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CNAS L5516

Report No.报告编号:
NTEK-2016DC0323016S-R1

UN38.3 检 测 报 告
UN38.3 Test Report

Name of Products:	Rechargeable Lithium-ion Polymer Battery LP953450
产品名称：	可充电锂离子聚合物电池 LP953450
Applicant:	EEMB Energy Power CO., LTD
委托单位：	深圳市铭胜能源科技有限公司
Manufacturer:	EEMB Energy Power CO., LTD
生产厂商：	深圳市铭胜能源科技有限公司
Date of issue： 签发日期：	2021-01-08

深 圳 市 北 测 检 测 技 术 有 限 公 司

Shenzhen NTEK Testing Technology Co., Ltd.

Applicant 委托单位	EEMB Energy Power CO., LTD 深圳市铭胜能源科技有限公司
Address of Applicant 委托单位地址	6/F, #110 building, Jindi Industrial Zone, Shatou Street, Futian District, Shenzhen, P.R.China 深圳市福田区沙头街道金地工业区 110 栋 6 楼
Manufacturer 生产厂商	EEMB Energy Power CO., LTD 深圳市铭胜能源科技有限公司
Address of manufacturer 生产厂商地址	6/F, #110 building, Jindi Industrial Zone, Shatou Street, Futian District, Shenzhen, P.R.China 深圳市福田区沙头街道金地工业区 110 栋 6 楼
Name of Products 产品名称	Rechargeable Lithium-ion Polymer Battery 可充电锂离子聚合物电池
Model/type reference 型号	LP953450
Trademark 商标	EEMB

Tested according to 测试依据:

Amendments to the Fifth Revised Edition of the Recommendations on the Transport of Dangerous Goods, Manual of Test and Criteria, section 38.3 lithium batteries (ST/SG/AC.10/11/Rev.5/Amend.2 section 38.3).

联合国《关于危险货物运输的建议书，试验和标准手册》，第五修订版修正 2，第三部分，38.3 节锂电池要求 (ST/SG/AC.10/11/Rev.5/Amend.2 第 38.3 节)

Test items 测试项目:

Test T.1: Altitude simulation 测试 T.1 高度模拟
Test T.2: Thermal Test 测试 T.2 温度试验
Test T.3: Vibration 测试 T.3 振动
Test T.4: Shock 测试 T.4 冲击
Test T.5: External short circuit 测试 T.5 外部短路
Test T.6: Crush 测试 T.6 挤压
Test T.7: Overcharge 测试 T.7 过度充电
Test T.8: Forced discharge 测试 T.8 强制放电

Test Conclusion 测试结论:

The Rechargeable Lithium-ion Polymer Battery submitted by EEMB Energy Power CO., LTD is tested according to Section 38.3 of Amendments to the Fifth Revised Edition of the Recommendations on the Transport of Dangerous Goods, Manual of Test and Criteria (ST/SG/AC.10/11/Rev.5/Amend.2).

Test results: PASS

由深圳市铭胜能源科技有限公司提交的可充电锂离子聚合物电池按照联合国《关于危险货物运输的建议书，试验和标准手册》，第五修订版修正 2，第三部分，38.3 节锂电池要求(ST/SG/AC.10/11/Rev.5/Amend.2 第 38.3 节)进行测试。

测试结果：合格

Tested by: 主检人：

Reviewed by: 审核人：

Approved by: 批准人：

Seal of NTEK
报告单位（盖章）

Sample Description 样品描述:			
Nominal Voltage 标称电压	3.7V	Rated Capacity 额定容量	1800mAh (6.7Wh)
Standard Charging Current 标准充电电流	360mA (0.2C)	Max. Continuous Charging Current 最大充电电流	1000mA
Limited Charging Voltage 充电限制电压	4.2V	Cut-Off Voltage 放电截止电压	3.0V
Max. Discharge Current 最大放电电流	1000mA	Number of cell 电芯数量	Single cell 单电芯
Rated Capacity of Cell 电芯额定容量	1800mAh	Appearance of Samples 样品外观	Silvery and Prismatic 银色、棱柱形
Classification of Samples 样品类型	Small Lithium ion Cells 小型锂离子电芯	Size of battery (T×W×L) 电池尺寸	9.8×34.5×52.0mm

Receiving Date 接收日期	2016-03-23	Completing Date 完成日期	2016-04-08

Remarks 备注说明:

Batteries of A1#-A10# are fully charged at first cycle;
Component cells of A11#-A15# at 50% of the design rated capacity at first cycle;
Batteries of A16#-A19# are fully charged at first cycle;
Batteries of A20#-A23# are fully charged after 50 cycles;
Component cells of A24#-A33# at first cycle in fully discharged states;
Component cells of A34#-A43# are fully discharged after 50 cycles;
Test environment condition: ambient temperature: 15-25oC, ambient humidity: 40-70%
Note: This testing report displaces the original report of No.: NTEK-2016DC0323016S, and the original one No.: NTEK-2016DC0323016S was invalid since the date of this testing report released.
电池 A1#-A10#为一次循环满电状态；
元件电池芯 A11#-A15#为一次循环后 50%充电状态；
电池 A16#-A19#为一次循环满电状态；
电池 A20#-A23#为 50 个循环满电状态；
元件电池芯 A24#-A33#为一次循环完全放电状态；
元件电池芯 A34#-A43#为 50 个循环完全放电状态；
试验环境条件：环境温度：15-25oC，环境湿度：40-70%
注：本报告替换原报告 NTEK-2016DC0323016S，自本报告签发之日起，原报告 NTEK-2016DC0323016S 作废。

Summaries of testing 测试摘要:

Each battery type is subjected to tests T.1 to T.8. Tests T.1 to T.5 are conducted in sequence on the same battery. Tests 6 and 8 are conducted using not otherwise tested 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.

每一种类型的电池均应进行T.1至T.8项试验。电池必须按顺序在相同的一组电池上进行试验T.1至T.5。试验T.6和T.8应使用未另外试验过的电池。试验T.7可以使用先前在试验T.1至T.5中使用过的未损坏电池进行，以便测

试进行在循环过的电池上。

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＜1g	0.5%
1g≤M≤75g	0.2%
M＞75g	0.1%

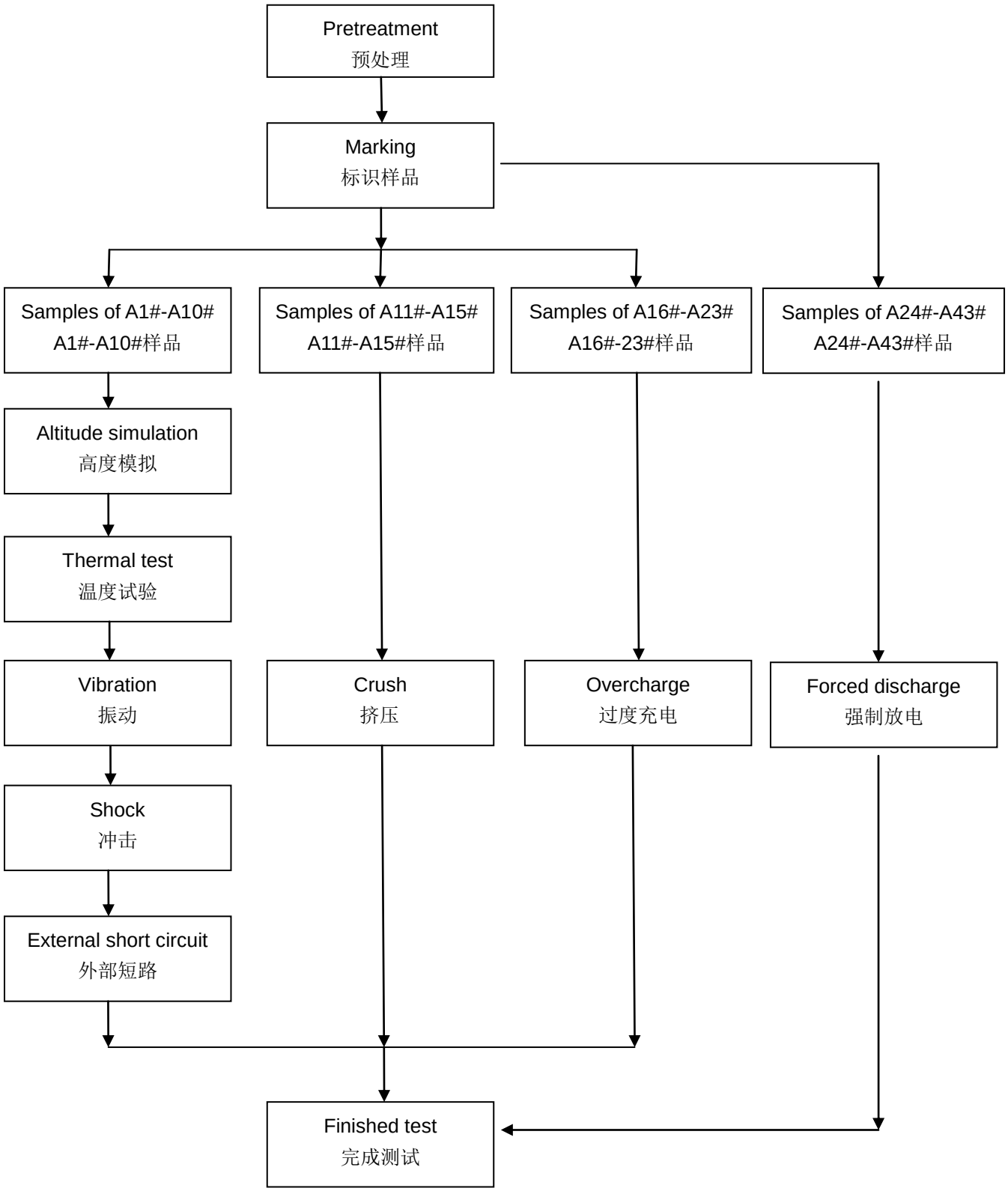
In test T.1 to T.4, batteries meet this requirement if there is no leakage, no venting, no disassembly, no rupture and no fire and if the open circuit voltage of each test battery after testing is not less than 90% of its voltage immediately prior to this procedure.

在测试T.1至T.4中，电池须满足无渗漏、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%。

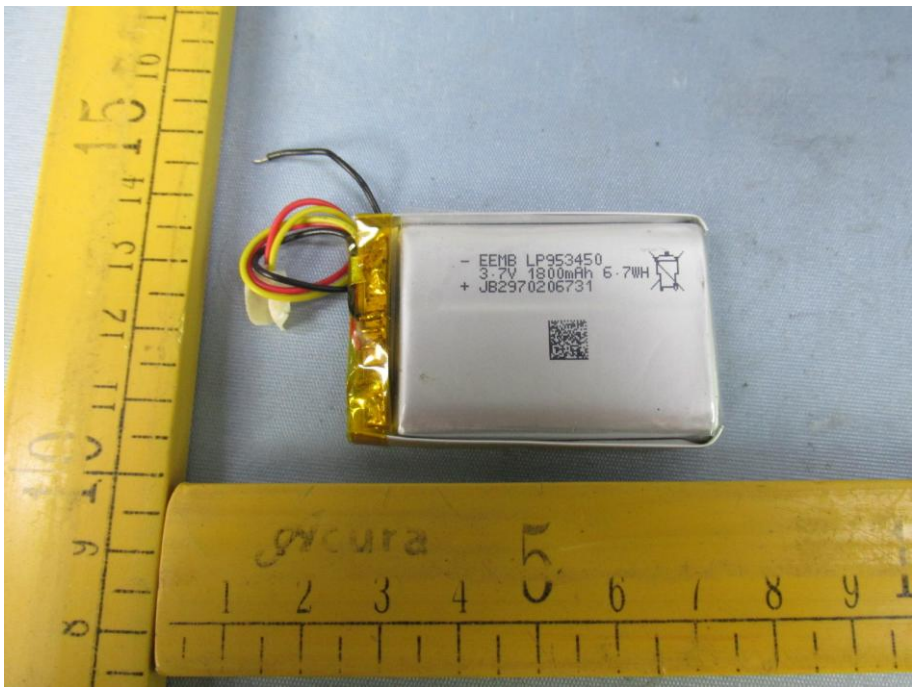
Test equipments 检测设备:

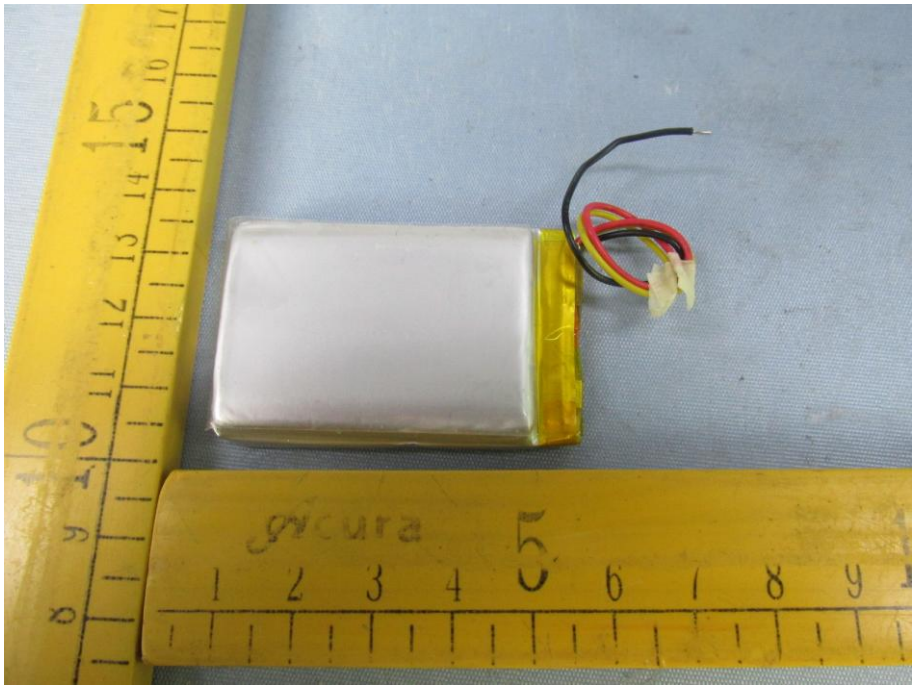
N170 Battery test system 电池检测系统
N171 Electronic balance 电子天平
N172 Low pressure chamber 低气压试验箱
N077 Programmable Temperature & Humidity Controller 可程式恒温恒湿箱
N173 Vibration test system 振动测试系统
N174 Hydraulic Hoist Vertical Shock System 液压垂直冲击系统
N175 Short circuit tester 短路测试机
N177 Explosion-proof chamber 防爆箱
N178 DC Source 直流电源
N180 Digital multimeter 数字式万用表
N185 uR1000 recorder uR1000 记录仪
N179 Battery crush and acupuncture tester 电池挤压针刺试验机

Test Procedure 测试程序



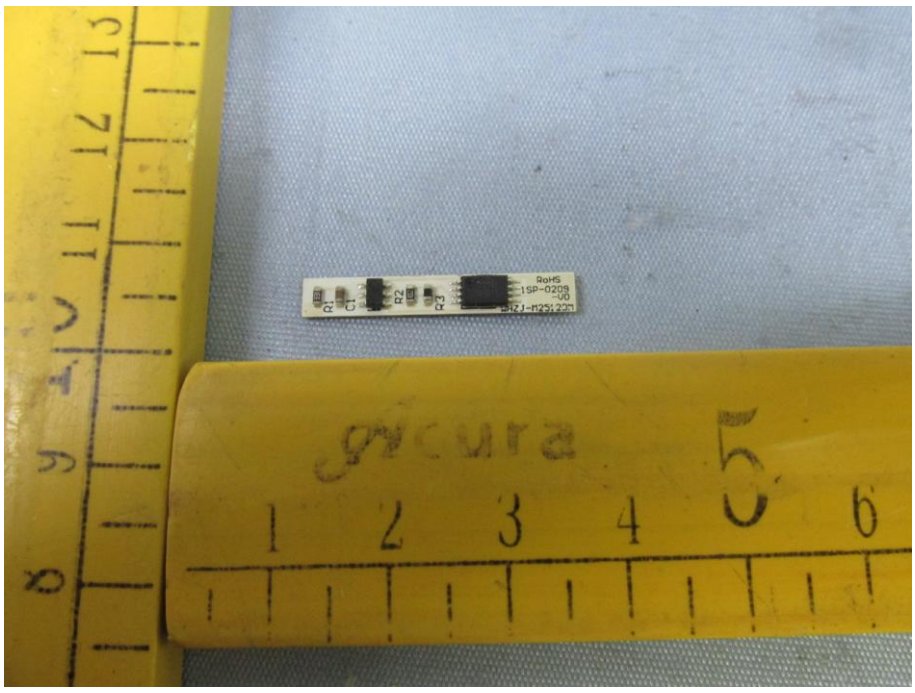
Photos of sample 样品照片





Photos of sample 样品照片

Photos of sample 样品照片



Test results 测试结果:

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

Test method 测试方法

Batteries are stored at a pressure of 11.6 kPa or less for at least six hours at ambient temperature (20 ± 5°C).
试验电池被放置在压力等于或低于11.6 kPa和环境温度(20±5°C)下存放至少6小时。

Requirement 要求

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 battery after testing is not less than 90% of its voltage immediately prior to this procedure.
电池须无渗漏、无泄气、无解体、无破裂和无起火，并且每个试验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%。

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

State of sample 样品状态	No. 编号	Pre-test 试验前		After test 试验后		Mass loss 质量损失 (%)	Voltage after test/ voltage pre-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)			
at first cycle, in fully charged states 一次循环后满电状态	A1#	29.136	4.18	29.136	4.17	0.000	99.76	PASS 合格
	A2#	29.109	4.18	29.109	4.17	0.000	99.76	PASS 合格
	A3#	29.024	4.18	29.024	4.18	0.000	100.0	PASS 合格
	A4#	28.832	4.18	28.832	4.18	0.000	100.0	PASS 合格
	A5#	29.198	4.18	29.198	4.18	0.000	100.0	PASS 合格
	A6#	28.712	4.18	28.712	4.18	0.000	100.0	PASS 合格
	A7#	29.125	4.18	29.125	4.18	0.000	100.0	PASS 合格
	A8#	29.073	4.18	29.073	4.17	0.000	99.76	PASS 合格
	A9#	28.907	4.18	28.907	4.18	0.000	100.0	PASS 合格
	A10#	29.107	4.18	29.107	4.18	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，电池未渗漏、未泄气、未解体、未破裂和未起火。

Ambient temperature 环境温度: 19.9°C

Test T.2: Thermal test 测试T.2：温度试验

Test method 测试方法

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 10 times, after which all test batteries are to be stored for 24 hours at ambient temperature (20 ± 5°C).

电池放置在试验温度等于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在环境温度(20±5°C)下存放24小时。

Requirement 要求

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

电池须无渗漏、无泄气、无解体、无破裂和无起火，并且每个试验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%。

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

State of sample 样品状态	No. 编号	Pre-test 试验前		After test 试验后		Mass loss 质量损失 (%)	Voltage after test/ voltage pre-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)			
at first cycle, in fully charged states 一次循环后满电状态	A1#	29.136	4.17	29.129	4.14	0.024	99.28	PASS 合格
	A2#	29.109	4.17	29.101	4.14	0.027	99.28	PASS 合格
	A3#	29.024	4.18	29.018	4.16	0.021	99.52	PASS 合格
	A4#	28.832	4.18	28.822	4.16	0.035	99.52	PASS 合格
	A5#	29.198	4.18	29.189	4.15	0.031	99.28	PASS 合格
	A6#	28.712	4.18	28.701	4.14	0.038	99.04	PASS 合格
	A7#	29.125	4.18	29.118	4.15	0.024	99.28	PASS 合格
	A8#	29.073	4.17	29.066	4.14	0.024	99.28	PASS 合格
	A9#	28.907	4.18	28.898	4.16	0.031	99.52	PASS 合格
	A10#	29.107	4.18	29.098	4.15	0.031	98.28	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，电池未渗漏、未泄气、未解体、未破裂和未起火。
Ambient temperature 环境温度: 20.1°C

Test T.3: Vibration 测试T.3：振动

Test method 测试方法
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 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.
电池紧固于振动台台面，但不得造成电池变形，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。
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
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 battery after testing is not less than 90% of its voltage immediately prior to this procedure.
电池须无渗漏、无泄气、无解体、无破裂和无起火，并且每个试验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%。

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

State of sample 样品状态	No. 编号	Pre-test 试验前		After test 试验后		Mass loss 质量损失 (%)	Voltage after test/ voltage pre-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)			
at first cycle, in fully charged states 一次循环后满电状态	A1#	29.129	4.14	29.129	4.14	0.000	100.0	PASS 合格
	A2#	29.101	4.14	29.101	4.14	0.000	100.0	PASS 合格
	A3#	29.018	4.16	29.018	4.16	0.000	100.0	PASS 合格
	A4#	28.822	4.16	28.822	4.16	0.000	100.0	PASS

								合格
	A5#	29.189	4.15	29.189	4.15	0.000	100.0	PASS 合格
	A6#	28.701	4.14	28.701	4.14	0.000	100.0	PASS 合格
	A7#	29.118	4.15	29.118	4.15	0.000	100.0	PASS 合格
	A8#	29.066	4.14	29.066	4.14	0.000	100.0	PASS 合格
	A9#	28.898	4.16	28.898	4.16	0.000	100.0	PASS 合格
	A10#	29.098	4.15	29.098	4.15	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，电池未渗漏、未泄气、未解体、未破裂和未起火。
Ambient temperature 环境温度: 19.9°C

Test T.4: Shock 测试 T.4：冲击

Test method 测试方法
Batteries are secured to the testing machine by means of a rigid mount which will support all mounting surfaces of each test battery. Each battery is subjected to a half-sine shock of peak acceleration of 150 g_n and pulse duration of 6 milliseconds. Each battery 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 battery for a total of 18 shocks.
试验电池用刚性支架紧固在试验装置上，支架支撑着每个试验电池组的所有安装面。每个电池须经受峰值加速度150 gn和脉冲持续时间6 ms的半正弦波冲击。每个电池须在三个互相垂直的电池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
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 battery after testing is not less than 90% of its voltage immediately prior to this procedure.
电池须无渗漏、无泄气、无解体、无破裂和无起火，并且每个试验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%。

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

State of sample 样品状态	No. 编号	Pre-test 试验前		After test 试验后		Mass loss 质量损失 (%)	Voltage after test/ voltage pre-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)			
at first cycle, in	A1#	29.129	4.14	29.129	4.14	0.000	100.0	PASS

fully charged states 一次循环后满电状态								合格
	A2#	29.101	4.14	29.101	4.14	0.000	100.0	PASS 合格
	A3#	29.018	4.16	29.018	4.16	0.000	100.0	PASS 合格
	A4#	28.822	4.16	28.822	4.16	0.000	100.0	PASS 合格
	A5#	29.189	4.15	29.189	4.15	0.000	100.0	PASS 合格
	A6#	28.701	4.14	28.701	4.14	0.000	100.0	PASS 合格
	A7#	29.118	4.15	29.118	4.15	0.000	100.0	PASS 合格
	A8#	29.066	4.14	29.066	4.14	0.000	100.0	PASS 合格
	A9#	28.898	4.16	28.898	4.16	0.000	100.0	PASS 合格
	A10#	29.098	4.15	29.098	4.15	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，电池未渗漏、未泄气、未解体、未破裂和未起火。

Ambient temperature 环境温度: 21.2°C

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

Test method 测试方法

Batteries to be tested are temperature stabilized so that its external case temperature reaches 55 ± 2°C and then the battery are subjected to a short circuit condition with a total external resistance of less than 0.1 ohm at 55 ± 2°C. This short circuit condition is continued for at least one hour after the battery external case temperature has returned to 55 ± 2°C. The battery is observed for a further six hours for the test to be concluded.

试验电池在测试温度下放置至稳定状态，使其外壳温度达到55±2°C，然后使电池在55±2°C下经受总外电阻小于0.1Ω 的短路条件。短路测试持续到电池外壳温度回到55±2°C后继续至少1小时。试验电池被观察6小时再下结论。

Requirement 要求

Batteries meet this requirement if their external temperature does not exceed 170°C and there is no disassembly, no rupture and no fire within six hours after test.

电池外壳温度不超过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

State of sample 样品状态	No. 编号	The Highest temperature 电池表面最高温度	Results 结果

		(°C)	
at first cycle, in fully charged states 一次循环后满电状态	A1#	56.3	PASS 合格
	A2#	57.1	PASS 合格
	A3#	56.7	PASS 合格
	A4#	56.9	PASS 合格
	A5#	57.0	PASS 合格
	A6#	56.4	PASS 合格
	A7#	56.6	PASS 合格
	A8#	56.7	PASS 合格
	A9#	57.2	PASS 合格
	A10#	57.0	PASS 合格

Notes 注释:
There is no disassembly, no rupture and no fire within six hours after test.
电池在测试后 6 小时内未解体、未破裂，未起火。
Ambient temperature 环境温度: 21.3°C

Test T.6: Crush 测试T.6：挤压

Test method 测试方法
A 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 kN ± 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 shall be released.
A prismatic or pouch cell shall be crushed by applying the force to the widest side.
Each 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 component cells that have not previously been subjected to other tests.
将元件电池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 ± 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。

棱柱形或袋装电池须从最宽的面施压。

每个试样元件电池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元件电池芯进行。

Requirement 要求

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

元件电池芯外壳温度不超过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

State of sample 样品状态	No. 编号	The Highest temperature 电池表面最高温度 (°C)	Results 结果
at first cycle at 50% of the design rated capacity 一次循环后 50%充电状态	A11#	22.0	PASS 合格
	A12#	21.9	PASS 合格
	A13#	22.3	PASS 合格
	A14#	22.2	PASS 合格
	A15#	21.7	PASS 合格

Notes 注释:

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

电池在测试后 6 小时内未解体、未起火。

Ambient temperature 环境温度: 21.3oC

Test T.7: Overcharge 测试 T.7：过度充电

Test method 测试方法

The charge current is 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 is the lesser of two times the maximum charge voltage of the battery or 22V.

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

充电电流为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组最大充电电压的两倍或22伏两者中的较小者。

试验应在环境温度下进行。进行试验的时间应为24小时。

Requirement 要求

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

Overcharge current: 过充电电流： 2×1000=2000mA	Overcharge voltage: 过充电电压： 2×4.2=8.4V	Total time of charging: 过充试验时间： 24 hours

State of sample 样品状态	No. 编号	Results 结果
at first cycle, in fully charged states 一次循环后满电状态	A16#	PASS 合格
	A17#	PASS 合格
	A18#	PASS 合格
	A19#	PASS 合格
after fifty cycles ending in fully charged states 50 次循环后满电状态	A20#	PASS 合格
	A21#	PASS 合格
	A22#	PASS 合格
	A23#	PASS 合格

Notes 注释:
There is no disassembly and no fire during the test and within seven days after the test.
电池在测试中和测试后 7 天内未解体，未着火。
Ambient temperature 环境温度: 21.9°C

Test T.8: Forced discharge 测试 T.8：强制放电

Test method 测试方法
Each component 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).
每个元件电池芯在环境温度下与 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。
元件电池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

Component cells meet this requirement if there is no disassembly and no fire during the test and within seven days after the test.
元件电池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

Discharge current: 强制放电电流： 3600mA	Test voltage: 试验电压： 12Vdc	Total time of discharging: 试验时间： 30 Minutes

State of sample 样品状态	No. 编号	Results 结果
at first cycle, in fully discharged states 一次循环完全放电状态	A24#	PASS 合格
	A25#	PASS 合格
	A26#	PASS 合格
	A27#	PASS 合格
	A28#	PASS 合格
	A29#	PASS 合格
	A30#	PASS 合格
	A31#	PASS 合格
	A32#	PASS 合格
	A33#	PASS 合格
after fifty cycles ending in fully discharged states 50 个循环完全放电状态	A34#	PASS 合格
	A35#	PASS 合格
	A36#	PASS 合格
	A37#	PASS 合格
	A38#	PASS 合格
	A39#	PASS 合格
	A40#	PASS 合格

	A41#	PASS 合格
	A42#	PASS 合格
	A43#	PASS 合格

Notes 注释:

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

电池在测试中和测试后 7 天内未解体，未着火。

Ambient temperature 环境温度: 20.9°C

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

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