



UN38.3 Test Report

UN38.3 检测报告

Report No.:

P23091202501

报告编号:

Name of Products: Rechargeable Li-ion Cell

产品名称: 可充电锂离子电芯

Model and Spec.:

M1140S3, 3.85V 49mAh 0.189Wh

型号规格:

Applicant: Guangdong Mic-power New Energy Co., Ltd.

委托单位: 广东微电新能源有限公司

Manufacturer: Guangdong Mic-power New Energy Co., Ltd.

生产厂商: 广东微电新能源有限公司

Date of issue:

2023-10-08

签发日期:

Shenzhen NTEK New Energy Technology Co., Ltd.**深圳市北测新能源技术有限公司**

Applicant 委托单位	Guangdong Mic-power New Energy Co., Ltd. 广东微电新能源有限公司		
Address of Applicant 委托单位地址	1F, 2F & 4F Bldg 3 Shengnuoda Industrial Park4 Xingju West Rd, Dongxing District, Dongjiang High-Tech Industrial Park Zhongkai High-tech Zone Huizhou, Guangdong 516005 China 广东惠州仲恺高新区东江高新科技产业园东兴片区兴举西路 4 号胜诺达工业园区 3 号楼第 1 层、第 2 层及第 4 层		
Manufacturer 生产厂商	Guangdong Mic-power New Energy Co., Ltd. 广东微电新能源有限公司		
Address of manufacturer 生产厂商地址	1F, 2F & 4F Bldg 3 Shengnuoda Industrial Park4 Xingju West Rd, Dongxing District, Dongjiang High-Tech Industrial Park Zhongkai High-tech Zone Huizhou, Guangdong 516005 China 广东惠州仲恺高新区东江高新科技产业园东兴片区兴举西路 4 号胜诺达工业园区 3 号楼第 1 层、第 2 层及第 4 层		
Name of Products 产品名称	Rechargeable Li-ion Cell 可充电锂离子电芯		
Model/Type 型号	M1140S3		
Ratings 额定参数	3.85V 49mAh 0.189Wh		
Date of receipt of test item 接收日期	2023-09-13		
Completion Date 完成日期	2023-09-25		
Tested according to 测试依据: United Nations Manual of Tests and Criteria, PART III, section 38.3 Lithium metal and lithium ion batteries, the seventh revised edition amendment 1(ST/SG/AC.10/11/Rev.7/Amend.1). 联合国《试验和标准手册》，第三部分，38.3 节锂金属和锂离子电池要求，第七修订版修正 1 (ST/SG/AC.10/11/Rev.7/Amend.1)			
Tests performed 测试项目: Test T.1: Altitude simulation 试验 T.1: 高度模拟 Test T.5: External short circuit 试验 T.5: 外部短路 Test T.2: Thermal Test 试验 T.2: 温度试验 Test T.6: Crush 试验 T.6: 挤压 Test T.3: Vibration 试验 T.3: 振动 Test T.8: Forced discharge 试验 T.8: 强制放电 Test T.4: Shock 试验 T.4: 冲击			
Test Conclusion 试验结论: The Rechargeable Li-ion Cell submitted by Guangdong Mic-power New Energy Co., Ltd. is tested according to the United Nations Manual of Tests and Criteria, PART III, section 38.3 Lithium metal and lithium ion batteries, the seventh revised edition amendment 1 (ST/SG/AC.10/11/Rev.7/Amend.1). Test results: PASS 由广东微电新能源有限公司提交的可充电锂离子电芯按照联合国《试验和标准手册》，第三部分，38.3 节锂金属和锂离子电池要求，第七修订版修正 1(ST/SG/AC.10/11/Rev.7/Amend.1)进行测试。 测试结果: 合格			
Tested by: 主检人:	Ryder Song 宋亚伟	宋亚伟	
Reviewed by: 审核人:	Bee Wu 吴律	吴律	
Approved by: 批准人:	Jesse Zhang 张士杰	报告单位 (盖章) Seal of NTEK	

General product information 通用产品信息:			
Model/Type 型号	M1140S3	Rated Rating 额定值	3.85V 49mAh 0.189Wh
Standard Charging Current 标准充电电流	9.8mA	Max. Charging Current 最大充电电流	147mA
Standard Discharge Current 标准放电电流	9.8mA	Max. Discharge Current 最大放电电流	49mA
Limited Charging Voltage 充电限制电压	4.4V	Cut-off Voltage 放电截止电压	3.0V
Appearance 外观	Silvery, Button 银色、扣式	Dimension (D×H) 尺寸(mm)	Φ11.2×4.25
Classification 类别	Small Lithium ion Cells 小型锂离子电池		

Sample description 样品说明			
Type 类型	Sample No. 样品编号	Sample Sub-No. 样品子编号	State of samples 样品状态
Cell 电池芯	NE230912135003-X*	001~005	Fully charged at first cycle 首次循环满电状态
		006~010	Fully charged after 25 cycles 25 次循环后满电状态
		011~015	50% of the design rated capacity at first cycle 首次循环 50%电荷状态
		016~020	50% of the design rated capacity after 25 cycles 25 次循环后 50%电荷状态
		021~030	Fully discharged at first cycle 首次循环完全放电状态
		031~040	Fully discharged after 25 cycles 25 次循环后完全放电状态
* “X” contained in Sample No. represents Sample Sub-No., it consists of three digit. 包含在样品编号中的 “X” 表示样品子编号，由 3 位数字组成。			

Test environment condition: Room temperature: 15°C-25°C; Room humidity: 40-70%

试验环境条件: 环境温度: 15°C-25°C; 环境湿度: 40-70%

Remark 备注: None 无

Summaries of testing 测试摘要:

All cell types are subjected to tests T.1 to T.6 and T.8. Tests T.1 to T.5 are conducted in sequence on the same cells. Tests T.6 and T.8 are conducted using not otherwise tested cells.

所有类型的电芯均应进行T.1至T.6和T.8项试验。电芯必须按顺序在相同的一组电芯上进行试验T.1至T.5。试验T.6和T.8应使用另外未试验过的电芯。

In order to quantify the mass loss, the following procedure is provided:

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

为了量化质量损失, 可用以下公式计算:

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

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 below, it is considered as "no mass loss".

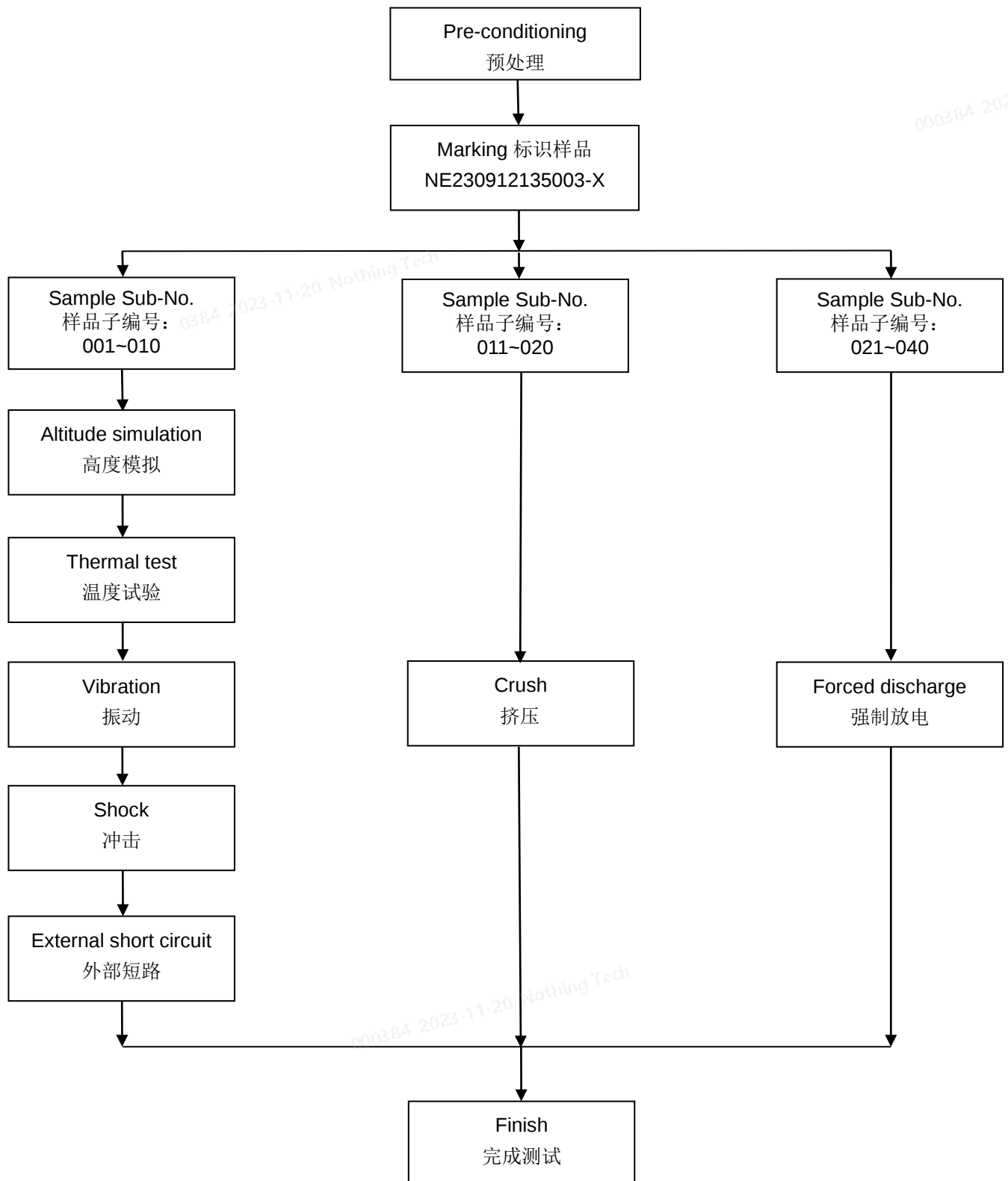
式中: M_1 是试验前的质量, M_2 是试验后的质量。如果质量损失不超过下表所列的数值, 应视为“无质量损失”。

Mass M of cell or battery 电芯或电池的质量	Mass loss limit 质量损失限值
$M < 1\text{g}$	0.5%
$1\text{g} \leq M \leq 75\text{g}$	0.2%
$M > 75\text{g}$	0.1%

In tests T.1 to T.4, cells 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 after testing is not less than 90% of its voltage immediately prior to this procedure.

在T.1至T.4的试验中, 电芯须满足无渗漏、无泄气、无解体、无破裂和无起火, 并且每个试验电芯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%。

Test Procedure 测试程序



Photos of sample 样品照片



Test results 测试结果:

Test T.1: Altitude simulation 试验T.1: 高度模拟

Test method 测试方法

Cells are stored at a pressure of 11.6 kPa or less for at least six hours at ambient temperature ($20 \pm 5^{\circ}\text{C}$).

试验电芯被放置在压力等于或低于11.6 kPa和环境温度($20\pm 5^{\circ}\text{C}$)下存放至少6小时。

Requirement 要求

Cells 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 after testing is not less than 90% of its voltage immediately prior to this procedure.

电芯须无渗漏、无泄气、无解体、无破裂和无起火，并且每个试验电芯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%。

Test Data showed in table below 测试数据见下表

Sample Sub-No. 样品子编号	Prior to test 试验前		After test 试验后		Mass loss 质量损失 (%)	Voltage after test/ voltage prior to test 试验后电压/试验前电压(%)	Results 结果
	Mass 质量 (g)	Voltage 电压 (V)	Mass 质量 (g)	Voltage 电压 (V)			
001	1.1412	4.385	1.1412	4.385	0.000	100.0	PASS 合格
002	1.1963	4.384	1.1963	4.384	0.000	100.0	PASS 合格
003	1.1779	4.386	1.1778	4.385	0.008	99.98	PASS 合格
004	1.1636	4.385	1.1636	4.385	0.000	100.0	PASS 合格
005	1.1729	4.384	1.1729	4.384	0.000	100.0	PASS 合格
006	1.1658	4.385	1.1658	4.385	0.000	100.0	PASS 合格
007	1.1724	4.386	1.1724	4.386	0.000	100.0	PASS 合格
008	1.1654	4.382	1.1654	4.382	0.000	100.0	PASS 合格
009	1.1489	4.385	1.1489	4.385	0.000	100.0	PASS 合格
010	1.1762	4.386	1.1762	4.385	0.000	99.98	PASS 合格

Notes 注释:

After the test, there is no leakage, no venting, no disassembly, no rupture and no fire.

测试后，电芯未渗漏、未泄气、未解体、未破裂和未起火。

Room temperature 环境温度: 21.2°C

Test T.2: Thermal test 试验T.2: 温度试验**Test method 测试方法**

Cells are to be stored for at least six hours at a test temperature equal to $72 \pm 2^{\circ}\text{C}$, followed by storage for at least six hours at a test temperature equal to $-40 \pm 2^{\circ}\text{C}$. The maximum time interval between test temperature extremes is 30 minutes. This procedure is to be repeated 10 times, after which all test cells are to be stored for 24 hours at ambient temperature ($20 \pm 5^{\circ}\text{C}$).

电芯放置在试验温度等于 $72 \pm 2^{\circ}\text{C}$ 的条件下存放至少6小时,接着再在试验温度等于 $-40 \pm 2^{\circ}\text{C}$ 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,接着将所有试验电芯在环境温度($20 \pm 5^{\circ}\text{C}$)下存放24小时。

Requirement 要求

Cells 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 after testing is not less than 90% of its voltage immediately prior to this procedure.

电芯须无渗漏、无泄气、无解体、无破裂和无起火,并且每个试验电芯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%。

Test Data showed in table below 测试数据见下表

Sample Sub-No. 样品子编号	Prior to test 试验前		After test 试验后		Mass loss 质量损失 (%)	Voltage after test/ voltage prior to test 试验后电压/试验前电压(%)	Results 结果
	Mass 质量 (g)	Voltage 电压 (V)	Mass 质量 (g)	Voltage 电压 (V)			
001	1.1412	4.385	1.1408	4.352	0.035	99.25	PASS 合格
002	1.1963	4.384	1.1959	4.352	0.033	99.27	PASS 合格
003	1.1778	4.385	1.1774	4.351	0.034	99.22	PASS 合格
004	1.1636	4.385	1.1632	4.348	0.034	99.16	PASS 合格
005	1.1729	4.384	1.1725	4.346	0.034	99.13	PASS 合格
006	1.1658	4.385	1.1655	4.352	0.026	99.25	PASS 合格
007	1.1724	4.386	1.1720	4.350	0.034	99.18	PASS 合格
008	1.1654	4.382	1.1650	4.351	0.034	99.29	PASS 合格
009	1.1489	4.385	1.1485	4.352	0.035	99.25	PASS 合格
010	1.1762	4.385	1.1758	4.348	0.034	99.16	PASS 合格

Notes 注释:

After the test, there is no leakage, no venting, no disassembly, no rupture and no fire.

测试后,电芯未渗漏、未泄气、未解体、未破裂和未起火。

Room temperature 环境温度: 22.0°C

Test T.3: Vibration 试验T.3: 振动**Test method 测试方法**

Cells 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 is as follows: 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.

电芯紧固于振动台面，但不得造成电芯变形，并能准确可靠地传播振动。振动应是正弦波形，对数扫描频率在7 Hz和200 Hz之间，再回到7 Hz，1次循环时间为15分钟。这一振动过程须对三个互相垂直的电芯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。

对数扫频方式：从7 Hz开始，保持1 g_n的最大加速度，直到频率达到18 Hz。然后将振幅保持在0.8mm（总位移1.6mm），并增加频率直到峰值加速度达到8 g_n（频率约为50 Hz）。将峰值加速度保持在8 g_n直到频率增加到200 Hz。

Requirement 要求

Cells 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 directly after testing in its third perpendicular mounting position is not less than 90% of its voltage immediately prior to this procedure.

测试中和测试后电芯须无渗漏、无泄气、无解体、无破裂和无起火，并且每个试验电芯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%。

Test Data showed in table below 测试数据见下表

Sample Sub-No. 样品子编号	Prior to test 试验前		After test 试验后		Mass loss 质量损失 (%)	Voltage after test/ voltage prior to test 试验后电压/试验前电压(%)	Results 结果
	Mass 质量 (g)	Voltage 电压 (V)	Mass 质量 (g)	Voltage 电压 (V)			
001	1.1408	4.352	1.1408	4.352	0.000	100.0	PASS 合格
002	1.1959	4.352	1.1958	4.350	0.008	99.95	PASS 合格
003	1.1774	4.351	1.1774	4.351	0.000	100.0	PASS 合格
004	1.1632	4.348	1.1632	4.348	0.000	100.0	PASS 合格
005	1.1725	4.346	1.1725	4.345	0.000	99.98	PASS 合格
006	1.1655	4.352	1.1655	4.352	0.000	100.0	PASS 合格
007	1.1720	4.350	1.1719	4.348	0.009	99.95	PASS 合格
008	1.1650	4.351	1.1650	4.351	0.000	100.0	PASS 合格
009	1.1485	4.352	1.1485	4.352	0.000	100.0	PASS 合格
010	1.1758	4.348	1.1758	4.347	0.000	99.98	PASS 合格

Notes 注释:

During and after the test, there is no leakage, no venting, no disassembly, no rupture and no fire.

测试中和测试后，电芯未渗漏、未泄气、未解体、未破裂和未起火。

Room temperature 环境温度: 21.8°C

Test T.4: Shock 试验 T.4: 冲击**Test method 测试方法**

Cells are secured to the testing machine by means of a rigid mount which will support all mounting surfaces of each test cell. Each cell is subjected to a half-sine shock of peak acceleration of 150 g_n and pulse duration of 6 milliseconds. Each cell is subjected to three shocks in the positive direction followed by three shocks in the negative direction of three mutually perpendicular mounting positions of the cell for a total of 18 shocks.

试验电芯用刚性支架紧固在试验装置上, 支架支撑着每个试验电芯的所有安装面。每个电芯须经受峰值加速度 150 g_n和脉冲持续时间6 ms的半正弦波冲击。每个电芯须在三个互相垂直的电芯安装方位的正方向经受三次冲击, 接着在反方向经受三次冲击, 总共经受18次冲击。

Requirement 要求

Cells 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 after testing is not less than 90% of its voltage immediately prior to this procedure.

电芯须无渗漏、无泄气、无解体、无破裂和无起火, 并且每个试验电芯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%。

Test Data showed in table below 测试数据见下表

Sample Sub-No. 样品子编号	Prior to test 试验前		After test 试验后		Mass loss 质量损失 (%)	Voltage after test/ voltage prior to test 试验后电压/试验前电压(%)	Results 结果
	Mass 质量 (g)	Voltage 电压 (V)	Mass 质量 (g)	Voltage 电压 (V)			
001	1.1408	4.352	1.1408	4.352	0.000	100.0	PASS 合格
002	1.1958	4.350	1.1958	4.350	0.000	100.0	PASS 合格
003	1.1774	4.351	1.1774	4.351	0.000	100.0	PASS 合格
004	1.1632	4.348	1.1632	4.348	0.000	100.0	PASS 合格
005	1.1725	4.345	1.1725	4.345	0.000	100.0	PASS 合格
006	1.1655	4.352	1.1655	4.352	0.000	100.0	PASS 合格
007	1.1719	4.348	1.1719	4.348	0.000	100.0	PASS 合格
008	1.1650	4.351	1.1650	4.351	0.000	100.0	PASS 合格
009	1.1485	4.352	1.1485	4.352	0.000	100.0	PASS 合格
010	1.1758	4.347	1.1758	4.347	0.000	100.0	PASS 合格

Notes 注释:

After the test, there is no leakage, no venting, no disassembly, no rupture and no fire.

测试后, 电芯未渗漏、未泄气、未解体、未破裂和未起火。

Room temperature 环境温度: 21.6°C

Test T.5: External short circuit 试验T.5: 外部短路**Test method 测试方法**

Cells to be tested are 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 and is assessed and documented. Then the cell at 57 ± 4 °C is 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 external case temperature has returned to 57 ± 4 °C.

The short circuit and cooling down phases are conducted at least at ambient temperature.

试验电芯首先被加热或恒定一段时间，使其达到 57 ± 4 °C并使其外表面温度均匀恒定在 57 ± 4 °C。该加热时间或热恒定时间的长短取决于该电芯的尺寸和设计，并同时加以评估及提供文件证明。然后该电芯在 57 ± 4 °C的条件下承受一个外部总阻抗小于0.1Ω的短路条件。

该短路测试持续到电芯外表面温度返回至 57 ± 4 °C后再保持至少1小时。

该短路和冷却阶段均被执行在 57 ± 4 °C的环境温度下。

Requirement 要求

Cells 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 test.

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、无破裂，无起火。

Test data showed in table below 测试数据见下表

Sample Sub-No. 样品子编号	Maximum outer casing temperature 电池表面最高温度 (°C)	Results 结果
001	103.4	PASS 合格
002	106.9	PASS 合格
003	100.8	PASS 合格
004	102.3	PASS 合格
005	104.4	PASS 合格
006	107.6	PASS 合格
007	110.2	PASS 合格
008	108.4	PASS 合格
009	106.4	PASS 合格
010	105.6	PASS 合格

Notes 注释:

There is no disassembly, no rupture and no fire during the test and within six hours after test.

电芯在测试中和测试后 6 小时内未解体、未破裂，未起火。

Room temperature 环境温度: 22.1°C

Test T.6: Crush 试验T.6: 挤压

Test method 测试方法

A 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 kN $\pm$ 0.78 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 is 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 cell is to be subjected to one crush only. The test sample is observed for a further 6 h. The test is conducted using cells that have not previously been subjected to other tests.

将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 cm/s。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 kN $\pm$ 0.78 kN；b)电芯的电压下降至少 100mV；或
c)电芯形变达原始厚度的 50%或更多。

一旦达到最大压力、电压下降 100mV 或更多，或电芯形变至少达原厚度的 50%，即可解除压力。

棱柱形或袋装电芯须从最宽的面施压。扣式或币式电芯，须施加挤压力在它的扁平面之间。圆柱形电芯，挤压力须施加于垂直于电芯纵轴的方向上。

每个试样电芯只做一次挤压试验。试样须继续观察 6 小时。试验须使用之前未做过其他试验的电芯进行。

Requirement 要求

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 the test.

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。

Test data showed in table below 测试数据见下表

Sample Sub-No. 样品子编号	Maximum outer casing temperature 电池芯表面最高温度 (°C)	Results 结果
011	21.6	PASS 合格
012	21.8	PASS 合格
013	22.0	PASS 合格
014	22.4	PASS 合格
015	21.9	PASS 合格
016	21.4	PASS 合格
017	21.6	PASS 合格
018	21.9	PASS 合格
019	22.0	PASS 合格
020	22.3	PASS 合格

Notes 注释:

There is no disassembly, no rupture and no fire during the test and within six hours after the test.

电芯在测试中和测试后 6 小时内未解体、未起火。

Room temperature 环境温度: 21.0°C

Test T.8: Forced discharge 试验 T.8: 强制放电**Test method 测试方法**

Each cell is 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 is forced discharged for a time interval (in hours) equal to its rated capacity divided by the initial test current (in ampere).

每个电芯在环境温度下与 12V 直流电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。

电芯与一个适当大小的电阻负载串联以调节到规定大小的放电电流。每块电芯的放电时间（单位为 h）等于电芯的额定容量除以试验初始放电电流（单位 A）。

Requirement 要求

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

电芯在试验过程中和试验后 7 天内无解体，无起火。

Test data showed in table below 测试数据见下表

Initial current 初始电流(mA)		49mA	
Supply voltage 试验电压(Vdc)		12Vdc	
Time interval 试验时间(Minutes)		60 Minutes	
Sample Sub-No. 样品子编号	Results 结果	Sample Sub-No. 样品子编号	Results 结果
021	PASS 合格	031	PASS 合格
022	PASS 合格	032	PASS 合格
023	PASS 合格	033	PASS 合格
024	PASS 合格	034	PASS 合格
025	PASS 合格	035	PASS 合格
026	PASS 合格	036	PASS 合格
027	PASS 合格	037	PASS 合格
028	PASS 合格	038	PASS 合格
029	PASS 合格	039	PASS 合格
030	PASS 合格	040	PASS 合格

Notes 注释:

There is no disassembly and no fire during the test and within seven days after the test.

电芯在测试中和测试后 7 天内未解体，未着火。

Room temperature 环境温度: 21.0°C

*******End of Test Report 检测报告结束*******

Important Notice

注意事项

1. The test report is invalid without the Report Seal of NTEK and Paging seal of NTEK.
本报告书无本公司报告专用章、骑缝章无效。
2. Nobody is allowed to photocopy or partly photocopy this test report without written permission of NTEK.
未经本公司书面同意，不得部分地复制本报告书。
3. The test report is invalid without the signatures of Approver, Reviewer and Testing engineer.
本报告书无批准人、审核人、及主检人签名无效。
4. The report is invalid when anything of following happens – illegal transfer, reproduce, embezzlement, imposture, modification or tampering in any media form.
私自转让、复制、盗用、冒用、涂改、或以任何媒体形式篡改的报告书无效。
5. Objections to the test report must be submitted to NTEK within 15 days.
对报告书若有异议，应于收到报告之日起15天内向本公司提出。
6. The test report is valid for the tested samples only.
本报告仅对测试样品有效。
7. The Chinese contents in this report are only for reference.
本报告中的中文内容仅供参考。

Shenzhen NTEK New Energy Technology Co., Ltd.

深圳市北测新能源技术有限公司

Address 1: Room 101, Building C, Fenda Hi-Tech Park, Sanwei Community, Hangcheng Subdistrict, Bao'an District, Shenzhen, Guangdong, China.

Address 2: 1/F., Building D, Huashengtai Technology Building, No.36, Hangkong Road, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.

地址 1: 深圳市宝安区航城街道三围社区奋达高新科技园 C 栋 101

地址 2: 广东省深圳市宝安区航城街道航空路 36 号华盛泰科技大厦 D 栋 1 楼

Tel 电话: +86(0)-755-3699 5529 E-mail 邮箱: Quality@ntekbat.org.cn

Website 网址: <http://www.ntekbat.org.cn>