UN38.3 检测报告

UN38.3 Test Report

Report No.: 报告编号：	HS260928047-R01
Product Name: 产品名称：	Lithium-ion Polymer Battery 锂离子聚合物电池
Product Model: 产品型号：	652838
Applicant: 申请商：	Shenzhen Huafurui Technology Co., Ltd. 深圳市骅福瑞科技有限公司
Classification of Test: 检测类别：	Commission Test 委托检测

深圳市华盛检测技术有限公司

Shenzhen Huasheng Test Technology Co., Ltd

Test Report 检测报告

Applicant 申请商	Name 名称	Shenzhen Huafurui Technology Co., Ltd. 深圳市骅福瑞科技有限公司		
	Address 地址	Unit 601-03, 6/F, Block A, Building 1, Ganfeng Technology Building, No. 993 Jiaxian Road, Xiangjiaotang Community, Bantian Street, Longgang District, Shenzhen, P.R. China 深圳市龙岗区坂田街道象角塘社区稼先路993号赣锋科技大厦1栋A座六层601-03单元		
Manufacturer 制造商	Name 名称	Shenzhen Mitacbattery Technology Co., LTD. 深圳市神通天下科技有限公司		
	Address 地址	4 Floor, 3 Floor, 1 Floor, 5 Floor 1 Building, No. 47, Kengwei Avenue, Shangwu Community, Shiyan Street, Baoan District, Shenzhen, Guangdong, P.R. China 深圳市宝安区石岩街道上屋社区坑尾大道 47 号厂房 1 栋五层，一层、 三层、 四层		
Factory 生产厂	Name 名称	Shenzhen Mitacbattery Technology Co., LTD. 深圳市神通天下科技有限公司		
	Address 地址	4 Floor, 3 Floor, 1 Floor, 5 Floor 1 Building, No. 47, Kengwei Avenue, Shangwu Community, Shiyan Street, Baoan District, Shenzhen, Guangdong, P.R. China 深圳市宝安区石岩街道上屋社区坑尾大道 47 号厂房 1 栋五层，一层、 三层、 四层		
	Tel. 电话	0755-29163899	E-mail 邮箱	luhaihua@mitacbattery.com
	Website 网址	--		
Testing Laboratory 检测实验室	Name 名称	Shenzhen Huasheng Test Technology Co., Ltd. 深圳市华盛检测技术有限公司		
	Address 地址	101 and 201, No. 48, Rifu Road, East Area, Baishixia Community, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China 广东省深圳市宝安区福永街道白石厦社区东区日富路 48 号 101、201		
	Tel. 电话	400-801-8821	E-mail 邮箱	huasheng@huashengtest.com
	Website 网址	www.huashengtest.com		
Test standard 检测标准	Section 38.3 of the Amendment 1 of the Eighth revised edition of the UNITED NATIONS Manual of Test and Criteria (ST/SG/AC.10/11/Rev.8/Amend.1/Section 38.3) 联合国《试验和标准手册》第八版修订1第38.3节			
Test conclusion 检测结论	The inspected items meet the standard requirements 所检项目满足标准要求			
Issue date 签发日期	2026-10-19			
Tested by 主检	Jax Gao 高德荣	Reviewed by 审核	Lan Zu 傅安汉	Approved by 批准 Alice Yan 严浩兰

Alice Yan严浩兰..... General Manager总经理

Product information 产品信息			
Name of sample 样品名称	Lithium-ion Polymer Battery 锂离子聚合物电池	Model 型号	652838
Ratings 额定参数	3.85V 1000mAh 3.85Wh	Appearance 样品外观	Approximate Silver Cuboid 银色近长方体
Size 样品尺寸	38.0mm×28.0mm ×6.5mm (L×W×T)	Mass 样品质量	约/Approx.: 12.59g
Battery type 电池类型	Single Cell Li-ion Battery 单电芯锂离子电池	Trade mark 商标	--
Model of Inner cell 内部电池型号	652838	Parameters of Inner cell 内部电池参数	3.85V 1000mAh 3.85Wh

Test information 测试信息			
Receiving Date 接样日期	2026-09-28	Testing Date 测试日期	2026-09-29~2026-10-19
Test item 检测项目		Sample No.样品编号	Test result检测结果
T.1 Altitude simulation 高度模拟		B01~B05, B06~B10	Pass 合格
T.2 Thermal test 温度试验		B01~B05, B06~B10	Pass 合格
T.3 Vibration 振动		B01~B05, B06~B10	Pass 合格
T.4 Shock 加速度冲击		B01~B05, B06~B10	Pass 合格
T.5 External Short Circuit 外部短路		B01~B05, B06~B10	Pass 合格
T.6 ☐Impact 撞击 / ☒Crush 挤压		C01~C05, C06~C10	Pass 合格
T.7 Overcharge 过充电		B11~B14, B15~B18	Pass 合格
T.8 Forced discharge 强制放电		C11~C20, C21~C30	Pass 合格

Sample pretreatment/样品预处理：

B01~B05, B11~B14.....: Batteries at first cycle, in fully charged state.
第 1 个充放电周期完全充电状态的电池。

B06~B10, B15~B18.....: Batteries after 25th cycle, in fully charged state.
第 25 个充放电周期完全充电状态的电池。

C01~C05.....: Cells at first cycle at 50% of the design rated capacity.
第 1 个充放电周期充电到设计额定容量的 50%的电芯。

C06~C10.....: Cells after 25th cycle at 50% of the design rated capacity.
第 25 个充放电周期充电到设计额定容量的 50%的电芯。

C11~C20.....: Cells at first cycle, in fully discharged state.
第 1 个充放电周期完全放电状态的电芯。

C21~C30.....: Cells after 25th cycles, ending in fully discharged state.
第 25 个充放电周期完全放电状态的电芯。

Remark 备注： /

Test Procedure 测试程序

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.

小型电池或电池组应按顺序进行试验 T.1 至 T.5。试验 T.6 和 T.8 应使用未另外试验过的电池或电池组。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组进行，以便测试经过充放电的电池组。

About mass loss 关于质量损失：

Table 38.3.1: Mass loss limit
表 38.3.1：质量损失限值

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

In order to quantify the mass loss, the following procedure is provided:
质量损失的量化数值可用下式计算：

Mass loss 质量损失(%)=$(M_1-M_2)/M_1\times100$

where M_1 is the mass before the test and M_2 is the mass after the test. When mass loss does not exceed the values in table 38.3.1, it shall be considered as "no mass loss".

式中：M_1 是试验前的质量，M_2 是试验后的质量。如果质量损失不超过表 38.3.1 所列的数值，应视为“无质量损失”。

Test Method and Requirement 测试方法和要求

38.3.4.1 Test T.1: Altitude simulation 高度模拟

38.3.4.1.1 Purpose 目的

This test simulates air transport under low-pressure conditions.

本试验模拟在低压条件下的空运。

38.3.4.1.2 Test procedure 试验程序

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).

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

38.3.4.1.3 Requirement 要求

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.

如果无渗漏、无排气、无解体、无破裂和无起火，并且每个试验电池或电池组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%，电池和电池组即符合这一要求。有关电压的要求不适用于完全放电状态的试验电池和电池组。

38.3.4.2 Test T.2: Thermal test 温度试验

38.3.4.2.1 Purpose 目的

This test assesses cell and battery seal integrity and internal electrical connections. The test is conducted using rapid and extreme temperature changes.

本试验评估电池和电池组的密封完善性和内部电连接。试验利用迅速和极端的温度变化进行。

38.3.4.2.2 Test procedure 试验程序

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 beat least 12 hours.

试验电池和电池组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，共完成 10 次，接着将所有试验电池和电池组在环境温度(20±5°C)下存放 24 小时。对于大型电池和电池组，暴露于极端试验温度的时间至少应为 12 小时。

38.3.4.2.3 Requirement 要求

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.

如果无渗漏、无排气、无解体、无破裂和无起火，并且每个试验电池或电池组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%，电池和电池组即符合这一要求。有关电压的要求不适用于完全放电状态的试验电池和电池组。

38.3.4.3 Test T.3: Vibration 振动

38.3.4.3.1 Purpose 目的

This test simulates vibration during transport.

本试验模拟运输过程中的振动。

38.3.4.3.2 Test procedure 试验程序

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 7Hz and 200Hz and back to 7Hz 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 12kg (cells and small batteries), and for batteries with a gross mass of more than 12kg (large batteries).

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

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

电池和电池组紧固于振动机平台，但紧固程度不能造成电池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 赫兹到 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互相垂直的电池安装方位的每一方向重复进行 12 次，总共为时 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 千克的电池和电池组(电池和小型电池组)，和对 12 千克及更大的电池组(大型电池组)应有所不同。

对电池和小型电池组:从 7 赫兹开始，保持 1g 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(总偏移 1.6 毫米)，并增加频率直到最大加速度达到 8g(频率约为 50 赫兹)。将最大加速度保持在 8g 直到频率增加到 200 赫兹。

对大型电池组:从 7 赫兹开始，保持 1g 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(总偏移 1.6 毫米)，并增加频率直到最大加速度达到 2g(频率约为 25 赫兹)。将最大加速度保持在 2gn 直到频率增加到 200 赫兹

38.3.4.3.3 Requirement 要求

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.

如果试验中和试验后无渗漏、无排气、无解体、无破裂和无起火，并且每个试验电池或电池组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%，电池和电池组即符合本项要求。有关电压的要求不适用于完全放电状态的试验电池和电池组。

38.3.4.4 Test T.4: Shock 冲击

38.3.4.4.1 Purpose 目的

This test assesses the robustness of cells and batteries against cumulative shocks.

本试验评估电池和电池组对累积冲击效应的耐受程度。

38.3.4.4.2 Test procedure

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 150gn and pulse duration of 6 milliseconds. Alternatively. large cells may be subjected to a half-sine shock of peak acceleration of 50 gn 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

试验程序试验电池和电池组用坚固支架紧固在试验机上，支架支撑着每个试验电池组的所有安装面。每个电池须经受最大加速度 150gn 和脉冲持续时间 6 毫秒的半正弦波冲击。不过，大型电池须经受最大加速度 50gn 和脉冲持续时间 11 毫秒的半正弦波冲击。

每个电池须经受的正弦波冲击的最大加速度取决于电池组的质量。小型电池组的脉冲持续时间 6 毫秒，大型电池组的脉冲持续时间 11 毫秒。以下公式用于计算合适的最低限度最大加速度。

Battery 电池组	Minimum peak acceleration 最低限度最大加速度	Pulse duration 脉冲持续时间
Small batteries 小型电池组	150 gn or result of formula, whichever is smaller 150g 或公式计算，取数值较小者 Acceleration 加速度(gn)= $\sqrt{\left(\frac{100850}{\text{mass}^{a}}\right)}$	6ms
Large batteries 大型电池组	50 gn or result of formula, whichever is smaller 50g 或公式计算，取数值较小者 Acceleration 加速度(gn)= $\sqrt{\left(\frac{30000}{\text{mass}^{a}}\right)}$	11ms

[a] Mass is expressed in kilograms 质量单位为千克。

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.

每个电池或电池组须在三个互相垂直的电池或电池组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。

38.3.4.4.3 Requirement 要求

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.

如果无渗漏、无排气、无解体、无破裂和无起火，并且每个试验电池或电池组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%，电池和电池组即符合这一要求。有关电压的要求不适用于完全放电状态的试验电池和电池组。

38.3.4.5 Test T.5: External short circuit 外部短路

38.3.4.5.1 Purpose 目的

This test simulates an external short circuit.

本试验模拟外部短路。

38.3.4.5.2 Test procedure 试验程序

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.

对于待试电池或电池组，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池或电池组的大小和设计，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，则小型电池和小型电池组的暴露时间应至少 6 小时，大型电池和小型电池组的暴露时间应至少 12 小时。然后，电池或电池组应在 57±4°C 条件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池或电池组外壳温度回到 57±4°C 后继续至少 1 小时，或在大型电池组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该数值。

短路和降温阶段的温度应至少相当于环境温度。

38.3.4.5.3 Requirement 要求

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.

如果外壳温度不超过 170°C，并且在试验过程中及试验后 6 小时内无解体、无破裂，无起火，电池和电池组即符合本项要求。

38.3.4.6 Test T.6: Impact/Crush 撞击/挤压

38.3.4.6.1 Purpose 目的

These tests simulate mechanical abuse from an impact or crush that may result in an internal short circuit.

本节的试验模拟撞击或挤压等可能造成内部短路的机械性破坏。

38.3.4.6.2 Test procedure - Impact (applicable to cylindrical cells not less than 18.0 mm in diameter)

试验程序-撞击(适用于直径不小于 18.0mm 的圆柱形电池)此处直径指设计参数(例如，18650 电池的直径为 18.0mm)

NOTE: Diameter here refers to the design parameter (for example the diameter of 18650 cells is 18.0mm).

注：此处直径指设计参数(例如，18650 电池的直径为 18.0mm)

The test sample cell or component cell is to be placed on a flat smooth surface. A15.8mm±0.1mm 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 9.1kg±0.1kg mass is to be dropped

from a height of 61±2.5cm 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 15.8mm±0.1mm diameter curved surface lying across the centre of the test sample. Each sample is to be subjected to only a single impact.

试样电池或元件电池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 15.8mm±0.1mm，长度至少 6cm，或电池最长端的尺寸，取二者之长者。将一块 9.1kg±0.1kg 的重锤从 61±2.5cm 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与水平支撑表面呈 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 15.8mm±0.1mm 弯曲表面的纵轴垂直。每一试样只经受一次撞击。

38.3.4.6.3 Test Procedure - Crush (applicable to prismatic, pouch, coin/button cells and cylindrical cells less than 18.0mm in diameter)

试验程序--挤压(适用于棱柱形、袋装、硬币/纽扣电池和直径小于 18.0mm 的圆柱形电池)

NOTE: Diameter here refers to the design parameter (for example the diameter of 18650 cells is 18.0mm).

注：此处直径指设计参数(例如，18650 电池的直径为 18.0mm)

A cell or component cell is to be crushed between two flat surfaces. The crushing is to be gradual with a speed of approximately 1.5cm/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 13kN±0.78kN;

Example: The force shall be applied by a hydraulic ram with a 32mm diameter piston until a pressure of 17MPa is reached on the hydraulic ram.

(b)The voltage of the cell drops by at least 100mV; 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 100mV 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.

将电池或元件电池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 13KN±0.78KN；

例如：用一个活塞直径 32mm 的液压顶施力，直到液压顶的压力达到 17 MPa。

(b)电池的电压下降至少 100 毫伏；或

(c)电池变形达原始厚度的 50%或以上。

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

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

每个试样电池或元件电池只做一次挤压试验。试样应继续观察 6 小时。试验应使用之前未做过其他试验的电池或元件电池进行。

38.3.4.6.4 Requirement 要求

Cells and component cells meet this requirement if their external temperature does not exceed 170 °C and there is no disassembly and no fire during the test and within six hours after this test.

如果外壳温度不超过 170°C，并且在试验过程中及试验后 6 小时内无解体、无起火，电池和电池组即

符合本项要求。

38.3.4.7 Test T.7: Overcharge 过度充电

38.3.4.7.1 Purpose 目的

This test evaluates the ability of a rechargeable battery or a single cell rechargeable battery to withstand an overcharge condition.

本试验评估可充电电池组或可充电单一电池电池组承受过度充电状况的能力。

38.3.4.7.2 Test procedure 试验程序

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.

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 18V 时，试验的最小电压应是电池组最大充电电压的两倍或 22V 两者中的较小者。

(b)制造商建议的充电电压大于 18V 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。

38.3.4.7.3 Requirement 要求

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

可充电电池组如在试验过程中和试验后 7 天内无解体，无起火，即符合本项要求。

38.3.4.8 Test T.8: Forced discharge 强制放电

38.3.4.8.1 Purpose 目的

This test evaluates the ability of a primary or a rechargeable cell to withstand a forced discharge condition

本试验评估原电池或可充电电池承受强制放电状况的能力。

38.3.4.8.2 Test procedure 试验程序

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).

每个电池应在环境温度下与 12V 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)。

38.3.4.8.3 Requirement 要求

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.

原电池或可充电电池如在试验过程中和试验后 7 天内无解体，无起火，即符合本项要求。

Test Data 测试数据

Test T.1: Altitude simulation 高度模拟						Pass 合格	
Sample No. 样品编号	Open circuit voltage 开路电压(V)		Mass 质量 (☒g / ☐Kg)		Voltage ratio 电压比(%)	Mass loss 质量损失 (%)	Results 试验结果
	Before test 试验前	After test 试验后	Before test 试验前	After test 试验后			
B01	4.373	4.372	12.507	12.506	99.977	0.008	A, B
B02	4.379	4.378	12.506	12.506	99.977	0.000	A, B
B03	4.370	4.369	12.525	12.524	99.977	0.008	A, B
B04	4.380	4.378	12.540	12.539	99.954	0.008	A, B
B05	4.374	4.372	12.531	12.530	99.954	0.008	A, B
B06	4.374	4.372	12.574	12.574	99.954	0.000	A, B
B07	4.371	4.368	12.537	12.537	99.931	0.000	A, B
B08	4.373	4.372	12.518	12.518	99.977	0.000	A, B
B09	4.370	4.368	12.584	12.584	99.954	0.000	A, B
B10	4.380	4.379	12.529	12.528	99.977	0.008	A, B

Remark备注：
A - No leakage, No venting, No short-circuit, No rupture, No explosion, No fire / 无渗漏、无排气、无解体、无破裂和无起火。
B - The open circuit voltage after testing is not less than 90% / 试验后的开路电压不小于试验前电压的90%。

Test T.2: Thermal test 温度试验						Pass 合格	
Sample No. 样品编号	Open circuit voltage 开路电压(V)		Mass 质量 (☒g / ☐Kg)		Voltage ratio 电压比(%)	Mass loss 质量损失 (%)	Results 试验结果
	Before test 试验前	After test 试验后	Before test 试验前	After test 试验后			
B01	4.371	4.326	12.506	12.505	98.970	0.008	A, B
B02	4.377	4.346	12.506	12.505	99.292	0.008	A, B
B03	4.369	4.320	12.524	12.522	98.878	0.016	A, B
B04	4.378	4.347	12.539	12.537	99.292	0.016	A, B
B05	4.371	4.326	12.530	12.529	98.970	0.008	A, B
B06	4.371	4.336	12.574	12.573	99.199	0.008	A, B
B07	4.367	4.322	12.537	12.535	98.970	0.016	A, B
B08	4.371	4.338	12.518	12.516	99.245	0.016	A, B
B09	4.368	4.340	12.584	12.582	99.359	0.016	A, B
B10	4.378	4.351	12.528	12.526	99.383	0.016	A, B

Remark备注：
A - No leakage, No venting, No short-circuit, No rupture, No explosion, No fire / 无渗漏、无排气、无解体、无破裂和无起火。
B - The open circuit voltage after testing is not less than 90% / 试验后的开路电压不小于试验前电压的90%。

Test T.3: Vibration 振动						Pass 合格	
Sample No. 样品编号	Open circuit voltage 开路电压(V)		Mass 质量 (☒g / ☐Kg)		Voltage ratio 电压比(%)	Mass loss 质量损失 (%)	Results 试验结果
	Before test 试验前	After test 试验后	Before test 试验前	After test 试验后			
B01	4.325	4.324	12.505	12.504	99.977	0.008	A, B
B02	4.345	4.344	12.505	12.504	99.977	0.008	A, B
B03	4.319	4.318	12.522	12.522	99.977	0.000	A, B
B04	4.346	4.344	12.537	12.536	99.954	0.008	A, B
B05	4.325	4.324	12.529	12.529	99.977	0.000	A, B
B06	4.336	4.335	12.573	12.572	99.977	0.008	A, B
B07	4.321	4.320	12.535	12.535	99.977	0.000	A, B
B08	4.338	4.336	12.516	12.516	99.954	0.000	A, B
B09	4.340	4.339	12.582	12.581	99.977	0.008	A, B
B10	4.351	4.349	12.526	12.525	99.954	0.008	A, B

Remark备注：
A - No leakage, No venting, No short-circuit, No rupture, No explosion, No fire / 无渗漏、无排气、无解体、无破裂和无起火。
B - The open circuit voltage after testing is not less than 90% / 试验后的开路电压不小于试验前电压的90%。

Test T.4: Shock 冲击						Pass 合格	
Sample No. 样品编号	Open circuit voltage 开路电压(V)		Mass 质量 (☒g / ☐Kg)		Voltage ratio 电压比(%)	Mass loss 质量损失 (%)	Results 试验结果
	Before test 试验前	After test 试验后	Before test 试验前	After test 试验后			
B01	4.324	4.324	12.504	12.504	100.000	0.000	A, B
B02	4.343	4.342	12.504	12.504	99.977	0.000	A, B
B03	4.317	4.315	12.522	12.522	99.954	0.000	A, B
B04	4.344	4.343	12.536	12.535	99.977	0.008	A, B
B05	4.324	4.323	12.529	12.528	99.977	0.008	A, B
B06	4.335	4.333	12.572	12.572	99.954	0.000	A, B
B07	4.320	4.319	12.535	12.535	99.977	0.000	A, B
B08	4.335	4.333	12.516	12.516	99.954	0.000	A, B
B09	4.338	4.337	12.581	12.580	99.977	0.008	A, B
B10	4.348	4.346	12.525	12.524	99.954	0.008	A, B

Remark备注：
A - No leakage, No venting, No short-circuit, No rupture, No explosion, No fire / 无渗漏、无排气、无解体、无破裂和无起火。
B - The open circuit voltage after testing is not less than 90% / 试验后的开路电压不小于试验前电压的90%。

Test T.5: External short circuit 外部短路		Pass 合格
Sample No. 样品编号	External temperature of sample 样品表面最高温度(°C)	Results 试验结果
B01	58.5	A
B02	58.3	A
B03	58.0	A
B04	57.6	A
B05	57.8	A
B06	57.9	A
B07	58.4	A
B08	57.7	A
B09	58.4	A
B10	57.6	A

Remark备注：
A - The external temperature of sample does not exceed 170 °Cand there is no disassembly, no rupture and no fire during the test and within six hours after the test / 样品外壳温度不超过170°C，并且在试验过程中及试验后6小时内无解体、无破裂、无起火。

Test T.6 ☐Impact 撞击 / ☒Crush 挤压		Pass 合格
Sample No. 样品编号	External temperature of sample 样品表面最高温度(°C)	Results 试验结果
C01	23.3	A
C02	23.6	A
C03	23.5	A
C04	23.2	A
C05	23.4	A
C06	23.7	A
C07	23.1	A
C08	23.9	A
C09	23.5	A
C10	23.1	A

Remark备注：
A - The external temperature of sample does not exceed 170 °Cand there is no disassembly, no fire during the test and within six hours after the test / 样品外壳温度不超过170°C，并且在试验过程中及试验后6小时内无解体、无起火。

Test T.7 Overcharge 过充电	Pass 合格
Sample No.样品编号	Results 试验结果
B11	A
B12	A
B13	A
B14	A
B15	A
B16	A
B17	A
B18	A

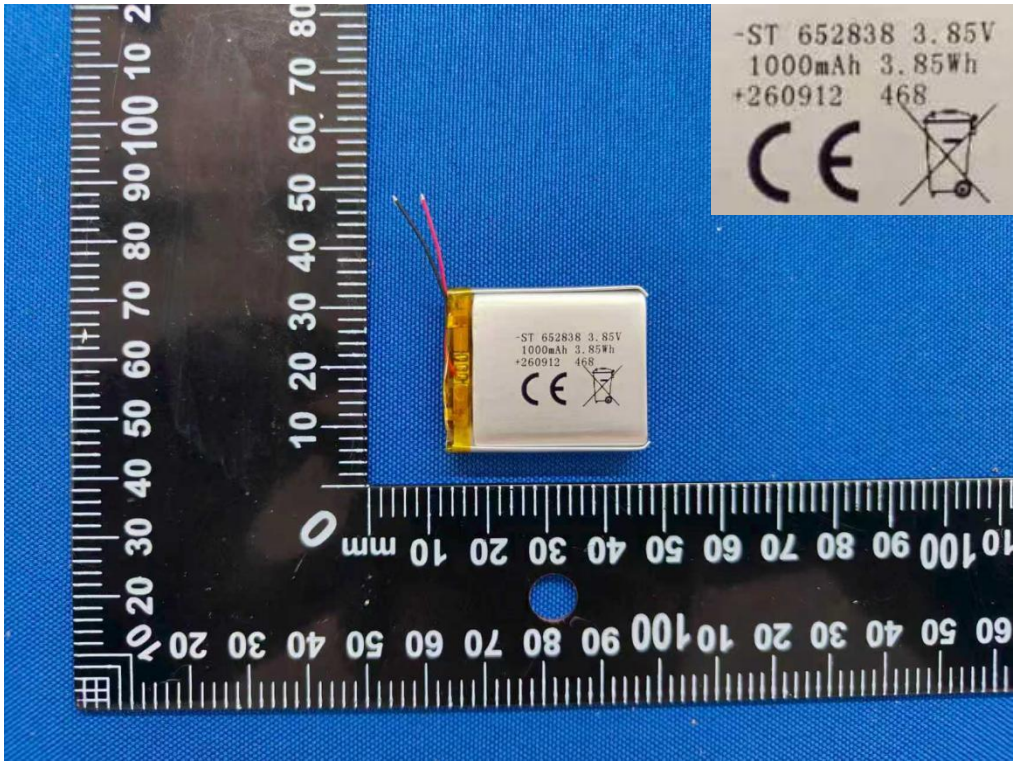
Remark备注：
A - No disassembly and no fire during the test and within seven days after the test. / 样品在试验过程中和试验后7天内无解体，无起火。

Test T.8 Forced discharge 强制放电	Pass 合格
Sample No.样品编号	Results 试验结果
C11	A
C12	A
C13	A
C14	A
C15	A
C16	A
C17	A
C18	A
C19	A
C20	A
C21	A
C22	A
C23	A
C24	A
C25	A
C26	A
C27	A
C28	A
C29	A
C30	A

Remark备注：
A - No disassembly and no fire during the test and within seven days after the test. / 样品在试验过程中和试验后7天内无解体，无起火。

Photo of the sample 样品图片

Battery /电池



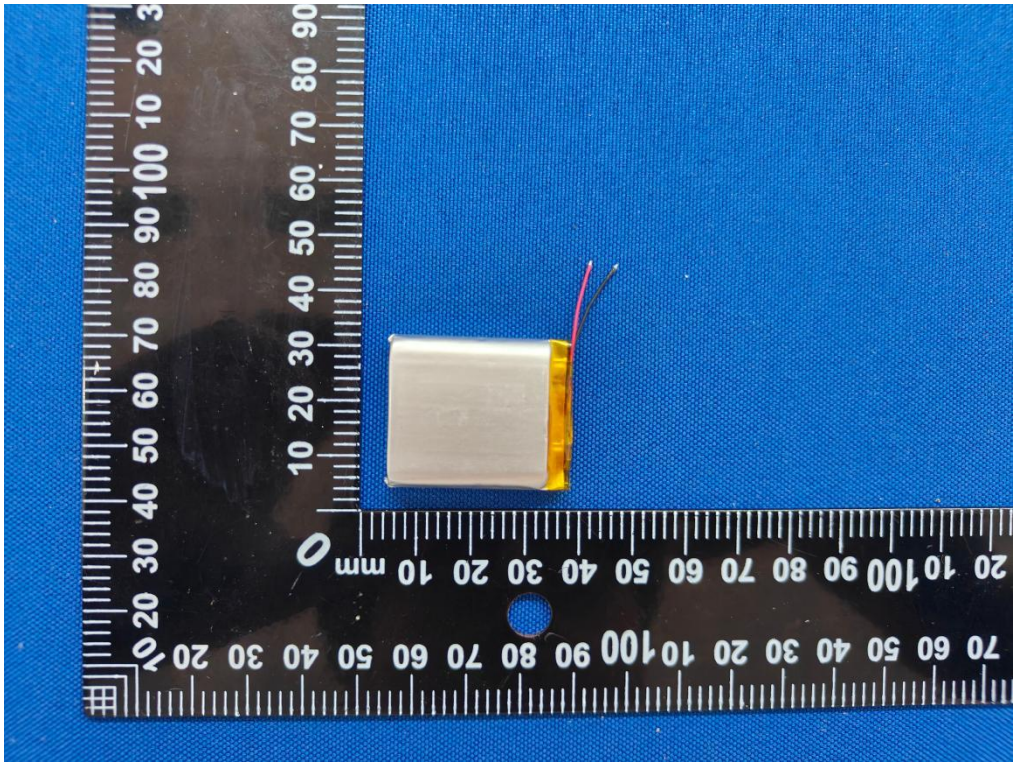
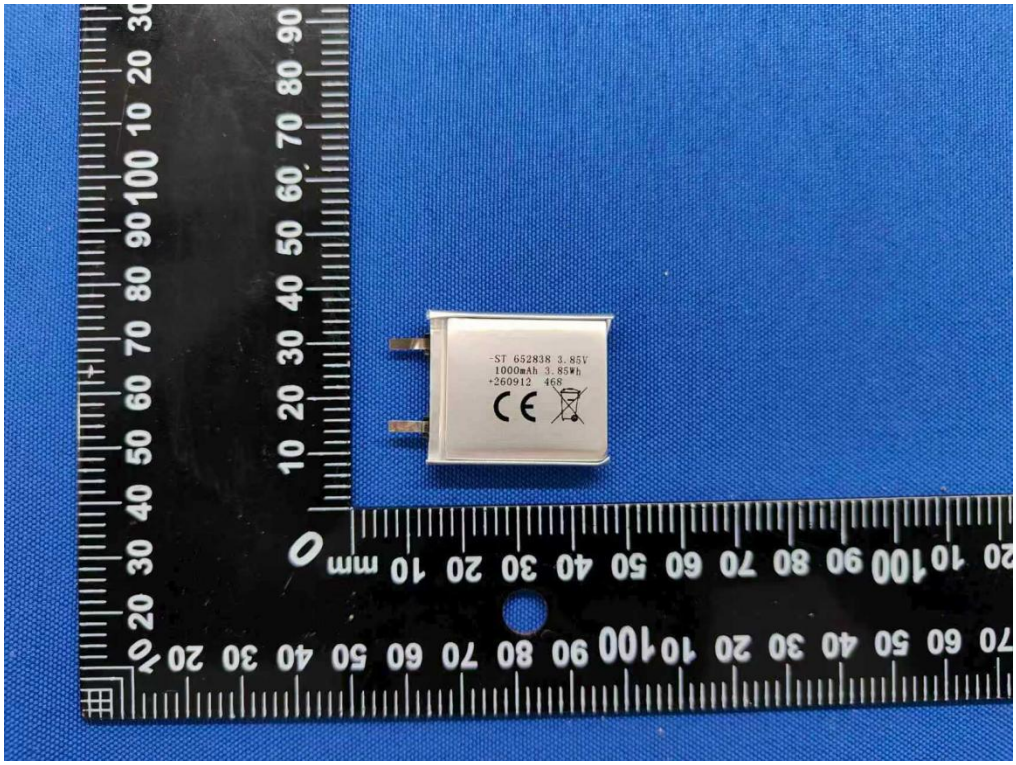
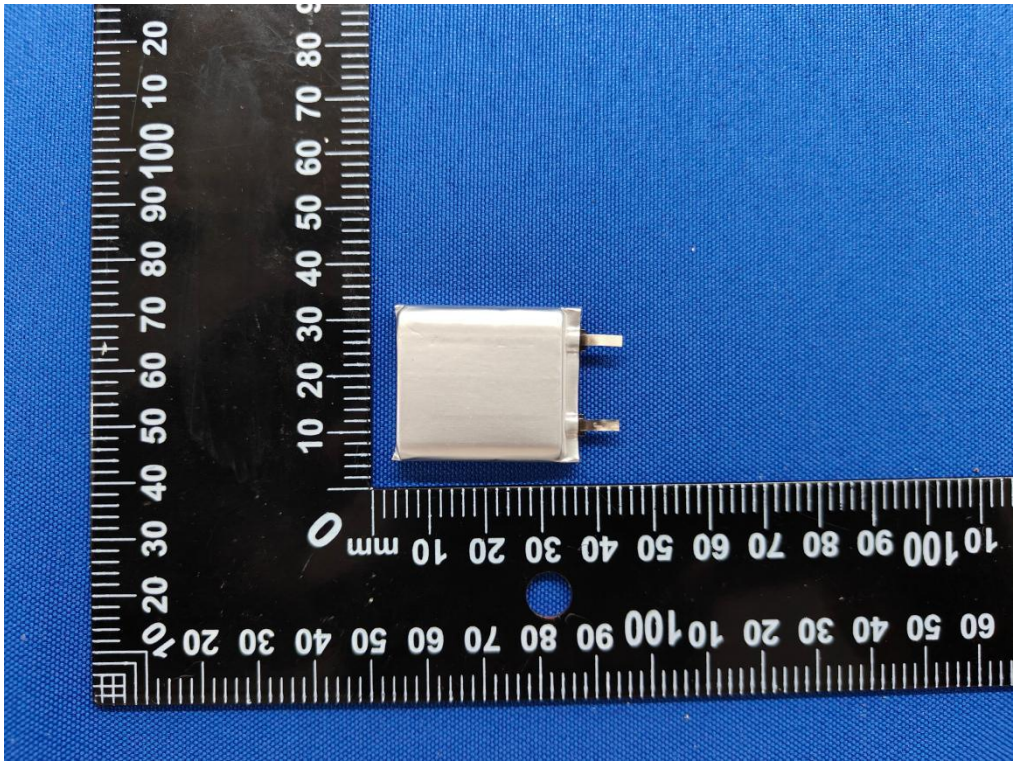


Photo of the sample 样品图片

Inner cell /内部电芯





STATEMENTS

声 明

1. The report without laboratory "Seal" is invalid.
   报告无本实验室“检测专用章”无效。

2. The copy of the report without re-stamping the laboratory "Seal" is invalid, and it is not allowed to partially copy the report without the company's permission.
   复制报告未重新加盖本实验室“检测专用章”无效，未经本实验室批准不得部分复制报告。

3. The test report is invalid without the signatures of Approver, Reviewer and Testing engineer.
   报告无测试、审核、批准人签字无效。

4. The report is invalid if altered.
   报告涂改无效。

5. If you have any objection to the test report, please notify the company in writing within l5 working days after receiving the report.
   对检测报告若有异议，请在接收报告 15 个工作日内以书面形式通知本公司受理。

6. The test results of this report only apply to the samples received.
   本报告检测结果仅适用于收到的样品。

7. Product information and customer information provided by the applicant, and laboratory is not responsible for verifying their authenticity.
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