检 验 报 告

Test Report

产 品 名 称 ：锂离子电池组/二次鋰電池組/锂电池/锂离子电池/锂离子蓄电池

Sample Name : Rechargeable Li-ion Battery

型号 ： L23X4PK5

Model/ Type ： L23X4PK5

委托单位 ：珠海冠宇电池股份有限公司

Client : Zhuhai CosMX Battery Co., Ltd.

珠海冠宇电池股份有限公司测试中心

Test Center of Zhuhai CosMX Battery Co., Ltd.

Applicant information
申请资料

Name of samples: 样品名称：	Rechargeable Li-ion Battery 锂离子电池组/二次鋰電池組/锂电池/锂离子电池/锂离子蓄电池
Type/Model: 型号规格：	L23X4PK5 15.44Vdc 5052mAh/78.1Wh (Rated) 5182mAh/80Wh (Typical)
Lithium content:: 锂含量：	—
Commission by: 委托单位：	Zhuhai CosMX Battery Co., Ltd. 珠海冠宇电池股份有限公司
Commissioner address: 委托单位地址：	(South Zone, First Floor, A Work Factory) No.209, Zhufeng Road, Jing'an Town, Doumen District, Zhuhai City, Guangdong, P.R. China 广东省珠海市斗门区井岸镇珠峰大道 209 号（A厂房首层南区）
Manufacturer: 制 造 商：	Zhuhai CosMX Power JinWan Subsidiary Co., Ltd. 珠海冠宇电源有限公司金湾分公司
Manufacturer Address: 制造商地址：	Workshop No.1,No.2,No.3(first,fourth and fifth floors)and No.5,No.3 Qingwan three Road,Qingwan Industry Park, Sanzao Town,Jinwan District,Zhuhai City,Guangdong ,P.R.China. 广东省珠海市金湾区三灶镇青湾工业区青湾三路3号的厂房一、厂房二、厂房三（一层、四层、五层）、厂房五
Factory: 生产厂：	Zhuhai CosMX Power JinWan Subsidiary Co., Ltd. 珠海冠宇电源有限公司金湾分公司
Factory address: 生产厂地址：	Workshop No.1,No.2,No.3(first,fourth and fifth floors)and No.5,No.3 Qingwan three Road,Qingwan Industry Park, Sanzao Town,Jinwan District,Zhuhai City,Guangdong ,P.R.China. 广东省珠海市金湾区三灶镇青湾工业区青湾三路3号的厂房一、厂房二、厂房三（一层、四层、五层）、厂房五
Appearance: 样品外观颜色：	Black 黑色
Sample status: 样品状态：	Good 完好
Quantity of sample: 样品数量：	46Pcs
Sample identification: 样品标识序号：	C1#～C46#
Receiving date: 接样日期：	2023.06.16
Start test date: 测试开始日期：	2023.06.16
Completing date: 完成日期：	2023.06.24

Conclusion/结论：

The submitted samples comply with the requirements of Section 38.3 of the Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7

样品符合联合国《试验和标准手册》第七修订版第 38.3 节的要求。

Tested : 测试：	Fang Ju 方菊 Test Engineer 测试工程师	Seal/检验专用章： Date of issue：2023.06.24
Reviewed : 审核：	Wang Li 王利 Quality Manager 质量负责人 Xiao Duoyu 肖铎渔 Technical Manager 技术负责人	
Approved : 批准：	Dong Jiaqin 董家勤 Authorized Manager 授权签字人	

General product information
样品描述及说明

Sample Type:
样品类型：

Rechargeable or not 是否可充电	

☐ Cell 电池	Use 用途	—	Electrochemistry System 电池化学组分	--
■ Battery 电池组	Use 用途	Notebook Notebook 笔记本电脑	Battery Model 型号	L23X4PK5
	Composing Mode 组成方式	4S1P 4串1并	Electrochemistry System 电池化学组分	$LiCoO_2$ 钴酸锂
	Cell model 电池型号	CA3862E1G-Q3	Cell Capacity 电池容量	Typ：5335mAh Min：5180mAh
	Manufacturer Of Cell 电池生产厂	Zhuhai CosMX Battery Co., Ltd. 珠海冠宇电池有限公司		

Sample parameters:
样品参数：

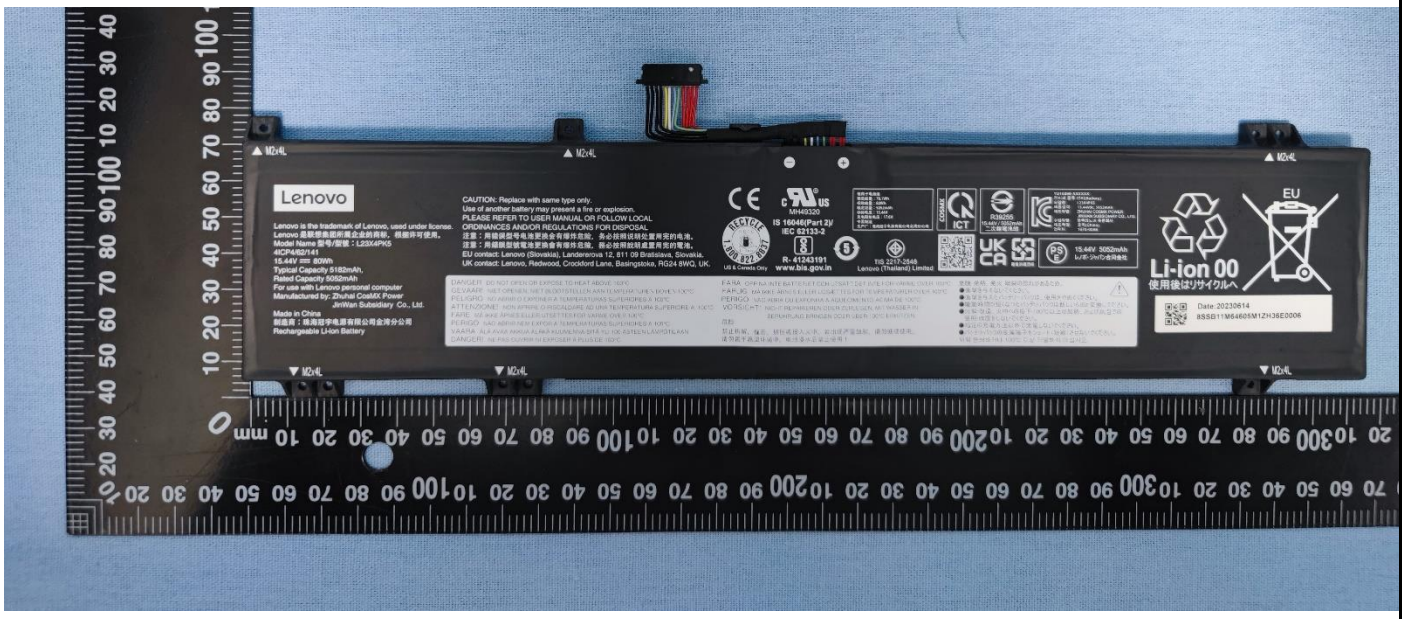
Nominal Voltage 标称电压	15.44V	Rated Capacity 额定容量	5052mAh	Rated Energy 额定能量	78.1Wh
Limited Charging Voltage 充电限制电压	17.60V	Max.Charging Current 最大持续充电电流	16.005A	Standard Charging Current 标准充电电流	3.735A
Discharge Cut-off Voltage 放电终止电压	12.00V	Max. Discharging Power 最大持续放电功率	230W	Charge Cut-off Current 充电截止电流	0.267A

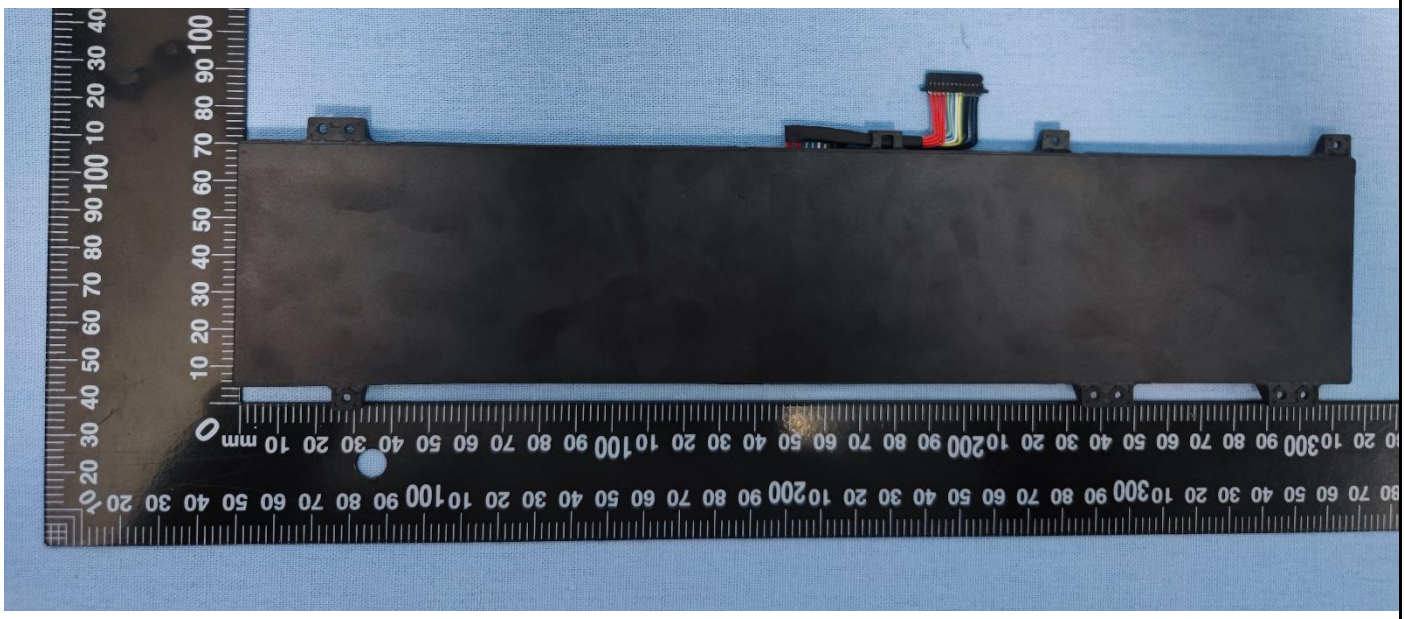
Test Conclusion
测试结论

No. 序号	Name of test 测试项目名称		Test result 测试结果	Conclusion 本项结论	Remarks 备注
1	Altitude simulation 高度模拟	The submitted samples comply with the requirements of Section 38.3 of the Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 样品符合联合国《试验和标准手册》第七修订版第38.3节的要求。	See Appendix 1	P	
2	Thermal test 温度试验		See Appendix 2	P	
3	Vibration 振动		See Appendix 3	P	
4	Shock 冲击		See Appendix 4	P	
5	External Short-circuit 外部短路		See Appendix 5	P	
6	Impact 撞击		See Appendix 6	N/A	
	Crush 挤压		See Appendix 6	P	
7	Overcharge 过度充电		See Appendix 7	P	
8	Forced discharge 强制放电		See Appendix 8	P	

Photos of samples and markings
样品及标识照片

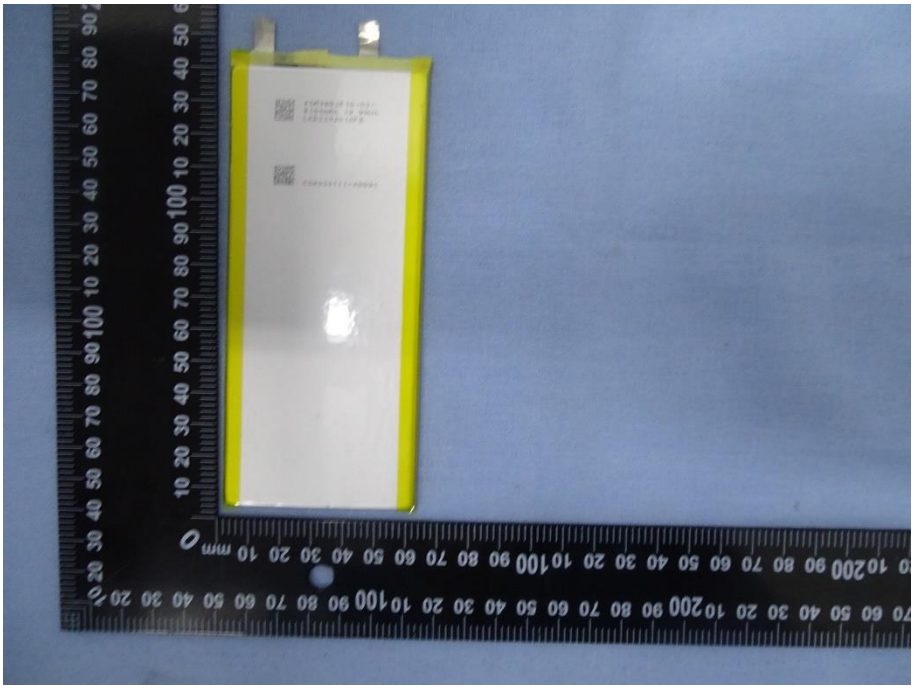
Battery（L23X4PK5 15.44Vdc 5052mAh/78.1Wh (Rated) 5182mAh/80Wh (Typical)）

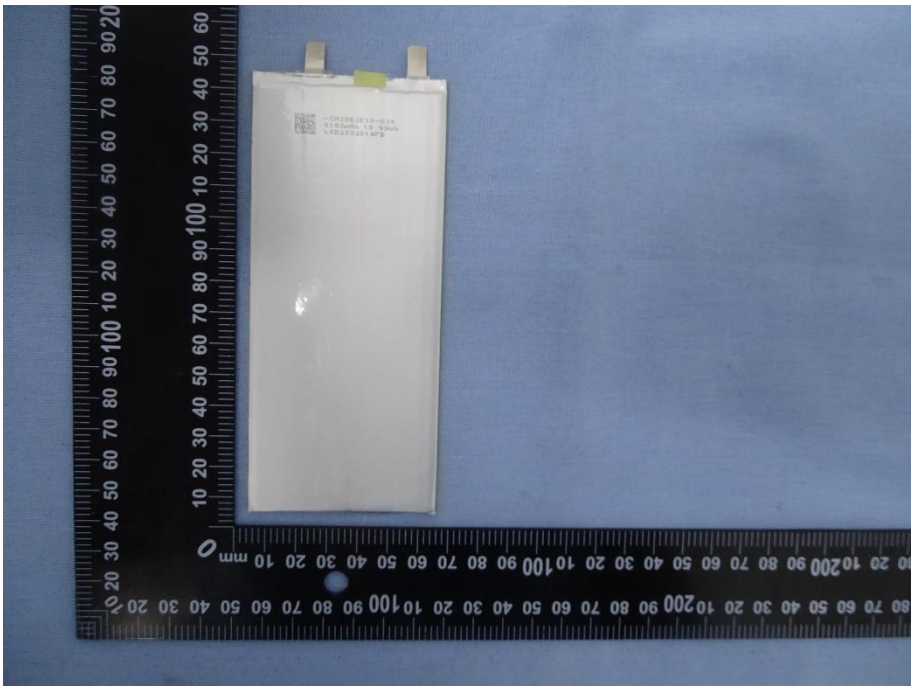




Photos of samples and markings
样品及标识照片

Cell（CA3862E1G-Q3 3.86V 5180mAh）





Appendix 1
附表 1

Test Items 测试项目	Altitude simulation 高度模拟
1.1	**Test procedure** 测试步骤
	Test cells and batteries shall be stored at a pressure of 11.6kPa or less for at least six hours at ambient temperature (20±5℃). 试验电池芯和电池在环境温度(20±5℃)下，储存在小于等于11.6kPa的压力下至少六小时。
1.2	**Sample status** 样品状态
	C1# ~ C4#, at first cycle in fully charged states; C1# ~ C4#，在第1个循环完全充电； C5# ~ C8#, after 25 cycle in fully charged states. C5# ~ C8#，在第25个循环完全充电。
1.3	**Result** 测试结果

Sample No. 样品编号	Before Test测试前		After Test测试后		Mass loss 质量损失 (M<1g: 0.5％ 1g≤M≤75g: 0.2％ M>75g: 0.1％)	Residual OCV 剩余电压 (≥90%)	Test result 测试结果
	Mass 样品质量 (g)	Voltage 开路电压 (V)	Mass 样品质量 (g)	Voltage 开路电压 (V)			
C1#	344.45	17.4868	344.43	17.4606	0.0058	99.8502	**O**
C2#	344.49	17.4758	344.46	17.4506	0.0087	99.8558	**O**
C3#	344.80	17.4694	344.79	17.4439	0.0029	99.8540	**O**
C4#	344.53	17.4749	344.52	17.4508	0.0029	99.8621	**O**
C5#	344.33	17.4867	344.31	17.4710	0.0058	99.9102	**O**
C6#	344.53	17.4737	344.50	17.4580	0.0087	99.9102	**O**
C7#	344.72	17.4789	344.70	17.4612	0.0058	99.8987	**O**
C8#	344.77	17.4768	344.76	17.4613	0.0029	99.9113	**O**
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

Note: **L**-Leakage, **V**-Venting, **D** -Disassembly, **R** -Rupture, **F**-Fire, **O**-No leakage, no venting, no disassembly, no rupture, no fire.

注：L- 泄漏；V- 排气；D- 解体；R- 破裂；F - 起火；O- 无泄漏、无排气、无解体、无破裂、无起火。

Appendix 2
附表 2

Test Items 测试项目	Thermal test 温度测试
1.1	**Test procedure** 测试步骤
	Test cells and batteries are to be stored for at least six hours at a test temperature equal to 72±2℃, followed by storage for at least six hours at a test temperature equal to -40±2℃, The maximum time interval between test temperature extremes in 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℃). 将电芯和电池在温度为72±2℃的条件下贮存不少于6个小时，然后，在温度-40±2℃条件下贮存不少于6个小时，两个温度间的间隔最长为30min,重复操作上述步骤直到10次，然后，将其在环境温度为20±5℃的条件下放置24个小时。
1.2	**Sample status** 样品状态
	C1# ~ C4#, at first cycle in fully charged states; C1# ~ C4#，在第1个循环完全充电； C5# ~ C8#, after 25 cycle in fully charged states. C5# ~ C8#，在第25个循环完全充电。
1.3	**Result** 测试结果

Sample No. 样品编号	Before Test测试前		After Test测试后		Mass loss 质量损失 (M<1g: 0.5% 1g≤M≤75g: 0.2% M>75g: 0.1%)	Residual OCV 剩余电压 (≥90%)	Test result 测试结果
	Mass 样品质量 (g)	Voltage 开路电压 (V)	Mass 样品质量 (g)	Voltage 开路电压 (V)			
C1#	344.43	17.4606	344.32	17.1517	0.0319	98.2309	**O**
C2#	344.46	17.4506	344.34	17.1574	0.0348	98.3198	**O**
C3#	344.79	17.4439	344.67	17.1587	0.0348	98.3650	**O**
C4#	344.52	17.4508	344.41	17.1513	0.0319	98.2837	**O**
C5#	344.31	17.4710	344.21	17.1556	0.0290	98.1947	**O**
C6#	344.50	17.4580	344.41	17.1567	0.0261	98.2741	**O**
C7#	344.70	17.4612	344.59	17.1549	0.0319	98.2458	**O**
C8#	344.76	17.4613	344.65	17.1534	0.0319	98.2367	**O**
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

Note: **L**-Leakage, **V**-Venting, **D** -Disassembly, **R** -Rupture, **F**-Fire, **O**-No leakage, no venting, no disassembly, no rupture, no fire.

注：L- 泄漏；V- 排气；D- 解体；R- 破裂；F - 起火；O- 无泄漏、无排气、无解体、无破裂、无起火。

Appendix 3
附表 3

Test Items 测试项目	Vibration 振动
1.1	**Test procedure** 测试步骤
	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 wave form 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 position of the cell. 将电芯和电池牢固地安装在振动台的台面上，然后开始振动。振动以正弦波形式，以7Hz增加至200Hz，然后再减少回到7Hz为一个循环，一个循环持续15分钟的对数扫频。每个电芯和电池从三个互相垂直的方向上循环12次，3个小时。
1.2	**Sample status** 样品状态
	C1# ~ C4#, at first cycle in fully charged states; C1# ~ C4#, 在第1个循环完全充电； C5# ~ C8#, after 25 cycle in fully charged states. C5# ~ C8#, 在第25个循环完全充电。
1.3	**Result** 测试结果

Sample No. 样品编号	Before Test测试前		After Test测试后		Mass loss 质量损失 (M<1g: 0.5% 1g≤M≤75g: 0.2% M>75g: 0.1%)	Residual OCV 剩余电压 (≥90%)	Test result 测试结果
	Mass 样品质量（g)	Voltage 开路电压 (V)	Mass 样品质量 (g)	Voltage 开路电压 (V)			
C1#	344.32	17.1517	344.30	17.1483	0.0058	99.9802	**O**
C2#	344.34	17.1574	344.31	17.1526	0.0087	99.9720	**O**
C3#	344.67	17.1587	344.65	17.1533	0.0058	99.9685	**O**
C4#	344.41	17.1513	344.37	17.1486	0.0116	99.9843	**O**
C5#	344.21	17.1556	344.19	17.1501	0.0058	99.9679	**O**
C6#	344.41	17.1567	344.38	17.1516	0.0087	99.9703	**O**
C7#	344.59	17.1549	344.58	17.1514	0.0029	99.9796	**O**
C8#	344.65	17.1534	344.62	17.1517	0.0087	99.9901	**O**
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

Note: **L**-Leakage, **V**-Venting, **D** -Disassembly, **R** -Rupture, **F**-Fire, **O**-No leakage, no venting, no disassembly, no rupture, no fire.

注：L- 泄漏；V- 排气；D- 解体；R- 破裂；F - 起火；O- 无泄漏、无排气、无解体、无破裂、无起火。

Appendix 4
附表 4

Test Items 测试项目	Shock 冲击
1.1	**Test procedure** 测试步骤
	Test cells and batteries shall be secured to the testing machine, and each cell shall be subjected to a half-sine shock of peak acceleration of 150g_n and pulse duration of 6 milliseconds. Large cells may be subjected to a half-sine shock of peak acceleration of 50g_n and pulse duration of 11 milliseconds. Small batteries shall be subjected to a half-sine shock of peak acceleration of 150g_n (or Acceleration(g_n)= $\sqrt{\frac{100850}{mass}}$,which is smaller) and pulse duration of 6 milliseconds, large batteries shall be subjected to a half-sine of peak acceleration of 50g_n (or Acceleration(g_n)= $\sqrt{\frac{30000}{mass}}$,which is smaller)and pulse duration of 11 milliseconds. Each cell or battery shall be 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 or battery for a total of 18 shocks 以稳固的托架固定住每个电芯和电池样品的全部配件表面。对每个电芯以峰值为150g_n的半正弦的加速度撞击，脉冲持续6毫秒，大型电芯须经受最大加速度50g_n和脉冲持续时间11毫秒的半正弦波冲击。对每个电池以峰值为150g_n（或与$\sqrt{\frac{100850}{mass}}$中的较小值）的半正弦的加速度撞击，脉冲持续6毫秒，大型电池组须经受最大加速度50g_n（或与$\sqrt{\frac{30000}{mass}}$中的较小值）和脉冲持续时间11毫秒的半正弦波冲击。每个电池或电池组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。
1.2	**Sample status** 样品状态
	C1# ~ C4#, at first cycle in fully charged states; C1# ~ C4#，在第1个循环完全充电； C5# ~ C8#, after 25 cycle in fully charged states. C5# ~ C8#，在第25个循环完全充电。
1.3	**Result** 测试结果

Sample No. 样品编号	Before Test测试前		After Test测试后		Mass loss 质量损失 (M<1g: 0.5% 1g≤M≤75g: 0.2% M>75g: 0.1%)	Residual OCV 剩余电压 (≥90%)	Test result 测试结果
	Mass 样品质量 (g)	Voltage 开路电压 (V)	Mass 样品质量 (g)	Voltage 开路电压 (V)			
C1#	344.30	17.1483	344.27	17.1473	0.0087	99.9942	**O**
C2#	344.31	17.1526	344.29	17.1514	0.0058	99.9930	**O**
C3#	344.65	17.1533	344.62	17.1526	0.0087	99.9959	**O**
C4#	344.37	17.1486	344.35	17.1482	0.0058	99.9977	**O**
C5#	344.19	17.1501	344.17	17.1494	0.0058	99.9959	**O**
C6#	344.38	17.1516	344.34	17.1504	0.0116	99.9930	**O**
C7#	344.58	17.1514	344.55	17.1503	0.0087	99.9936	**O**
C8#	344.62	17.1517	344.58	17.1502	0.0116	99.9913	**O**
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

Note: **L**-Leakage, **V**-Venting, **D**-Disassembly, **R**-Rupture, **F**-Fire, **O**-No leakage, no venting, no disassembly, no rupture, no fire.

注：L- 泄漏；V- 排气；D- 解体；R- 破裂；F - 起火；O- 无泄漏、无排气、无解体、无破裂、无起火。

Appendix 5
附表 5

Test Items 测试项目	External short circuit 外部短路
1.1	**Test procedure** 测试步骤
	The cell or battery to be tested shall be temperature stabilized so that its external case temperature reaches 57±4℃ and then the cell or battery shall be subjected to a short circuit condition with a total external resistance of less than 0.1 ohm at 57±4℃, This short circuit condition is continued for at least one hour after the cell or battery external case temperature has returned to 57±4℃, the cell or battery must be observed for a further six hour for the test to be concluded. 保持试验环境温度稳定在57±4℃，以使电芯或电池样品外表温度达到57±4℃，然后，在此温度下，将其正负极用小于0.1欧姆的线路短接，待电芯或电池的外表温度恢复到57±4℃之后再持续1小时以上，对电芯或电池必须进一步观察6个小时才能下结论。
1.2	**Sample status** 样品状态
	C1# ~ C4#, at first cycle in fully charged states; C1# ~ C4#, 在第1个循环完全充电； C5# ~ C8#, after 25 cycle in fully charged states. C5# ~ C8#, 在第25个循环完全充电。
1.3	**Result** 测试结果

Sample No. 样品编号	Max. External Temperature 样品表面最高温度(℃)	Test result 测试结果	Remark 备注
C1#	57.6	**O**	—
C2#	57.4	**O**	—
C3#	57.7	**O**	—
C4#	58.1	**O**	—
C5#	58.0	**O**	—
C6#	57.7	**O**	—
C7#	57.5	**O**	—
C8#	57.3	**O**	—
—	—	—	—
—	—	—	—

Note: **D** –Disassembly, **R** –Rupture, **F** –Fire, **OT** –Over Temperature, **O** –no disassembly, no rupture, no fire, no Over temperature

注： D- 解体；R- 破裂；F– 起火；OT– 超过170℃；O– 无解体、无破裂、无起火、不超过170℃

Appendix 6
附表 6

Test Items 测试项目	Crush 挤压			
1.1	**Test procedure** 测试步骤			
	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) The applied force reaches 13kN±0.78kN; (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. 电池芯或组成电池芯在两个平面间挤压。挤压在第一个接触点以约1.5cm/s 的速度慢慢进行，直到下面三个选项之一达到为止：(a)作用力达到 13kN±0.78kN；(b)电池芯电压降至少达到100mV；(c)电池厚度和最初比较变形至少50%。			
1.2	**Sample status** 样品状态			
	C11# ~ C15#, at first cycle at 50% of the design rated capacity; C11# ~ C15#，在第1个循环充50%的额定容量； C16# ~ C20#, after 25 cycle at 50% of the design rated capacity. C16# ~ C20#，在第25个循环充50%的额定容量。			
1.3	**Result** 测试结果			
Sample No. 样品编号	Max. External Temperature 样品表面最高温度(℃)	Ending condition 终止条件	Test result 测试结果	Remark 备注
C9#	23.4	a	**O**	—
C10#	23.1	a	**O**	—
C11#	23.1	a	**O**	—
C12#	23.2	a	**O**	—
C13#	23.4	a	**O**	—
C14#	23.4	a	**O**	—
C15#	23.3	a	**O**	—
C16#	23.4	a	**O**	—
C17#	23.4	a	**O**	—
C18#	23.5	a	**O**	—

Note: **D** -Disassembly, **R** -Rupture, **F**-Fire, **OT** –Over Temperature, **O**- no disassembly, no fire, no Over temperature

注：D- 解体；R- 破裂；F - 起火；OT– 超过170℃；O-无解体、无起火、不超过170℃

Appendix 7
附表 7

Test Items 测试项目	Overcharge 过度充电
1.1	**Test procedure** 测试步骤
	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 or 22V，whichever is less. When the manufacturer's recommended charge voltage is more than 18V, the charging voltage of the test shall be 1.2 times maximum charge voltage. The charging current is 2 times of the maximum charging current recommended by the manufacturer。 如果厂家推荐的充电电压不超过18V，本测试的最小充电电压应该是两倍的厂家标定最大充电电压或者是22V，取其中较小者。如果厂家推荐的充电电压超过18V，充电电压应该为 1.2倍的厂家标定最大充电电压。充电电流为厂家推荐的最大充电电流2倍。
1.2	**Sample status** 样品状态
	C21# ~ C24#, at first cycle in fully charged states; C21# ~ C24#，在第1个循环完全充电； C25# ~ C28#, after 25 cycle in fully charged states. C25# ~ C28#，在第25个循环完全充电。
1.3	**Result** 测试结果

Sample No. 样品编号	Voltage Before test(V) 测试前开路电压(V)	Voltage test(V) 试验电压(V)	Test result 测试结果	Remark 备注
C19#	17.4750	22.000	O	—
C20#	17.4749	22.000	O	—
C21#	17.4707	22.000	O	—
C22#	17.4699	22.000	O	—
C23#	17.4841	22.000	O	—
C24#	17.4814	22.000	O	—
C25#	17.4791	22.000	O	—
C26#	17.4768	22.000	O	—

Note: **D** -Disassembly, **F**-Fire, **O**- no disassembly, no fire.

注： D- 解体；F - 起火；O-无解体、无起火。

Appendix 8
附表 8

Test Items 测试项目	Forced discharge 强制放电
1.1	**Test procedure** 测试步骤
	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 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). 在20±5℃的环境温度下，将单个电芯连接在12V的直流电源上进行强制放电，此直流电源提供每个电芯初始电流为制造厂指定的最大放电电流，放电时间为额定容量除以初始电流。
1.2	**Sample status** 样品状态
	C29# ~ C38#, at first cycle in fully discharged states; C29# ~ C38#，在第1个循环完全放电； C39# ~ C48#, after 25 cycles ending in fully discharged states. C39# ~ C48#，在第25个循环完全放电。
1.3	**Result** 测试结果

Sample No. 样品编号	Voltage Before test 测试前开路电压(V)	Test result 测试结果	Sample No. 样品编号	Voltage Before test 测试前开路电压(V)	Test result 测试结果
C27#	3.2512	**O**	C37#	3.2438	**O**
C28#	3.2495	**O**	C38#	3.2371	**O**
C29#	3.2481	**O**	C39#	3.2388	**O**
C30#	3.2547	**O**	C40#	3.2385	**O**
C31#	3.2473	**O**	C41#	3.2352	**O**
C32#	3.2465	**O**	C42#	3.2390	**O**
C33#	3.2546	**O**	C43#	3.2391	**O**
C34#	3.2512	**O**	C44#	3.2343	**O**
C35#	3.2530	**O**	C45#	3.2438	**O**
C36#	3.2536	**O**	C46#	3.2399	**O**

Note: **D** -Disassembly, **F**-Fire, **O**- no disassembly, no fire.
注： D- 解体；F - 起火；O-无解体、无起火。

Test equipment list
仪器设备清单

No. 序号	Name 名 称	Type 型号	Equipment No. 编 号	Calibration Date 校准有效期至	Used 本次使用 （√）
1	Battery Charge And Discharging Tester 电池测试系统	CT3001D	GYA-E-2325	2023-08-07	√
2	Low Pressure Chamber 低压高空模拟试验箱	GX-3020-Z	GYA-O-0039	2024-03-08	√
3	Cold and hot shock test chamber 冷热冲击试验机	CZ-H-80B	GYA-T-0796	2024-05-21	√
4	Vibration Platform 电动振动试验机	ES-3-150	GYA-O-0687	2024-04-07	√
5	Shock Platform 气动垂直冲击碰撞试验台	SY11-25	GYA-F-0146	2023-06-28	√
6	Multichannel short circuit 电池短路试验机	GK-8048	GYA-T-0155	2024-04-07	√
7	Crush Platform 伺服挤压试验机	BE-6045-2T	GYA-F-0288	2024-03-08	√
8	DC regulated power supply 直流稳压电源	IT6163	GYA-E-1271	2024-04-05	√
9	DC regulated power supply 直流稳压电源	IT6522A	GYA-E-1616	2024-04-05	√
10	DC regulated power supply 直流稳压电源	IT6512	GYA-E-1692	2024-04-05	√
11	DC electronic load 直流电子负载	IT8816	GYA-E-1617	2024-04-05	√
12	Electronic Scale 电子天平	ESJ200-4B	GYA-F-1435	2024-05-09	√
13	Internal resistance tester 电压内阻测试仪	BT3562	GYA-E-1806	2024-05-09	√
14	Data Collector 数据采集仪	HIOKI	GYA-E-1705	2023-12-09	√
15	Data Collector 数据采集仪	HIOKI	GYA-E-2065	2023-12-05	√
16	Data Collector 数据采集仪	HIOKI	GYA-E-1121	2023-12-09	√

No. 序号	Name 名 称	Type 型号	Equipment No. 编 号	Calibration Date 校准有效期至	Used 本次使用 （√）
17	DC regulated power supply 直流稳压电源	IT6512	GYA-E-1690	2024-04-05	√
18	DC electronic load 直流电子负载	IT6163	GYA-E-1693	2024-04-05	√
19	DC regulated power supply 直流稳压电源	IT6512	GYA-E-1691	2024-04-05	√

注 意 事 项
Attention

1. 本报告无检测单位“检验专用章”无效。
   The test report is invalid without the official stamp of the lab.
2. 未经本实验室书面同意，不得部分地复制本报告。
   Nobody is allowed to photocopy or partly photocopy this report without written permission of the lab.
3. 本报告无批准人、审核人签名无效。
   The test report is invalid without the signature of ratifier, reviewer.
4. 本报告涂改无效。
   The test report is invalid if altered.
5. 如果报告中部分项目相对于测试依据有偏离的，将在当前测试项目中予以说明。
   If any test method is deviation from the designated test method, must be commented in the test data sheet.
6. 对检测报告若有异议，应于收到报告之日起十五天内向检测单位提出。
   Objections to the test report must be submitted to lab within 15 days.
7. 本报告仅对送检样品负责。
   The test report is valid for the tested sample only.
8. 本检测结果中**“N/A”**表示“不适用”，**“P”**表示“通过”，**“F”**表示“不通过”。
   As for the test result “N/A” means “Not Applicable”, “P” means “Pass” and “F” means “Fail”.

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