



# UN38.3 检测报告

## TEST REPORT

报告编号: BCTC2401329697B  
Report No.:  
委托单位: 深圳市均辉电子有限公司  
Applicant: Shenzhen Junhui Electronics Co., Ltd  
产品名称: 锂离子电池  
Product Name: Lithium ion battery  
产品型号: 21700-6S2P  
Product Model:  
检测日期: 2024-01-24 至 2024-02-05  
Tested Date:  
签发日期: 2024-02-20  
Issued Date:

**深圳市倍测检测有限公司**  
**Shenzhen BCTC Testing Co., Ltd.**



联合国《关于危险货物运输的建议书试验和标准手册》第七版修订 1, 38.3 章节

**Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Tests and Criteria (ST/SG/AC.10/11/Rev.7/Amend.1, 38.3)**

客户信息 Client Information	
委托单位 Applicant	深圳市均辉电子有限公司 Shenzhen Junhui Electronics Co., Ltd
委托单位地址 Applicant Address	深圳市龙华区油松路梦丽园工业区 4 栋 505 505, Building 4, Mengliyuan Industrial Zone, Yousong Road, Longhua District, Shenzhen, China
商标 Trade Mark	/
制造商 Manufacturer	深圳市均辉电子有限公司 Shenzhen Junhui Electronics Co., Ltd
制造商地址 Manufacturer Address	深圳市龙华区油松路梦丽园工业区 4 栋 505 505, Building 4, Mengliyuan Industrial Zone, Yousong Road, Longhua District, Shenzhen, China
生产厂 Factory	深圳市均辉电子有限公司 Shenzhen Junhui Electronics Co., Ltd
生产厂地址 Factory Address	深圳市龙华区油松路梦丽园工业区 4 栋 505 505, Building 4, Mengliyuan Industrial Zone, Yousong Road, Longhua District, Shenzhen, China
联系电话 Contact Number	18320947920
电子邮箱 E-mail	123526973@qq.com
公司网址 Website	<a href="http://www.junhuibattery.com/">http://www.junhuibattery.com/</a>
样品信息 Sample Information	
样品名称 Name of Sample	锂离子电池 Lithium ion battery
型号 Model	21700-6S2P
规格 Ratings	21.6V, 10Ah, 216Wh
样品颜色 Sample color	蓝色 Blue
样品尺寸 Sample Size	长度*宽度*厚度 149.2*132.7*26.2mm
内部电芯型号 Internal Cell Model	INR21700-50E
内部电芯规格 Internal Cell Ratings	3.6V, 5000mAh, 18Wh
测试样品编号 Test Sample No.	电池/Battery: 240165374-B01~B16; 电芯/Cell: 240165321-C01~C30
接样日期: Receipt Date	2024-01-23



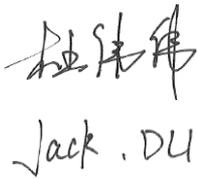
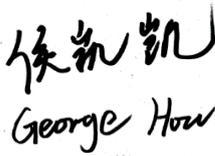


测试项目 Test Items			
章节 Clause	测试项目名称 Name of Test Items	结论 Conclusion	备注 Remarks
38.3.4.1 T.1	高度模拟 Altitude simulation	通过 Pass	--
38.3.4.2 T.2	温度试验 Thermal test	通过 Pass	--
38.3.4.3 T.3	振动 Vibration	通过 Pass	--
38.3.4.4 T.4	冲击 Shock	通过 Pass	--
38.3.4.5 T.5	外部短路 External Short- circuit	通过 Pass	--
38.3.4.6 T.6	<input checked="" type="checkbox"/> 撞击 Impact <input type="checkbox"/> 挤压 Crush	通过 Pass	直径不小于 18 毫米的圆柱形电芯 Cylindrical cells greater not less than 18 mm in diameter
38.3.4.7 T.7	过度充电 Overcharge	通过 Pass	--
38.3.4.8 T.8	强制放电 Forced discharge	通过 Pass	--

备注 Remark:  
 测试样品状态代码.Testing sample condition code:  
 ① 1 次循环之后完全充电.1 cycle fully charged.;    ②25 次循环之后完全充电.25 cycle fully charged.;  
 ③ 1 次循环之后完全放电.1 cycle fully discharged.;    ④25 次循环之后完全放电.25 cycle fully discharged.;  
 ⑤ 1 次循环之后充电 50%.1 cycle 50% charged.;    ⑥25 次循环之后充电 50%.25cycle 50% charged.;

### 结论 Test Conclusion

经测试，该样品符合标准要求。  
 After testing, the sample meets the standard requirements.

主检: 杜伟伟 Tested: Jack Du 职衔: 测试工程师 Title: Test engineer	 Jack .DU	审核: 侯凯凯 Reviewed: George Hou 职衔: 项目工程师 Title: Project handler	 George Hou	批准: 余平 Approved: Andre Yu 职衔: 主管 Title: Supervisor	 Andre Yu
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检测

308

### T.1 高度模拟 Altitude Simulation

将电芯和电池在温度为 $20\pm 5^{\circ}\text{C}$ 、大气压力不大于11.6kpa的环境中贮存不少于6h。

Test cells and batteries shall be stored at a pressure of 11.6 kPa or less for at least six hours at ambient temperature ( $20\pm 5^{\circ}\text{C}$ )

#### 接受准则 Acceptance criteria:

无漏液、无泄气、无分解、无破裂以及无着火现象；电芯或电池测试后的开路电压不低于测试前开路电压的90%。

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.

样品编号 Sample No.	样品状态 Sample Condition	质量(g)Weight		质量损失% Weight Loss	电压(V)Voltage		残余电压% Percentage of residual Voltage	结果 Results
		测试前 Before Test	测试后 After Test		测试前 Before Test	测试后 After Test		
B01	①	943.2	943.1	0.011	25.04	25.03	99.960	A, B
B02	①	942.4	942.4	0.000	25.00	24.99	99.960	A, B
B03	①	941.0	940.9	0.011	24.93	24.93	100.000	A, B
B04	①	941.1	941.1	0.000	24.95	24.95	100.000	A, B
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B05	②	942.5	942.5	0.000	25.03	25.03	100.000	A, B
B06	②	941.6	941.5	0.011	24.96	24.95	99.960	A, B
B07	②	941.2	941.2	0.000	24.96	24.94	99.920	A, B
B08	②	942.7	942.7	0.000	24.99	24.99	100.000	A, B
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#### 结果/Results:

A -无漏液、无泄气、无分解、无破裂、无着火。No leakage, No venting, No disassembly, No rupture, No fire.

B -测试后电压不低于测试前电压的90%。Voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure.

C -其它。Others (please explain).



## T.2 温度试验 Thermal test

首先将样品放在 $72\pm 2^{\circ}\text{C}$ 的环境中放置至少6个小时，然后放在 $-40\pm 2^{\circ}\text{C}$ 的环境中放置至少6个小时。温度转换的最大间隔时间为30分钟。如此循环10次，最后将样品放在 $20\pm 5^{\circ}\text{C}$ 的环境中静置24小时。

Test cells and batteries 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 and batteries are to be stored for 24 hours at ambient temperature ( $20\pm 5^{\circ}\text{C}$ ).

对于大电芯，在高温和低温中放置的时间最少12个小时。

For large cells and batteries, The duration of exposure to the test temperature extremes should be at least 12 hours.

### 接受准则 Acceptance criteria:

无漏液、无泄气、无分解、无破裂以及无着火现象；电芯或电池测试后的开路电压不低于测试前开路电压的90%。

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.

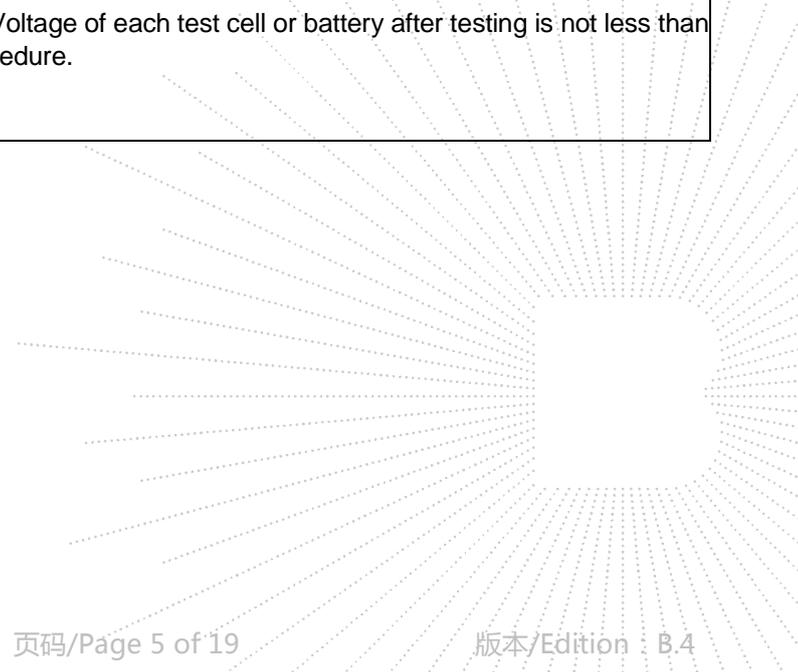
样品编号 Sample No.	样品状态 Sample Condition	质量 Weight (g)		质量损失% Weight Loss	Voltage 电压(V)		残余电压% Percentage of residual Voltage	结果 Results
		测试前 Before Test	测试后 After Test		测试前 Before Test	测试后 After Test		
B01	①	943.1	942.8	0.032	25.03	24.76	98.921	A, B
B02	①	942.4	942.1	0.032	24.99	24.72	98.920	A, B
B03	①	940.9	940.7	0.021	24.93	24.70	99.077	A, B
B04	①	941.1	940.9	0.021	24.95	24.71	99.038	A, B
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B05	②	942.5	942.2	0.032	25.03	24.74	98.841	A, B
B06	②	941.5	941.3	0.021	24.95	24.76	99.238	A, B
B07	②	941.2	941.0	0.021	24.94	24.68	98.957	A, B
B08	②	942.7	942.4	0.032	24.99	24.66	98.679	A, B
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### 结果/Results:

A -无漏液、无泄气、无分解、无破裂、无着火。No leakage, No venting, No disassembly, No rupture, No fire.

B -测试后电压不低于测试前电压的90%。Voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure.

C -其它。Others (please explain).





### T.3 振动 Vibration

样品必须牢固地安装在振动台台面上。振动以正弦波形式，从7Hz增加至200Hz，然后减少回到7Hz为一个循环，一个循环持续15分钟。对样品从三个互相垂直的方向上各进行3个小时12次的测试。每个振动方向必须是相互垂直的极性平面/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.

#### 对于电芯和小电池 For cells and small batteries:

对数扫频为：从7Hz开始保持1gn的最大加速度直到频率为18Hz，然后将振幅保持在0.8mm (总偏移1.6 mm) 并增加频率直到最大加速度达到8gn (频率约为50Hz)，将最大加速度保持在8gn直到频率增加到200 Hz.

From 7 Hz a peak acceleration of 1 gn 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 gn occurs (approximately 50 Hz). A peak acceleration of 8 gn is then maintained until the frequency is increased to 200 Hz.

#### 对于大电池 For large batteries:

对数扫频为：从7Hz开始保持1gn的最大加速度直到频率为18Hz，然后将振幅保持在0.8mm (总偏移1.6 mm) 并增加频率直到最大加速度达到2gn (频率约为25Hz)，将最大加速度保持在2gn直到频率增加到200Hz。

From 7 Hz to a peak acceleration of 1 gn 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 gn occurs (approximately 25 Hz). A peak acceleration of 2 gn is then maintained until the frequency is increased to 200 Hz.

#### 接受准则 Acceptance criteria:

无漏液、无泄气、无分解、无破裂以及无着火现象；电芯或电池测试后的开路电压不低于测试前开路电压的90%。

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.

样品编号 Sample No.	样品状态 Sample Condition	质量 Weight (g)		质量损失% Weight Loss	电压 Voltage (V)		残余电压% Percentage of residual Voltage	结果 Results
		测试前 Before Test	测试后 After Test		测试前 Before Test	测试后 After Test		
B01	①	942.8	942.7	0.011	24.76	24.76	100.000	A, B
B02	①	942.1	942.1	0.000	24.72	24.70	99.919	A, B
B03	①	940.7	940.7	0.000	24.70	24.69	99.960	A, B
B04	①	940.9	940.8	0.011	24.71	24.71	100.000	A, B
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B05	②	942.2	942.1	0.011	24.74	24.73	99.960	A, B
B06	②	941.3	941.2	0.011	24.76	24.76	100.000	A, B
B07	②	941.0	941.0	0.000	24.68	24.67	99.959	A, B
B08	②	942.4	942.4	0.000	24.66	24.66	100.000	A, B
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#### 结果/Results:

A -无漏液、无泄气、无分解、无破裂、无着火。No leakage, No venting, No disassembly, No rupture, No fire.

B -测试后电压不低于测试前电压的90%。Voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure.

C -其它。Others (please explain).

倍测检测

### T.4 冲击 Shock

以稳固的托架固定住每个电池/电芯样品，每个样品应该经受峰值加速度为150gn以及脉冲持续时间为6ms的半正弦冲击，另外，大型电池/电芯应该经受峰值加速度为50gn以及脉冲持续时间为11ms的半正弦冲击。每一个电池将受到一个半正弦冲击的峰值加速度取决于电池的质量。对于小型电池，脉冲持续时间为6毫秒，对于大型电池，脉冲时间为11毫秒。下面提供的公式用来计算适当的最小峰值加速度。

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 gn 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.

Battery	Minimum peak acceleration	Pulse duration
	150 g <sub>n</sub> or result of formula	
Small batteries	$Acceleration(g_n) = \sqrt{\frac{100850}{mass^*}}$ whichever is smaller	6 ms
	50 g <sub>n</sub> or result of formula	
Large batteries	$Acceleration(g_n) = \sqrt{\frac{30000}{mass^*}}$ whichever is smaller	11 ms

\* Mass is expressed in kilograms.

每个测试样品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。

Each sample was 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.

#### 接受准则 Acceptance criteria:

无漏液、无泄气、无分解、无破裂以及无着火现象；电芯或电池测试后的开路电压不低于测试前开路电压的90%。

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.

样品编号 Sample No.	样品状态 Sample Condition	质量 Weight (g)		质量损失% Weight Loss	电压 Voltage (V)		残余电压% Percentage of residual Voltage	结果 Results
		测试前 Before Test	测试后 After Test		测试前 Before Test	测试后 After Test		
B01	①	942.7	942.7	0.000	24.76	24.74	99.919	A, B
B02	①	942.1	942.0	0.011	24.70	24.70	100.000	A, B
B03	①	940.7	940.6	0.011	24.69	24.69	100.000	A, B
B04	①	940.8	940.8	0.000	24.71	24.70	99.960	A, B
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B05	②	942.1	942.1	0.000	24.73	24.73	100.000	A, B
B06	②	941.2	941.2	0.000	24.76	24.74	99.919	A, B
B07	②	941.0	940.9	0.011	24.67	24.67	100.000	A, B
B08	②	942.4	942.4	0.000	24.66	24.65	99.959	A, B
--	--	--	--	--	--	--	--	--

#### 结果/Results:

A - 无漏液、无泄气、无分解、无破裂、无着火。 No leakage, No venting, No disassembly, No rupture, No fire.

B - 测试后电压不低于测试前电压的90%。 Voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure.

C - 其它。 Others (please explain).

### T.5 外部短路 External short circuit

为使样品达到均匀稳定的初始温度： $57 \pm 4^{\circ}\text{C}$ ，样品需在此环境下暴露一段时间。

The samples shall be heated for a period of time noted below, to reach a homogeneous stabilized temperature of  $57 \pm 4^{\circ}\text{C}$ , measured on the external case:

小电芯和小电池至少暴露6小时。 Small cells and small batteries: 6 hours.

大电芯和大电池至少暴露12小时。 Large cells and large batteries: 12 hours.

\_\_\_\_\_小时，根据样品尺寸设计评估所得。 \_\_\_\_\_hours, assessed depended on the size and design of the sample.

然后将样品正负极用小于0.1欧姆的总电阻回路进行短路，直到：

The samples were then subjected to a short circuit condition with a total external resistance of less than 0.1 ohm, until:

小电芯，小电池和大电芯 For Small cells, small batteries and large cells:

样品外表温度恢复到 $57 \pm 4^{\circ}\text{C}$ 之后保持短路状态1小时以上。

1 hour after the external case temperature of sample has returned to  $57 \pm 4^{\circ}\text{C}$ .

大电池 For Large batteries:

样品表面温度下降所测最大温升的一半，并保持低于该数值。

After the external case temperature of sample has decreased by half of the maximum temperature increase observed during the test and remains below that value.

接受准则 Acceptance criteria:

电池表面温度不超过 $170^{\circ}\text{C}$ ，测试中和结束后6h内观察样品无分解、无破裂、无着火现象发生。

The external temperature does not exceed  $170^{\circ}\text{C}$ , and there is no disassembly, no rupture and no fire during the test and within six hours after the test.

样品编号 Sample No.	样品状态 Sample Condition	测试前电压(V) Voltage Before Test	最高温度( $^{\circ}\text{C}$ ) Maximum Temperature	结果 Results
B01	①	24.74	57.9	A, B
B02	①	24.70	57.8	A, B
B03	①	24.69	57.9	A, B
B04	①	24.70	57.7	A, B
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B05	②	24.73	57.9	A, B
B06	②	24.74	58.2	A, B
B07	②	24.67	58.1	A, B
B08	②	24.65	58.1	A, B
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结果 Results/:

A -测试中和结束后6h内观察样品无分解、无破裂、无着火现象发生 No disassembly, No rupture, No fire during the test and within six hours after the test..

B -电池表面温度未超过 $170^{\circ}\text{C}$ 。 The external temperature does not exceed  $170^{\circ}\text{C}$ .

C -其它。 Others (please explain).





## T.6 撞击 Impact /挤压 Crush

### 撞击 Impact (适用于直径大于或等于18mm的圆柱形电芯 **Applicable to cylindrical cells greater than or equal to 18 mm in diameter**)

将样品放在一个平坦的光滑平面上。将一直径为15.8 mm±0.1mm、长度不小于6cm的316不锈钢棒横过样品中部放置后，将一质量为9.1 kg±0.1 kg的重物从61±2.5 cm的高度落向样品。The sample cell or component cell is to be placed on a flat smooth surface. A 15.8 mm±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 9.1 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.

接受撞击的样品，纵轴应与平坦的表面平行并与横放在样品中心的直径15.8 mm±0.1mm弯曲表面的纵轴垂直。每一个样品只接受一次撞击。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.

### 挤压 Crush (适用于棱柱形、袋状、硬币/纽扣电芯和直径不超过18mm的圆柱形电芯 **Applicable to prismatic, pouch, coin/button cells and cylindrical cells not more than 18 mm in diameter**)

将样品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1.5cm/s。挤压持续进行，直到出现以下三种情况之一：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) 施加力达到13kN±0.78kN/The applied force reaches 13kN±0.78kN;
- (b) 样品的电压下降至少100mV/The voltage of the cell drops by at least 100 mV;
- (c) 电池变形达原始厚度的50%以上。/The cell is deformed by 50% or more of its original thickness.

棱柱形或袋状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。圆柱形应从与纵轴垂直的方向施压。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.

每个样品都是全新样品，并且只经受一次施压。施压结束后样品应静置观察6小时。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.

### 接受准则 Acceptance criteria

电池表面温度不超过170°C，测试中和结束后6h内观察样品无分解、无破裂、无着火现象发生。

The 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.

样品编号 Sample No.	样品状态 Sample Condition	测试前电压(V) Voltage Before Test	最高温度(°C) Maximum Temperature	Results
C01	⑤	3.720	22.9	A, B
C02	⑤	3.718	22.6	A, B
C03	⑤	3.722	22.7	A, B
C04	⑤	3.723	22.5	A, B
C05	⑤	3.724	22.8	A, B
C06	⑥	3.720	26.6	A, B
C07	⑥	3.719	22.6	A, B
C08	⑥	3.721	22.6	A, B
C09	⑥	3.723	58.6	A, B
C10	⑥	3.725	23.0	A, B

### 结果/Results:

A -测试中和结束后6h内观察样品无分解、无破裂、无着火现象发生。No disassembly, No rupture, No fire during the test and within six hours after the test.

B - 电池表面温度未超过170°C。The external temperature does not exceed 170°C.

C -其它。Others (please explain).



### T.7 过度充电 (电芯不适用本项测试) Overcharge

在室温下，以 2 倍的制造商宣称的最大持续充电电流对样品充电，测试时间为 24 小时。测试的最小电压如下：

The charge current shall be twice the manufacturer's recommended maximum continuous charge current. Tests are to be conducted at ambient temperature. The duration of the test shall be 24 hours. The minimum voltage of the test shall be as follows:

(a) 如果制造商宣称的充电电压不超过 18V，本测试的最小充电电压应是制造商宣称的最大充电电压的两倍或者是 22V 之中的较小者。/ 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) 如果制造商宣称的充电电压超过 18V，本测试的最小充电电压应该是制造商宣称的最大充电电压的 1.2 倍。/ 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.

测试在环境温度下进行，试验持续 24 小时。

Tests were conducted at ambient temperature  $20 \pm 5^{\circ}\text{C}$ . The duration of the test was 24 hours.

#### 接受准则 Acceptance criteria:

测试中和结束后 7 天内观察样品无解体、无起火现象发生。

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

样品编号 Sample No.	样品状态 Condition	测试前电压(V) Voltage of Before Test	过充电流(mA) Overcharge current	过充电压(V) Overcharge voltage	结果 Results
B09	①	25.05	20000	30.24	A
B10	①	24.99			A
B11	①	25.01			A
B12	①	25.04			A
B13	②	24.99			A
B14	②	25.03			A
B15	②	25.02			A
B16	②	25.02			A

#### 结果/Results:

A -测试中和结束后 7 天内观察样品无解体、无起火现象发生。No disassembly and no fire during the test and within seven days after the test.

B -其它。Others (please explain).

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### T.8 强制放电 Forced Discharge

在室温下，将单个电芯连接在12V的直流电源上进行强制放电，此直流电源供给每个电芯初始电流为制造商宣称的最大放电电流。

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.

指定的放电电流通过串联在测试电芯上的合适大小和功率的负载来获得，每个电芯的强制放电时间(小时)为额定容量除以初始电流(安培)。

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).

#### 接受准则 Acceptance criteria:

测试中和结束后7天内观察样品无解体、无起火现象发生。

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

样品编号 Sample No.	样品状态 Condition	初始放电电流(mA) Initial Discharge Current	测试前电压(V) Voltage Before Test	结果 Results
C11	③	10000	3.053	A
C12	③		3.052	A
C13	③		3.057	A
C14	③		3.056	A
C15	③		3.053	A
C16	③		3.051	A
C17	③		3.058	A
C18	③		3.051	A
C19	③		3.058	A
C20	③		3.051	A
C21	④		3.050	A
C22	④		3.056	A
C23	④		3.051	A
C24	④		3.052	A
C25	④		3.056	A
C26	④		3.059	A
C27	④		3.057	A
C28	④		3.060	A
C29	④		3.055	A
C30	④		3.057	A

#### 结果/Results:

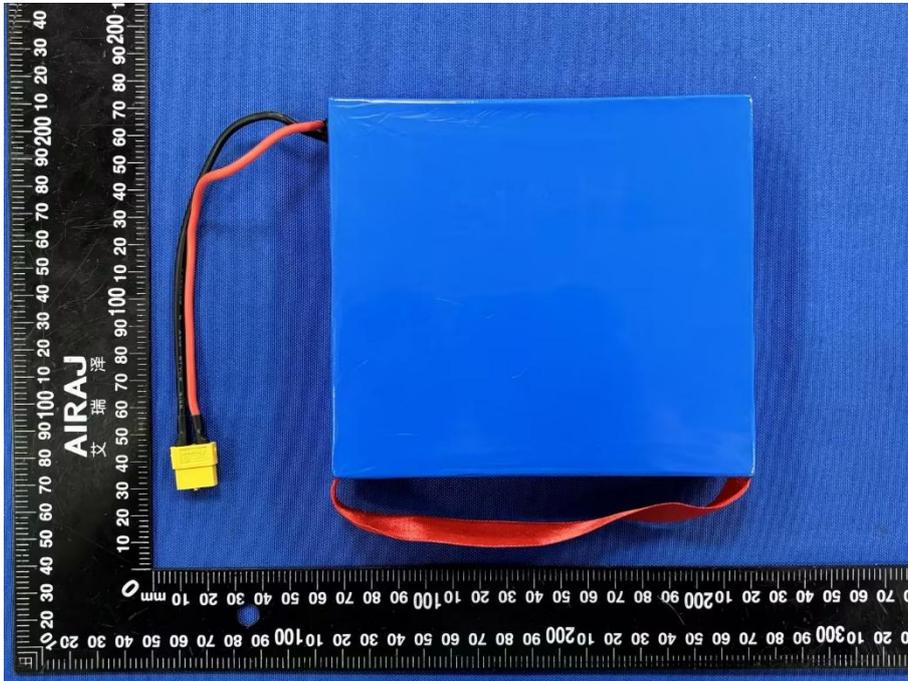
A -测试中和结束后7天内观察样品无解体、无起火现象发生。No disassembly and no fire during the test and within seven days after the test.

B -其它。Others (please explain).





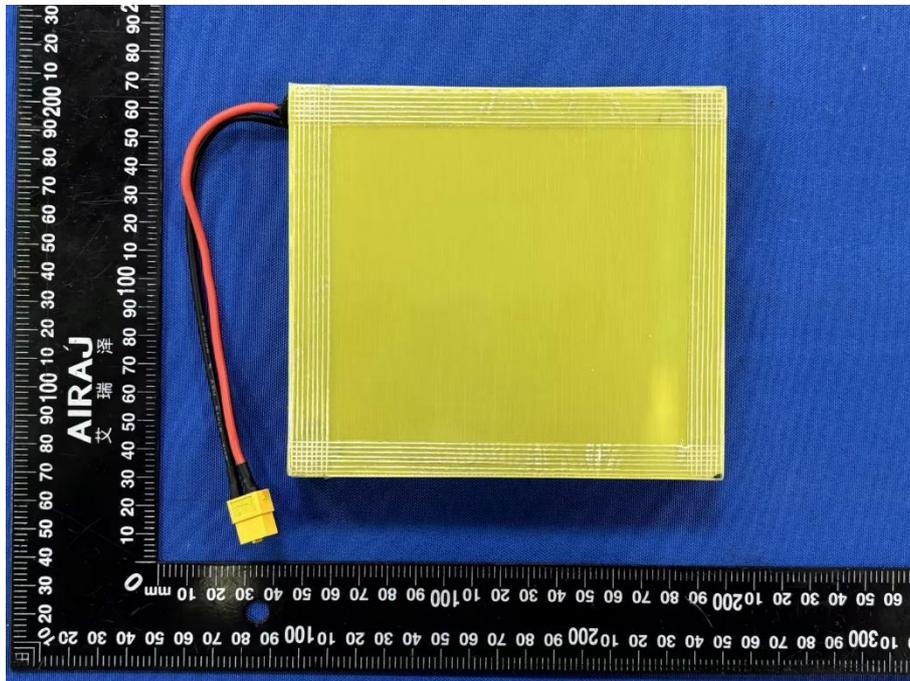
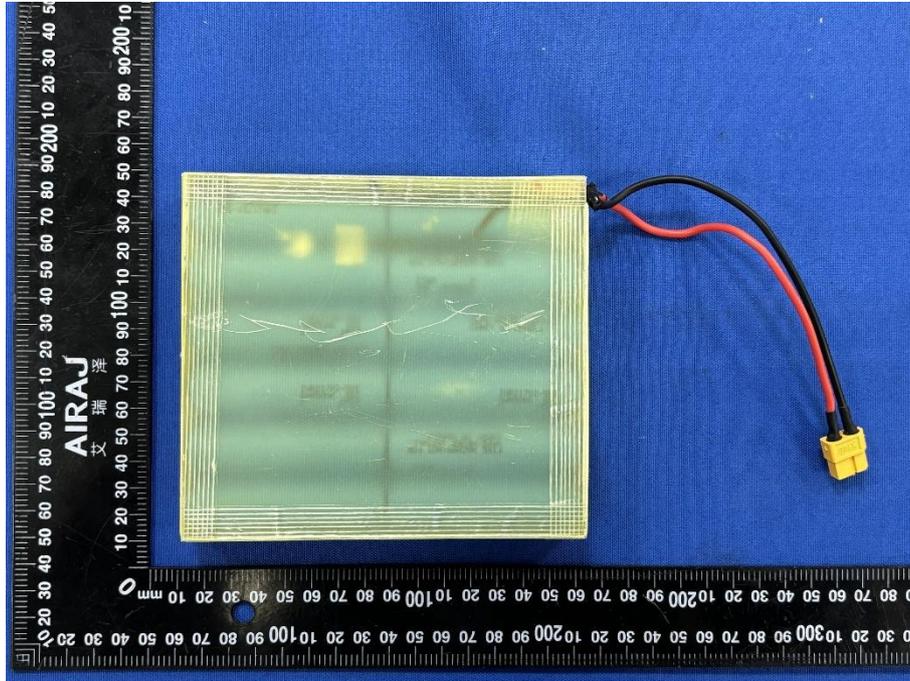
测试样品照片  
Test Sample



倍测检测



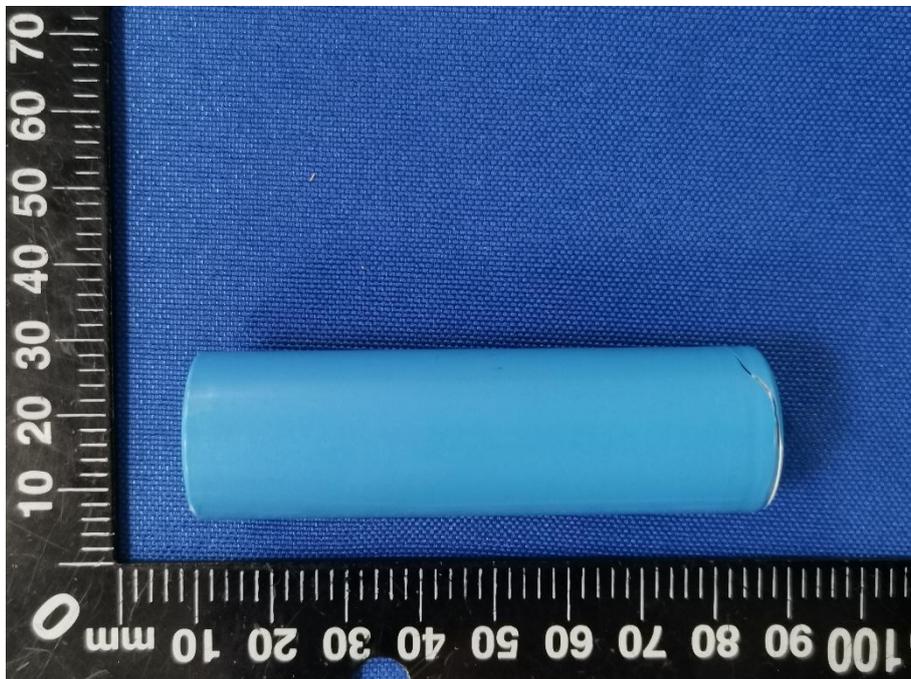
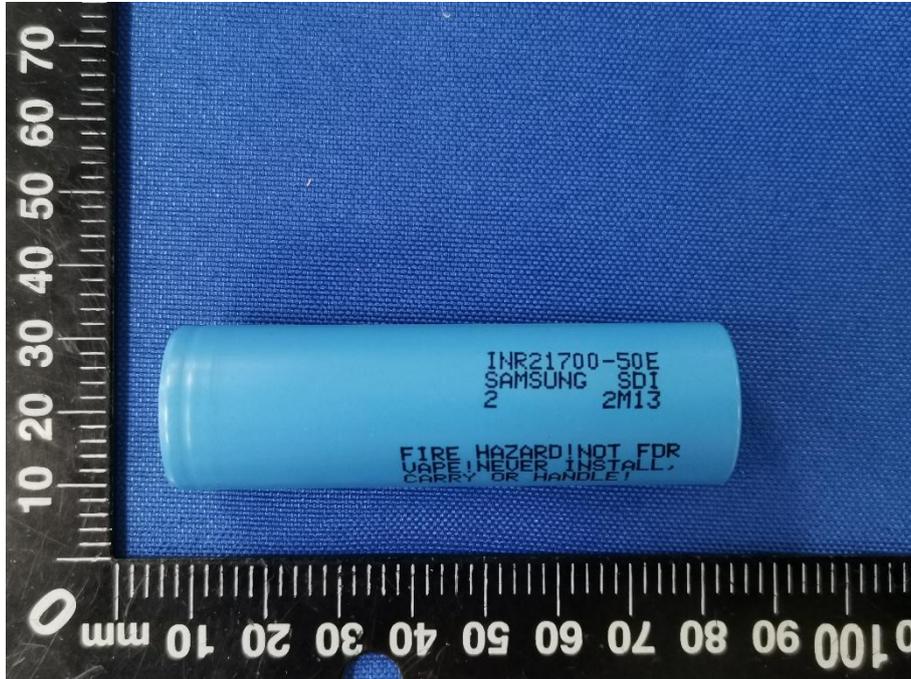
测试样品照片  
Test Sample







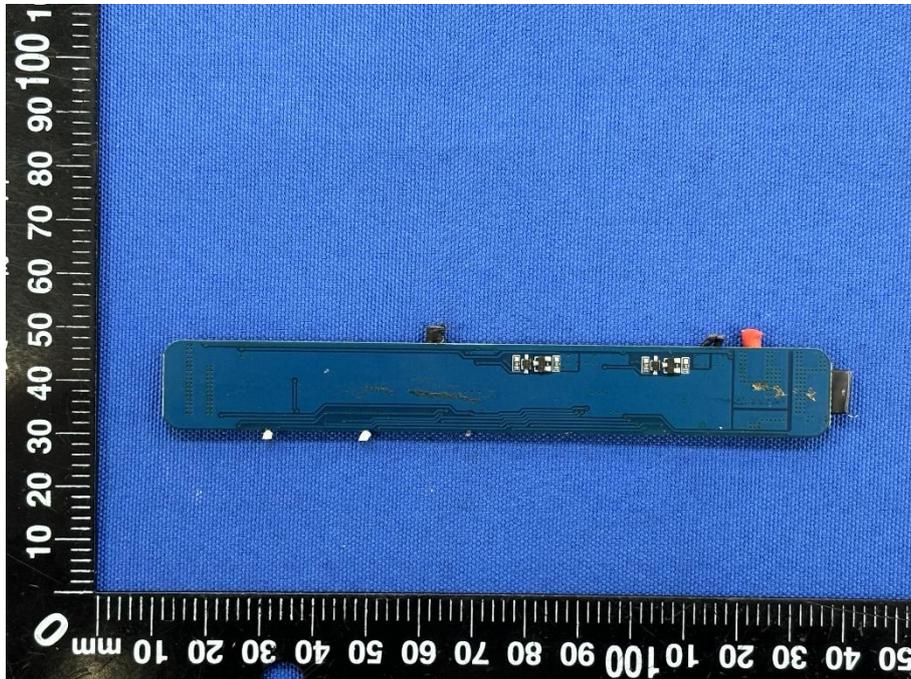
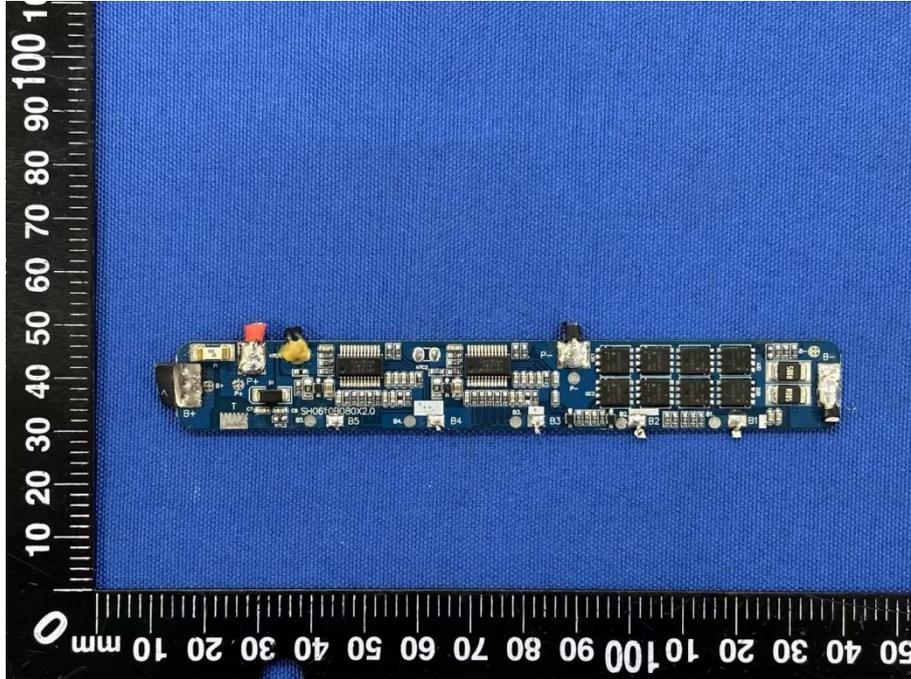
测试样品照片  
Test Sample



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验  
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测试样品照片  
Test Sample



检  
金测  
607



标签  
Label

电池型号: 21700-6S2P  
216Wh 10Ah 21.6V  
生产日期: 20240118  
执行标准: GB31241-2014



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135



## 设备清单 Equipment List

序号No.	名称Name	型号Model	设备编号Series No.
1	电池低压高空模拟试验机 Altitude Simulation Tester	GX-3020-Z	BCTC-BAT-006
2	可编程恒温恒湿试验箱 Temp & Humi. Chamber	BTKS5-150C	BCTC-BAT-009
3	电磁式振动试验机 Electromagnetic Vibration Tester	EV2010H0606	BCTC-BAT-065
4	冲击试验机 Shock Tester	SKT100	BCTC-BAT-066
5	温控型短路试验机 Thermal Control Short Tester	GX-6055-B5	BCTC-BAT-015
6	电池冲击试验机 Battery Impact Tester	BE-5066	BCTC-BAT-020
7	交流内阻测试仪 Ac internal resistance tester	AT526	BCTC-BAT-024
8	电子天平 Electric Scale	TC20KB	BCTC-BAT-035
9	多路温度测试仪 Multichannel temperature tester	AT4516	BCTC-BAT-036
10	电子负载 direct-current load	IT8512A+	BCTC-BAT-039
11	DC直流电源 DC direct-current	IT6502D	BCTC-BAT-042
12	数字万用表 Digital Multimeter	UT139C	BCTC-BAT-044
13	电子负载 direct-current load	IT8512A+	BCTC-BAT-040
14	DC直流电源 DC direct-current	IT6502D	BCTC-BAT-043
15	多路温度测试仪 Multichannel temperature tester	AT4516	BCTC-BAT-038
16	充放电设备 Charging and Discharge Tester	CE-6008n-100V60A-H	BCTC-BAT-072

注：以上仪器设备均在计量校准周期内。

Remark: The above equipment are within the calibration cycle.



声 明  
STATEMENT

1. 本次检测所用的测量设备的量值均可以溯源到国家计量标准。  
The equipment lists are traceable to the national reference standards.
2. 检测报告未经本实验室书面批准，不得部分复制。  
The test report can not be partially copied unless prior written approval is issued from our lab.
3. 检测报告未加盖“检测检测专用章”无效。  
The test report is invalid without the "special seal for inspection and testing".
4. 检测报告无批准人员签字无效。  
The test report is invalid without the signature of the approver.
5. 本次检测的结果仅对所检测样品有效。  
The test process and test result is only related to the Unit Under Test.
6. 样品的相关信息由委托单位提供，实验室不对其真实性负责。  
Sample information is provided by the client and the laboratory is not responsible for its authenticity.
7. 无 CMA 标志的检测报告，仅供科研、教学、企业产品研发及内部质量控制目的用。  
The test report without CMA mark is only used for scientific research, teaching, enterprise product development and internal quality control purposes.
8. 本实验室的质量体系符合 ISO/IEC17025 标准的要求。  
The quality system of our laboratory is in accordance with ISO/IEC17025.
9. 如对本检测报告有异议，可在收到检测报告后 15 天内向本单位申诉，逾期不予受理。  
If there is any objection to this test report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

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