中国认可
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检测
TESTING
CNASL14149

Report No./报告编号:
PN2022010745101

UN38.3 Test Report
UN38.3 检测报告

Name of Products:	Rechargeable Li-ion Battery Battery-Li6
产品名称：	可充电锂电池组 Battery-Li6
Applicant:	REOLINK INNOVATION LIMITED
委托单位：	睿联创新有限公司
Manufacturer:	DONGGUAN LARGE ELECTRONICS CO., LTD.
生产厂商：	东莞市钜大电子有限公司
Date of issue： 签发日期：	2022-02-17

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	REOLINK INNOVATION LIMITED 睿联创新有限公司
Address of Applicant 委托单位地址	Room B, 4th Floor, Kingway Commercial Building, 171-173 Lockhart Road, Wan Chai, Hong Kong 香港灣仔駱克道 171-173 號金威商業大廈 4 樓 B 室
Manufacturer 生产厂商	DONGGUAN LARGE ELECTRONICS CO., LTD. 东莞市钜大电子有限公司
Address of manufacturer 生产厂商地址	No. 8 Jingyi Road, Niushan, Dongcheng District, Dongguan City, Guangdong Province 广东省东莞市东城街道牛山景怡路 8 号
Name of Products 产品名称	Rechargeable Li-ion Battery 可充电锂电池组
Model/Type 型号	Battery-Li6
Ratings 额定参数	3.65V 5000mAh 18.25Wh
Date of receipt of test item 接收日期	2022-01-10
Completion Date 完成日期	2022-01-23

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 (ST/SG/AC.10/11/Rev.7).

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(ST/SG/AC.10/11/Rev.7)

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: Impact 试验 T.6：撞击
Test T.3: Vibration 试验 T.3：振动	Test T.7: Overcharge 试验 T.7：过度充电
Test T.4: Shock 试验 T.4：冲击	Test T.8: Forced discharge 试验 T.8：强制放电

Test Conclusion 试验结论:

The Rechargeable Li-ion Battery submitted by REOLINK INNOVATION LIMITED 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 (ST/SG/AC.10/11/Rev.7).*

Test results: PASS

由睿联创新有限公司提交的可充电锂电池组按照联合国《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(ST/SG/AC.10/11/Rev.7)进行测试。

测试结果：合格

Tested by: 主检人：	Keven Zhong 钟浩文	钟浩文
Reviewed by: 审核人：	Jake Chen 陈嘉南	陈嘉南
Approved by: 批准人：	Jesse Zhang 张士杰	张士杰

报告单位（盖章）：
Seal of NTEK

深圳市北测新能源技术有限公司 Shenzhen NTEK New Energy Technology Co., Ltd. NTEK 报告专用章 Report Seal

General product information 通用产品信息:			
Battery 电池			
Model/Type 型号	Battery-Li6	Rated Rating 额定值	3.65V 5000mAh 18.25Wh
Standard Charging Current 标准充电电流	Battery Input: 1020mA Micro USB: 2000mA	Max. Charging Current 最大充电电流	Battery Input: 2500mA Micro USB: 2000mA
Standard Discharge Current 标准放电电流	1020mA	Max. Discharge Current 最大放电电流	2500mA
Limited Charging Voltage 充电限制电压	Battery Input: 4.2V Micro USB: 5V/9V	Cut-off Voltage 放电截止电压	3.0V
Appearance 外观	Black, Prismatic 黑色、棱柱形	Dimension (T×W×H) 尺寸(mm)	32.94×58.36×96.18
Classification 类别	Small Lithium ion Batteries 小型锂离子电池		
Cell 电芯			
Model number of the cell 内部电芯型号	LR18650SK	Rated Rating 额定值	3.6V 2600mAh 9.36Wh
Cell's Max. Discharge Current 电芯最大放电电流	5000mA	Limited Charging Voltage 充电限制电压	4.2V
Cell number per battery 每个电池的组成电芯数量	2PCS, 1S2P	Cut-off Voltage 放电截止电压	2.75V

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
Batteries 电池	NE20211217220017-X*	001~004	Fully charged at first cycle 首次循环满电状态
		019~022	
		005~008	Fully charged after 25 cycles 25 次循环后满电状态
		023~026	
Component cells 元件电池芯	S19040902201001-X*	009~013	50% of the design rated capacity at first cycle 首次循环 50%电荷状态
		014~018	50% of the design rated capacity after 25 cycles 25 次循环后 50%电荷状态
		027~036	Fully discharged at first cycle 首次循环完全放电状态
		037~046	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：
T.6 and T.8 test data of this report are based on the original test report issued by Shenzhen NTEK New Energy Technology Co., Ltd., Report No. PN2021081331901, dated by 2021-09-23.
本报告中的 T.6 和 T.8 测试数据基于深圳市北测新能源技术有限公司签发的原始报告，报告编号 PN2021081331901，出版日期为 2021-09-23。

Summaries of testing 测试摘要:
All rechargeable battery types, including those composed of previously tested cells, shall be subjected to tests T.1 to T.5 and T.7.
所有可充电的电池组类型，包括由已经通过试验的电芯组成的电池，均须做 T.1 至 T.5 和 T.7 的试验。
Tests T.1 to T.5 are conducted in sequence on the same battery. Tests T.6 and T.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.

电池必须按顺序在相同的一组电池上进行T.1至T.5的试验。T.6和T.8的试验应使用另外未试验过的电池。T.7的试验可以使用先前在T.1至T.5的试验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，使用以下公式计算：

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

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".

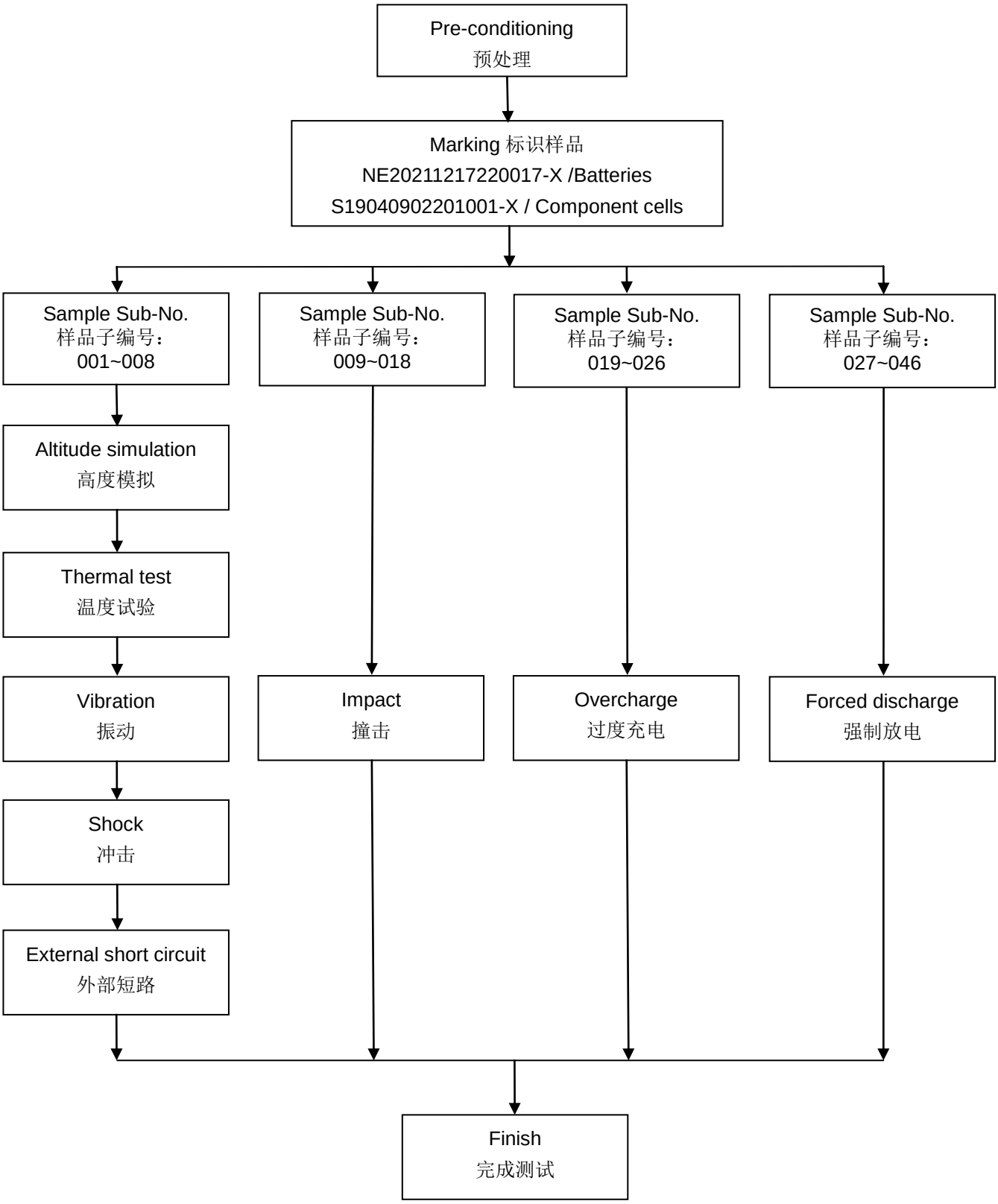
式中：M_1是试验前的质量，M_2是试验后的质量。如果质量损失不超过下表所列的数值，应视为“无质量损失”。

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%

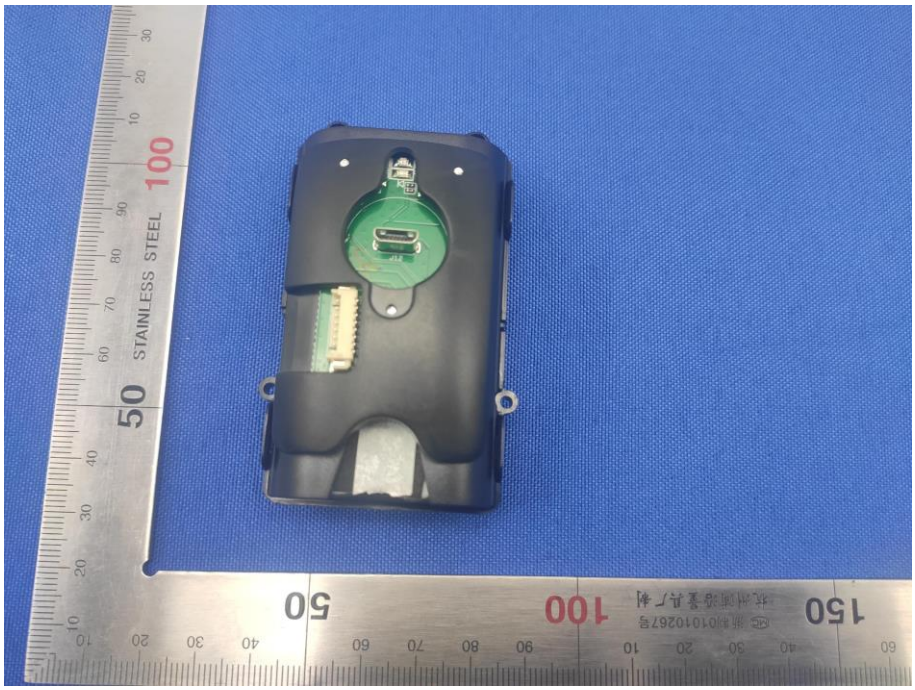
In tests T.1 to T.4, batteries meet this requirement if there is no leakage, no venting, no disassembly, no rupture and no fire and if the open circuit voltage of each test battery after testing is not less than 90% of its voltage immediately prior to this procedure.

在T.1至T.4的试验中，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%。

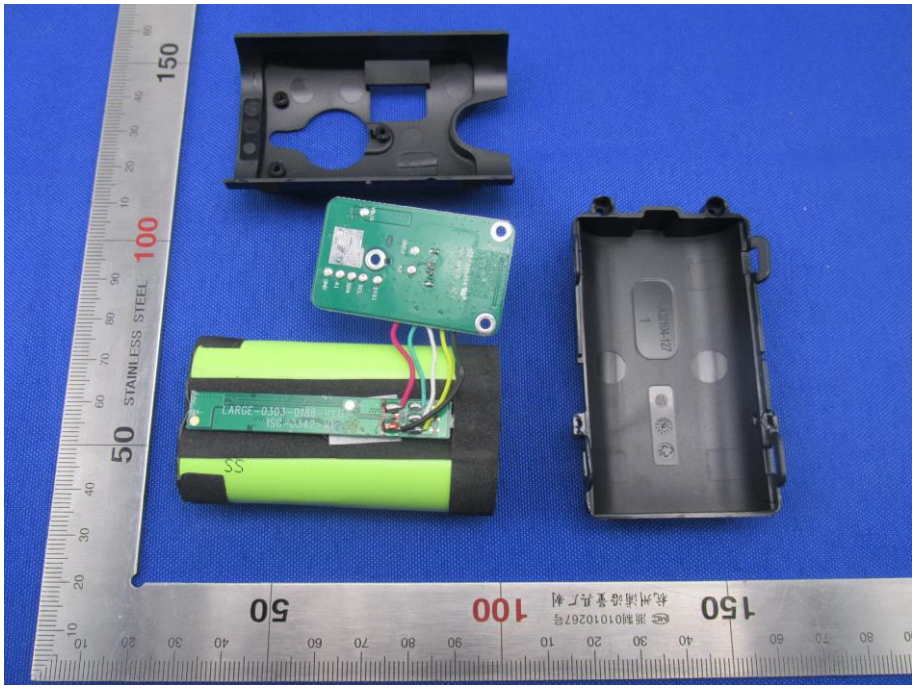
Test Procedure 测试程序



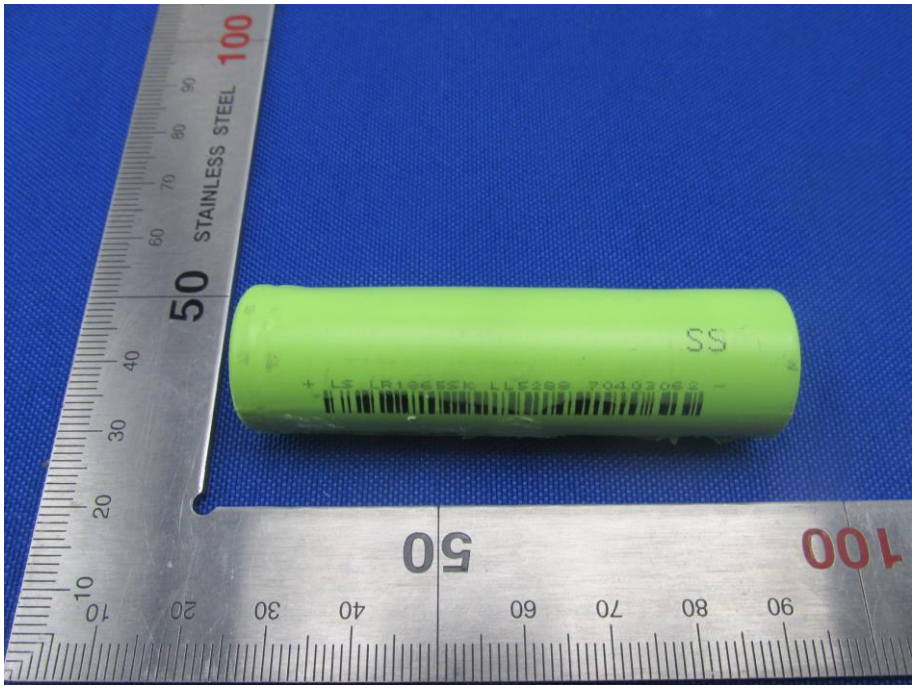
Photos of sample 样品照片

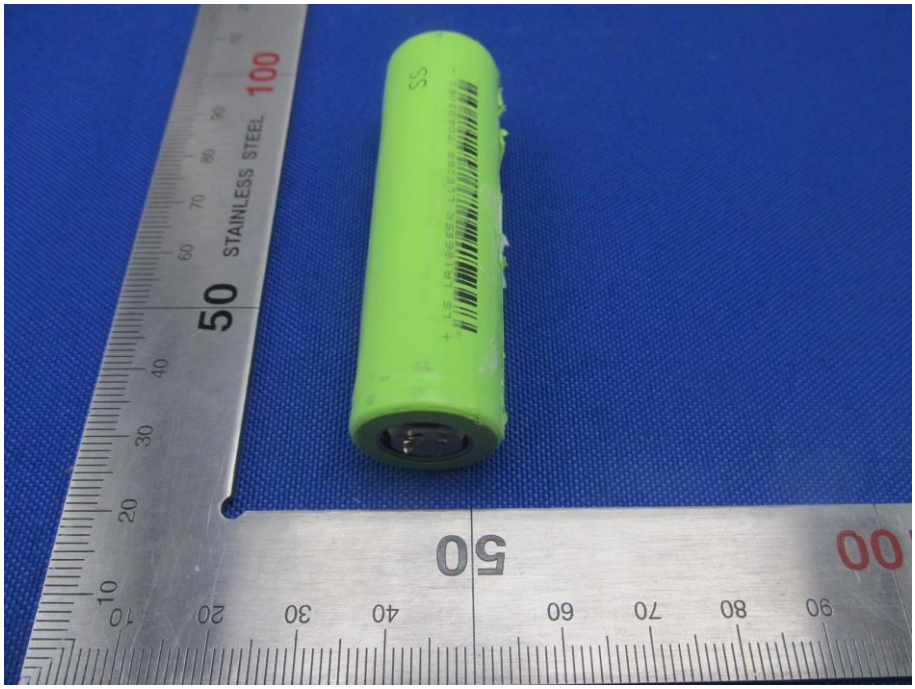


Photos of sample 样品照片

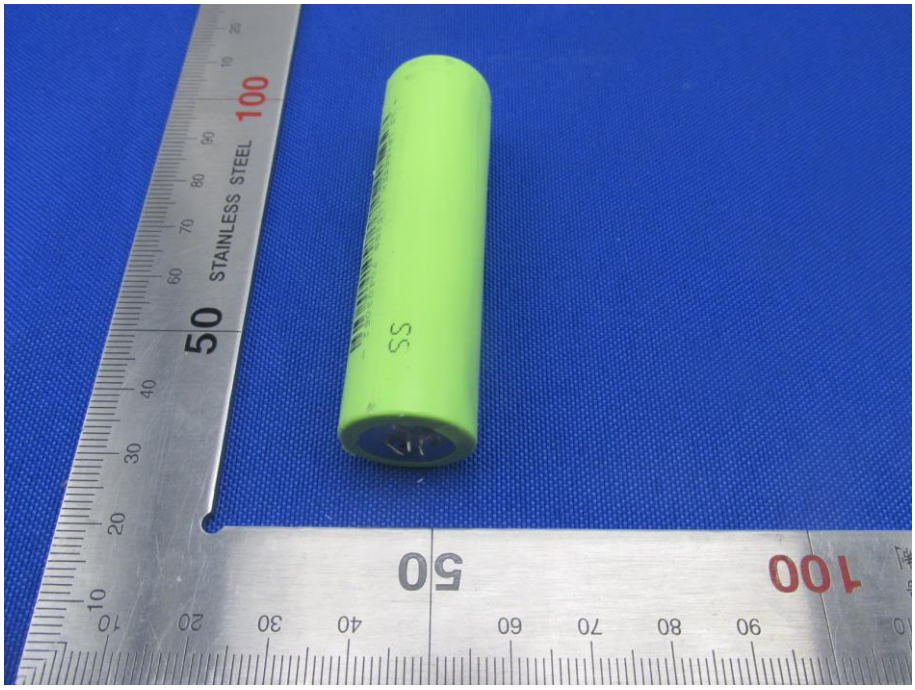


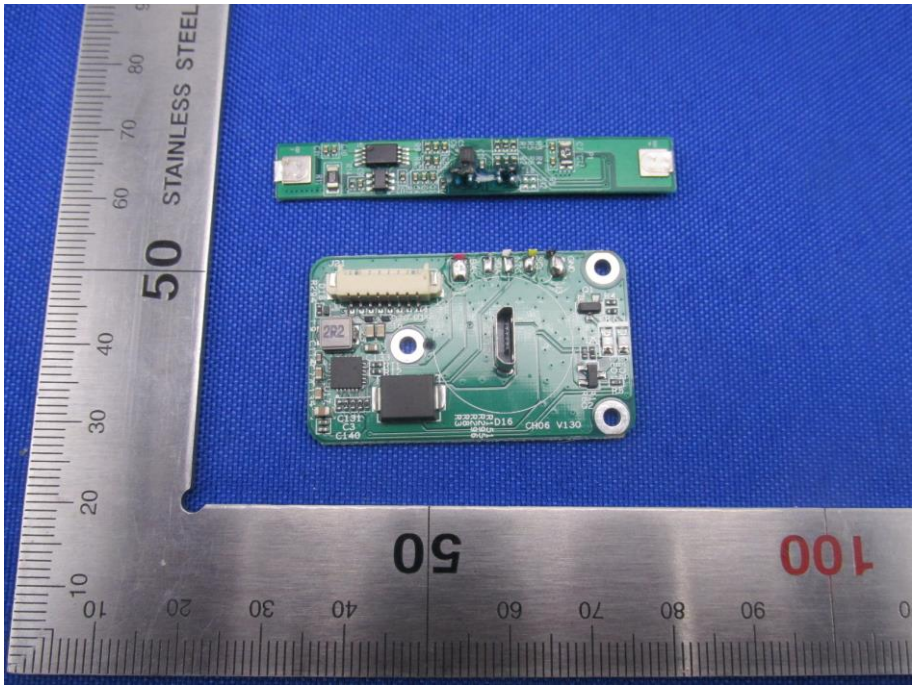
Photos of sample 样品照片



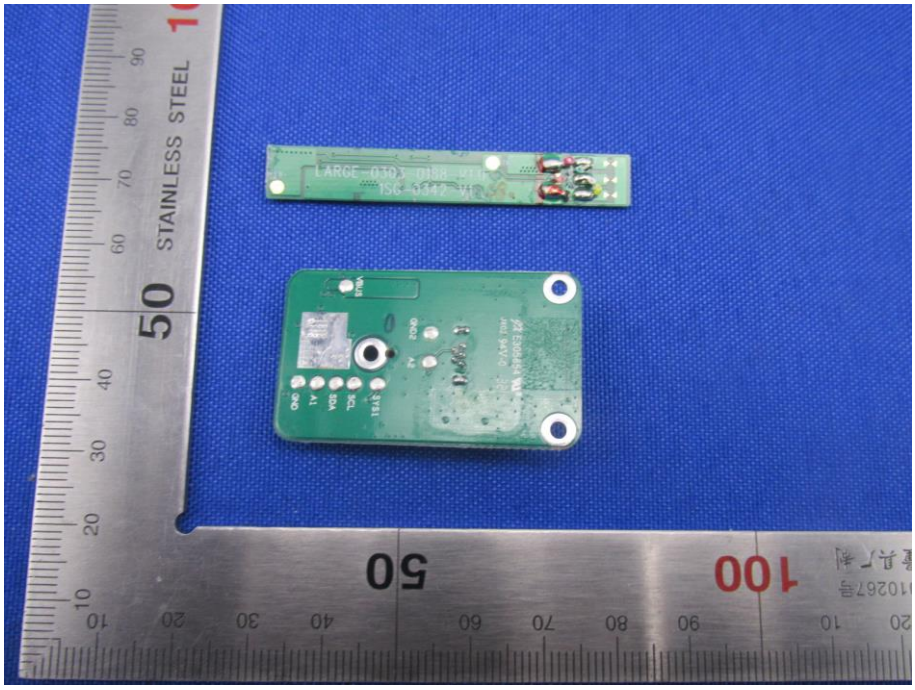


Photos of sample 样品照片





Photos of sample 样品照片



Test results 测试结果:

Test T.1: Altitude simulation 试验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

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	107.93	4.178	107.93	4.178	0.000	100.0	PASS 合格
002	107.75	4.177	107.75	4.176	0.000	99.98	PASS 合格
003	108.31	4.176	108.31	4.176	0.000	100.0	PASS 合格
004	108.26	4.179	108.25	4.178	0.009	99.98	PASS 合格
005	108.09	4.180	108.09	4.180	0.000	100.0	PASS 合格
006	107.69	4.182	107.69	4.181	0.000	99.98	PASS 合格
007	107.77	4.175	107.77	4.175	0.000	100.0	PASS 合格
008	107.52	4.177	107.52	4.177	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。

Room temperature 环境温度: 22.9°C

Test T.2: Thermal test 试验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

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	107.93	4.178	107.89	4.135	0.037	98.97	PASS 合格
002	107.75	4.176	107.70	4.131	0.046	98.92	PASS 合格
003	108.31	4.176	108.27	4.129	0.037	98.87	PASS 合格
004	108.25	4.178	108.20	4.134	0.046	98.95	PASS 合格
005	108.09	4.180	108.05	4.136	0.037	98.95	PASS 合格
006	107.69	4.181	107.64	4.135	0.046	98.90	PASS 合格
007	107.77	4.175	107.72	4.126	0.046	98.83	PASS 合格
008	107.52	4.177	107.47	4.128	0.047	98.83	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。

Room temperature 环境温度: 23.6°C

Test T.3: Vibration 试验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

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 battery 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	107.89	4.135	107.89	4.135	0.000	100.0	PASS 合格
002	107.70	4.131	107.70	4.129	0.000	99.95	PASS 合格
003	108.27	4.129	108.26	4.129	0.009	100.0	PASS 合格
004	108.20	4.134	108.20	4.133	0.000	99.98	PASS 合格
005	108.05	4.136	108.05	4.135	0.000	99.98	PASS 合格
006	107.64	4.135	107.64	4.135	0.000	100.0	PASS 合格
007	107.72	4.126	107.71	4.126	0.009	100.0	PASS 合格
008	107.47	4.128	107.47	4.128	0.000	100.0	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，电池未渗漏、未泄气、未解体、未破裂和未起火。

Room temperature 环境温度: 21.5°C

Test T.4: Shock 试验 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 depending on the mass of the battery. The pulse duration is 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的所有安装面。每个电池须经受基于电池质量的一个峰值加速度半正弦波冲击。

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。

The formula below is provided to calculate the appropriate minimum peak accelerations.

如下公式用于计算适用的最小峰值加速度：

Mass of the battery 电池的质量		Minimum peak acceleration 最小峰值加速度		Pulse duration 脉冲持续时间
☒	≤4.482 kg	150 g_n		6 ms
☐	>4.482 kg	$Acceleration(g_n) = \sqrt{\left(\frac{100850}{mass*}\right)}$	不适用	6 ms

* Mass is expressed in kilograms. *质量单位表示为kg.

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

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	107.89	4.135	107.89	4.135	0.000	100.0	PASS 合格
002	107.70	4.129	107.70	4.129	0.000	100.0	PASS 合格
003	108.26	4.129	108.26	4.129	0.000	100.0	PASS 合格
004	108.20	4.133	108.20	4.133	0.000	100.0	PASS 合格
005	108.05	4.135	108.05	4.134	0.000	99.98	PASS 合格
006	107.64	4.135	107.64	4.135	0.000	100.0	PASS 合格
007	107.71	4.126	107.71	4.126	0.000	100.0	PASS 合格
008	107.47	4.128	107.47	4.128	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。

Room temperature 环境温度: 20.8°C

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

Test method 测试方法

Batteries 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 battery and is assessed and documented. Then the battery 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 battery external case temperature has returned to 57 ± 4 °C.

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

试验电池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池的尺寸和设计，并同时加以评估及提供文件证明。然后该电池在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池外表面温度返回至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

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 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

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	57.1	PASS 合格
002	57.4	PASS 合格
003	57.2	PASS 合格
004	57.4	PASS 合格
005	57.4	PASS 合格
006	57.1	PASS 合格
007	57.4	PASS 合格
008	57.1	PASS 合格

Notes 注释:

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

电池在测试中和测试后 6 小时内未解体、未破裂，未起火。

Room temperature 环境温度: 21.5°C

Test T.6: Impact 试验T.6：撞击

Test method 测试方法

Each component cell is to be placed on a flat smooth surface. A 15.8 mm ±0.1 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 kg ± 0.1 kg mass is to be dropped from a height of 61 ± 2.5 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 mm ± 0.1mm diameter curved surface lying across the centre of the test sample. Each sample is to be subjected to only a single impact.

每个元件电池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±0.1 毫米，长度至少 6 厘米，或电芯的最长尺度，取二者中较大者。将一块 9.1±0.1 kg 的重锤从 61±2.5 厘米高处跌落到钢棒和试样交叉点，使用一个几乎没有摩擦的、对落体重锤阻力很小的垂直导轨或管道加以控制。垂直导轨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，纵轴应与测试平面平行并与横放在试样中心的直径 15.8±0.1 毫米弯曲表面的纵轴垂直。每一试样只经受一次撞击。

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 during the test and 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

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
009	84.6	PASS 合格
010	75.7	PASS 合格
011	86.9	PASS 合格
012	91.7	PASS 合格
013	102.5	PASS 合格
014	96.6	PASS 合格
015	75.8	PASS 合格
016	95.4	PASS 合格
017	92.2	PASS 合格
018	94.0	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.

元件电池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: 23.9°C

Test T.7: Overcharge 试验 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 is as follows:

☒ 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.

☐ 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 is 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：

☒ 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最大充电电压的两倍或22伏两者中的较小者。

☐ 制造商建议的充电电压大于18V时，试验的最小电压应是电池最大充电电压的1.2倍。

试验在环境温度下进行。试验时间为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(mA).....:	2×2500=5000mA (Battery Input)
Overcharge voltage 过充电电压(Vdc).....:	2×4.2=8.4V
Duration of the test 过充试验时间(hours).....:	24 hours
Sample Sub-No.样品子编号	Results 结果
019	PASS 合格
020	PASS 合格
023	PASS 合格
024	PASS 合格
Overcharge current 过充电电流(mA).....:	2×2000=4000mA (Micro USB)
Overcharge voltage 过充电电压(Vdc).....:	2×9.0=18V
Duration of the test 过充试验时间(hours).....:	24 hours
021	PASS 合格
022	PASS 合格
025	PASS 合格
026	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。

Room temperature 环境温度: 21.2°C / 21.5°C

Test T.8: Forced discharge 试验 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。

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

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

Initial current 初始电流(mA).....:		5000mA	
Supply voltage 试验电压(Vdc).....:		12Vdc	
Time interval 试验时间(Minutes).....:		32 Minutes	
Sample Sub-No. 样品子编号	Results 结果	Sample Sub-No. 样品子编号	Results 结果
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
031	PASS 合格	041	PASS 合格
032	PASS 合格	042	PASS 合格
033	PASS 合格	043	PASS 合格
034	PASS 合格	044	PASS 合格
035	PASS 合格	045	PASS 合格
036	PASS 合格	046	PASS 合格

Notes 注释:

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

元件电池芯在测试中和测试后 7 天内未解体，未着火。

Room temperature 环境温度: 23.1°C

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

Important Notice

注意事项

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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。

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