	0.00	0.00	N
B5	9.668	5.121	9.667	5.121	0.01	0.00	N
B6	9.681	5.119	9.681	5.118	0.00	0.02	N
B7	9.693	5.128	9.693	5.128	0.00	0.00	N
B8	9.686	5.126	9.686	5.126	0.00	0.00	N

## T.2 Thermal test 热测试

No. 编号	Pre-test 测试前		After test 测试后		Mass loss 质量亏损 (%)	Voltage Loss 电压亏损 (%)	Whether leakage, venting, disassembly, rupture, fire (Y/N) 有无渗漏, 排气, 解体, 破裂和起火 (是/否)
	Mass 质量 克(kg)	Voltage 电压 伏(V)	Mass 质量 克(kg)	Voltage 电压 伏(V)			
B1	9.695	5.117	9.693	5.107	0.02	0.20	N
B2	9.663	5.119	9.660	5.110	0.03	0.18	N
B3	9.692	5.121	9.690	5.110	0.02	0.21	N
B4	9.679	5.127	9.677	5.118	0.02	0.18	N
B5	9.667	5.121	9.665	5.113	0.02	0.16	N
B6	9.681	5.118	9.678	5.108	0.03	0.20	N
B7	9.693	5.128	9.690	5.120	0.03	0.16	N
B8	9.686	5.126	9.684	5.117	0.02	0.18	N

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## T.3 Vibration 振动

No. 编号	Pre-test 测试前		After test 测试后		Mass loss 质量亏损 (%)	Voltage Loss 电压亏损 (%)	Whether leakage, venting, disassembly, rupture, fire (Y/N) 有无渗漏, 排气, 解体, 破裂和起火 (是/否)
	Mass 质量 克(kg)	Voltage 电压 伏(V)	Mass 质量 克(kg)	Voltage 电压 伏(V)			
B1	9.693	5.107	9.692	5.107	0.01	0.00	N
B2	9.660	5.110	9.660	5.109	0.00	0.02	N
B3	9.690	5.110	9.690	5.110	0.00	0.00	N
B4	9.677	5.118	9.677	5.118	0.00	0.00	N
B5	9.665	5.113	9.665	5.113	0.00	0.00	N
B6	9.678	5.108	9.678	5.108	0.00	0.00	N
B7	9.690	5.120	9.689	5.120	0.01	0.00	N
B8	9.684	5.117	9.684	5.116	0.00	0.02	N

## T.4 Shock 冲击

Peak acceleration: 101 g<sub>n</sub>, Pulse duration: 6 ms峰值加速度: 101 g<sub>n</sub>, 脉冲时间: 6 ms

No. 编号	Pre-test 测试前		After test 测试后		Mass loss 质量亏损 (%)	Voltage Loss 电压亏损 (%)	Whether leakage, venting, disassembly, rupture, fire (Y/N) 有无渗漏, 排气, 解体, 破裂和起火 (是/否)
	Mass 质量 克(kg)	Voltage 电压 伏(V)	Mass 质量 克(kg)	Voltage 电压 伏(V)			
B1	9.692	5.107	9.692	5.107	0.00	0.00	N
B2	9.660	5.109	9.660	5.109	0.00	0.00	N
B3	9.690	5.110	9.689	5.110	0.01	0.00	N
B4	9.677	5.118	9.677	5.117	0.00	0.02	N
B5	9.665	5.113	9.665	5.113	0.00	0.00	N
B6	9.678	5.108	9.677	5.108	0.01	0.00	N
B7	9.689	5.120	9.689	5.119	0.00	0.02	N
B8	9.684	5.116	9.684	5.116	0.00	0.00	N



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## T.5 External short circuit 外部短路

No. 编号	Peak temperature (°C) 最高温度	Whether disassembly, rupture, fire (Y/N) 有无解体, 破裂, 起火 (是/否)
B1	57.6	N
B2	57.6	N
B3	57.3	N
B4	58.5	N
B5	57.5	N
B6	58.3	N
B7	58.4	N
B8	58.3	N

## T.6 Impact 撞击

No. 编号	Peak temperature (°C) 最高温度	Whether disassembly, fire (Y/N) 有无解体, 起火 (是/否)
C1	22.7	N
C2	22.9	N
C3	22.7	N
C4	23.3	N
C5	23.1	N
C6	23.0	N
C7	22.9	N
C8	22.7	N
C9	22.8	N
C10	23.4	N

## T.7 Overcharge 过度充电

No. 编号	Whether disassembly, fire (Y/N) 有无解体, 起火 (是/否)
B9	N
B10	N
B11	N
B12	N
B13	N
B14	N
B15	N
B16	N



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T.8 Forced discharge 强制放电

No. 编号	Whether disassembly, fire (Y/N) 有无解体, 起火 (是/否)
C11	N
C12	N
C13	N
C14	N
C15	N
C16	N
C17	N
C18	N
C19	N
C20	N
C21	N
C22	N
C23	N
C24	N
C25	N
C26	N
C27	N
C28	N
C29	N
C30	N



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## 9. PHOTOS OF THE SAMPLE 样品照片

Battery 电池



**EcoFlow DELTA 2 Smart Extra Battery**  
Portable Power Station/Tragbares Kraftwerk/移动储能站/ポータブル電源

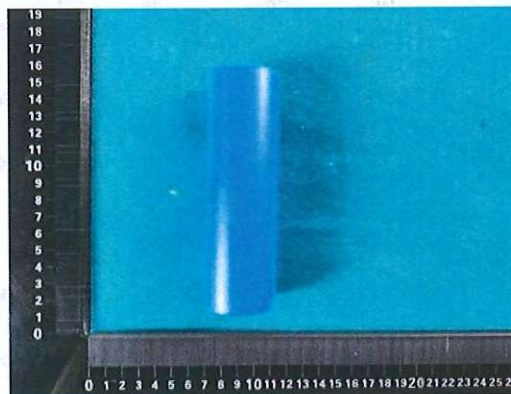
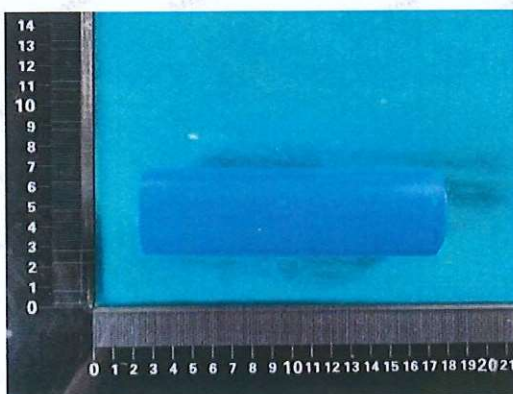
SKU/型号	ZMR330EB
Model/Modell/型号/モデル名:	EFD330-EB
Capacity/Kapazität/容量/バッテリー容量:	1024Wh 51.2V $\approx$
Extra Battery Port Input/Zusätzlicher Batterieanschluss/ 智能加电包输入功率/エクストラバッテリーポート入力:	51.2V $\approx$ 最大1024W
Extra Battery Port Output/Zusätzlicher Batterieanschluss/ 智能加电包输出功率/エクストラバッテリーポート出力:	51.2V $\approx$ 最大2048W
Discharge Temperature/Entladetemperatur/放电环境温度/使用温度範囲:	-10 ~ 45 $^{\circ}$ C
Charge Temperature/Ladetemperatur/充电环境温度/充電温度範囲:	0 ~ 45 $^{\circ}$ C
执行标准:	Q/EF 001-2021

Only For EcoFlow DELTA 2

www.ecoflow.com  
Made in China EcoFlow Inc.

CE SGS UK CA  
This device complies with Part 15 of the FCC Rules. 合格証 已發給

Cell 电芯



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## DECLARATION

### 声明

1. UN "Manual of Tests and Criteria" ST/SG/AC.10/11/Rev.7/Subsection 38.3  
联合国《试验和标准手册》（第7版）38.3节
2. Test place Lab: Shenzhen Anbotech Compliance Laboratory Limited  
Address: East of 4/F., Building A, Hourui No.3 Industrial Zone, Xixiang Street,  
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测试实验室：深圳安博检测股份有限公司  
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