广东出入境检验检疫局检验检疫技术中心
GUANGDONG INSPECTION AND QUARANTINE TECHNOLOGY CENTER

地址：中国广州市珠江新城花城大道66号B座
Add: Tower B,No.66 Huacheng Avenue, Zhujiang Xincheng,Guangzhou,China
Website:www.iqtc.cn Postcode:510623

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Date: 2019-01-03

UN38.3 报告
UN38.3 Test Report

样品名称： 锂离子充电电池组

Sample Name: Lithium ion batteries

委托单位： 台州中能摩登电动车科技有限公司

Applicant: TAIZHOU ZNEN MODERN EV TECH CO., LTD

广东检验检疫技术中心

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检 验 证 书
TEST REPORT

样品名称 Sample Name	锂离子充电电池组 Lithium ion batteries				
型号 Model	31500-MD28-B201				
委托单位 Applicant	台州中能摩登电动车科技有限公司 TAIZHOU ZNEN MODERN EV TECH CO., LTD				
委托单位地址 Applicant Address	中国浙江台州湾循环经济开发区海秀路 99 号 6-1 幢 BUILDING 6-1,NO.99,HAIXIU ROAD,TAIZHOU CITY,ZHEJIANG PROVINCE				
生产单位 Manufacture	中山欧力工业有限公司 ZHONGSHAN FORSEE POWER INDUSTY CO.,LTD				
生产单位地址 Manufacture Address	广东省中山市小榄镇工业区工业大道中 39 号 39 middle industrial main road,xiaolan industrial zone,zhongshan GD				
标称电压 Nominal Voltage	60V	额定容量 Rated Capacity	20.8Ah	充电限制电压 Limited Charge Voltage	65.6V
标准充电电流 Standard Charge Current	4.0A	最大充电电流 Maximum Charge Current	10A	截止电流 Cut Off Current	500mA
标准放电电流 Standard discharge Current	4.0A	最大放电电流 Maximum Discharge Current	20A	放电截止电压 Discharge Cut-off Voltage	48V
电池中的电芯数量 Cell Number In Each Battery	128 PCS	电芯型号 Cell Model	LGEBM261865	电芯容量 Cell Capacity	2600mAh
电芯生产单位 Manufacturer of cell	LG				
测试方法和判定标准 Test method and criterion	联合国《关于危险货物运输的建议书 试验和标准手册》ST/SG/AC.10/11/Rev.6/Amend.1, 38.3 UNITED NATIONS " Recommendations on the TRANSPORT OF DANGEROUS GOODS", Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amend.1, 38.3				
接样时间 Accepted date	2018-12-08	测试日期 Test date	2018-12-08~2019-01-03		
测试项目 Test items	高度模拟、温度试验、振动、冲击、外部短路、挤压、过度充电、强制放电。 Altitude simulation, Thermal test, Vibration, Shock, External short circuit, Crush, Overcharge, Forced discharge.				
结论 Conclusion	经测试，该样品符合联合国《关于危险货物运输的建议书 试验和标准手册》ST/SG/AC.10/11/Rev.6/Amend.1, 38.3 标准要求。 The sample has passed the test items of UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS", Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amend.1, 38.3.				
备注 Remark	检测结果仅对样品有效。 The test results are only valid for the test samples submitted the applicant.				

批准 Approver：　审核 Checker：　主检 Appraiser：

序号 No.	测试项目名称 Name of test	标准要求或标准条款号 Stand requirement or the clause number of standard	测试结果 Test result	本项结论 Test conclusion	备注 Remark
1	高空模拟 Altitude simulation	联合国《关于危险货物运输的建议书 试验和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amend.1，38.3 试验 T.1 Test T.1	见附表 1 See Appendix 1	合格 Passed	/
2	温度循环 Thermal test	联合国《关于危险货物运输的建议书 试验和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amend.1，38.3 试验 T.2 Test T.2	见附表 2 See Appendix 2	合格 Passed	/
3	振动 Vibration	联合国《关于危险货物运输的建议书 试验和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amend.1，38.3 试验 T.3 Test T.3	见附表 3 See Appendix 3	合格 Passed	/
4	冲击 Shock	联合国《关于危险货物运输的建议书 试验和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amend.1，38.3 试验 T.4 Test T.4	见附表 4 See Appendix 4	合格 Passed	/
5	外部短路 External short circuit	联合国《关于危险货物运输的建议书 试验和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amend.1，38.3 试验 T.5 Test T.5	见附表 5 See Appendix 5	合格 Passed	/
6	撞击 Impact	联合国《关于危险货物运输的建议书 试验和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amend.1，38.3 试验 T.6 Test T.6	见附表 6 See Appendix 6	合格 Passed	/
7	过度充电 Overcharge	联合国《关于危险货物运输的建议书 试验和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amend.1，38.3 试验 T.7 Test T.7	见附表 7 See Appendix 7	合格 Passed	/
8	强制放电 Forced discharge	联合国《关于危险货物运输的建议书 试验和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amend.1，38.3 试验 T.8 Test T.8	见附表 8 See Appendix 8	合格 Passed	/
测试环境 Test environment condition		环境温度：20℃-25℃；环境湿度：45%-75% Ambient temperature: 20℃-25℃, Ambient humidity: 45%-75%			
分包测试情况 Subcontracted test condition		测试项目 Test items	/		
		分包实验室 Subcontracted Laboratory	名称 Name	/	邮编 Post code /
			地址 Address	/	电话 Tel /

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序号 No.	附表 1 Appendix 1	测试项目名称 Name of test	高空模拟 Altitude simulation
标准要求 Requirement of Standard	试验电池或电池组在压力等于或低于 11.6kPa 和环境温度 20±5℃下存放至少 6h。试验电池或电池组应无重量损失、无渗漏、无排气、无解体、无破裂和无燃烧，并且每个试验电池或电池组在试验后的开路电压不少于其在进行这一试验前电压的 90%（完全放电状态的试验电池或电池组除外）。 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℃. Cells and batteries meet this requirement if there is no mass loss, 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. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states.		
样品状态 Sample status	b1#~b4#：第一个循环完全充电的电池； b1#~b4#: first cycle in fully charged states; b5#~b8#：第二十五个循环完全充电的电池。 b5#~b8#: after 25 cycles ending in fully charged states.		

样品编号 Sample No.	测试前 Before		测试后 After		质量损失 Mass loss (%)	剩余电压 Residual OCV(%)	测试结果 Test result
	电池质量 m_1(kg)	开路电压 v_1(v)	电池质量 m_2(kg)	开路电压 v_2(v)			
b1#	10.296	65.3	10.296	65.3	0.00	100.00	O
b2#	10.290	65.3	10.290	65.3	0.00	100.00	O
b3#	10.284	65.3	10.284	65.3	0.00	100.00	O
b4#	10.280	65.4	10.280	65.3	0.00	99.85	O
b5#	10.278	65.3	10.278	65.3	0.00	100.00	O
b6#	10.282	65.3	10.282	65.3	0.00	100.00	O
b7#	10.272	65.3	10.272	65.3	0.00	100.00	O
b8#	10.278	65.3	10.278	65.3	0.00	100.00	O

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。
Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O- No Leakage, No Venting, No Disassembly, No Rupture & No Fire.

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序号 No.	附表 2 Appendix 2	测试项目名称 Name of test	温度循环 Thermal test

标准要求 Requirement of Standard	试验大型电池或电池组在试验温度等于 72±2℃下存放至少 6h，接着在试验温度等于-40±2℃下存放至少 6h。两个极端试验温度之间的最大时间间隔为 30min。重复 10 次，再将所有试验电池或电池组在环境温度 20±5℃下存放 24h。试验电池或电池组应无重量损失、无渗漏、无排气、无解体、无破裂和无燃烧，并且每个试验电池或电池组在试验后的开路电压不少于其在进行这一试验前电压的 90%（完全放电状态的试验电池或电池组除外）。 Test large cells and batteries are to be stored for at least 6 hours at a test temperature equal to 72±2℃, followed by storage for at least 6 hours at a test temperature equal to -40±2℃. 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±5℃). Cells and batteries meet this requirement if there is no mass loss, 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. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states.
样品状态 Sample status	b1#~b4#：第一个循环完全充电的电池； b1#~b4#: first cycle in fully charged states; b5#~b8#：第二十五个循环完全充电的电池。 b5#~b8#: after 25 cycles ending in fully charged states.

样品编号 Sample No.	测试前 Before		测试后 After		质量损失 Mass loss (%)	剩余电压 Residual OCV(%)	测试结果 Test result
	电池质量 m_1(kg)	开路电压 v_1(v)	电池质量 m_2(kg)	开路电压 v_2(v)			
b1#	10.296	65.3	10.294	65.0	0.02	99.54	O
b2#	10.290	65.3	10.288	65.0	0.02	99.54	O
b3#	10.284	65.3	10.282	65.1	0.02	99.69	O
b4#	10.280	65.3	10.278	65.0	0.02	99.54	O
b5#	10.278	65.3	10.276	65.0	0.02	99.54	O
b6#	10.282	65.3	10.280	65.1	0.02	99.69	O
b7#	10.272	65.3	10.270	65.0	0.02	99.54	O
b8#	10.278	65.3	10.276	65.0	0.02	99.54	O

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。
Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O- No Leakage, No Venting, No Disassembly, No Rupture & No Fire.

序号 No.	附表 3 Appendix 3	测试项目名称 Name of test	振动 Vibration

标准要求 Requirement of Standard	将大型电池或电池组直接安装或通过夹具安装在振动台的台面上，用正弦波，从 7Hz 开始，保持 $1g_n$ 的最大加速度，直到 18Hz。然后将振幅保持在 0.8mm（总偏移 1.6mm），并增加频率直到最大加速度达到 $2g_n$（频率约为 25Hz）。将最大加速度保持在 $2g_n$ 直到频率增加到 200Hz。对三个互相垂直的电池或电池组安装方向的每个方向重复进行 12 次，一共振动 3h。试验电池或电池组应无重量损失、无渗漏、无排气、无解体、无破裂和无燃烧，并且每个试验电池或电池组在试验后的开路电压不少于其在进行这一试验前电压的 90%（完全放电状态的试验电池或电池组除外）。 The large 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 from 7Hz to a peak acceleration of $1g_n$ is maintained until 18Hz is reached. The amplitude is then maintained at 0.8mm (1.6mm total excursion) and the frequency increased until a peak acceleration of $2g_n$ occurs (approximately 25Hz). A peak acceleration of $2g_n$ is then maintained until the frequency is increased to 200Hz. 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. Cells and batteries meet this requirement if there is no mass loss, 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. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states.
样品状态 Sample status	b1#~b4#：第一个循环完全充电的电池； b1#~b4#: first cycle in fully charged states; b5#~b8#：第二十五个循环完全充电的电池。 b5#~b8#: after 25 cycles ending in fully charged states.

样品编号 Sample No.	测试前 Before		测试后 After		质量损失 Mass loss (%)	剩余电压 Residual OCV(%)	测试结果 Test result
	电池质量 m_1(kg)	开路电压 v_1(v)	电池质量 m_2(kg)	开路电压 v_2(v)			
b1#	10.294	65.0	10.294	65.0	0.00	100.00	O
b2#	10.288	65.0	10.288	65.0	0.00	100.00	O
b3#	10.282	65.1	10.282	65.0	0.00	99.85	O
b4#	10.278	65.0	10.278	65.0	0.00	100.00	O
b5#	10.276	65.0	10.276	65.0	0.00	100.00	O
b6#	10.280	65.1	10.280	65.1	0.00	100.00	O
b7#	10.270	65.0	10.270	65.0	0.00	100.00	O
b8#	10.276	65.0	10.276	65.0	0.00	100.00	O

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。
Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O- No Leakage, No Venting, No Disassembly, No Rupture & No Fire.

序号 No.	附表 4 Appendix 4	测试项目名称 Name of test	冲击 Shock
标准要求 Requirement of Standard	将电池或电池组用坚硬支架紧固在试验装置上，对于大型电池组，以加速度为 $50g_n$ 或 $g_n=\sqrt{(30000 / mass)}$ 中较小者的正弦波冲击，脉冲持续时间 11ms，按三个相互垂直的轴向分别对其正负极各冲击 3 次，共冲击 18 次。各试验电池或电池组应无重量损失、无渗漏、无排气、无解体、无破裂和无燃烧，并且每个试验电池或电池组在试验后的开路电压不少于其在进行这一试验前电压的 90%（完全放电状态的试验电池或电池组除外）。 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 Large batteries shall be subjected to a half-sine shock of peak acceleration of $50g_n$ or acceleration (g_n) = $\sqrt{(30000 / mass)}$ 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. Cells and batteries meet this requirement if there is no mass loss, 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. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states.(NOTE: Mass is express in kilograms)		
样品状态 Sample status	b1#~b4#：第一个循环完全充电的电池； b1#~b4#: first cycle in fully charged states; b5#~b8#：第二十五个循环完全充电的电池。 b5#~b8#: after 25 cycles ending in fully charged states.		

样品编号 Sample No.	测试前 Before		测试后 After		质量损失 Mass loss (%)	剩余电压 Residual OCV(%)	测试结果 Test result
	电池质量 m_1(kg)	开路电压 v_1(v)	电池质量 m_2(kg)	开路电压 v_2(v)			
b1#	10.294	65.0	10.294	65.0	0.00	100.00	O
b2#	10.288	65.0	10.288	65.0	0.00	100.00	O
b3#	10.282	65.0	10.282	65.0	0.00	100.00	O
b4#	10.278	65.0	10.278	65.0	0.00	100.00	O
b5#	10.276	65.0	10.276	65.0	0.00	100.00	O
b6#	10.280	65.1	10.280	65.0	0.00	99.85	O
b7#	10.270	65.0	10.270	65.0	0.00	100.00	O
b8#	10.276	65.0	10.276	65.0	0.00	100.00	O

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。
Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O- No Leakage, No Venting, No Disassembly, No Rupture & No Fire.

地址：中国广州市珠江新城花城大道66号B座
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序号 No.	附表 5 Appendix 5	测试项目名称 Name of test	外部短路 External short circuit
标准要求 Requirement of Standard	待试验电池或电池组的外壳温度稳定在 57±4℃后，在 57±4℃下使电池或电池组经受总外电阻小于 0.1Ω 的短路条件，当电池或电池组外壳温度回到 57±4℃后继续至少 1h，然后短路断开，再观察电池或电池组 6h 才结束试验。电池或电池组的外壳温度应不超过 170℃，并且试验后 6h 内应无解体、无破裂和无燃烧。 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 hours for the test to be concluded. Cells and batteries meet this requirement if their external temperature does not exceed 170℃ and there is no disassembly, no rupture and no fire within six hours of this test.		
样品状态 Sample status	b1#~b4#：第一个循环完全充电的电池； b1#~b4#: first cycle in fully charged states; b5#~b8#：第二十五个循环完全充电的电池。 b5#~b8#: after 25 cycles ending in fully charged states.		

样品编号 Sample No.	样品表面最高温度 Max External Temperature(℃)	测试结果 Test result	备注 Remark
b1#	57.3	O	/
b2#	56.6	O	/
b3#	56.4	O	/
b4#	56.3	O	/
b5#	56.8	O	/
b6#	56.7	O	/
b7#	57.2	O	/
b8#	57.3	O	/

注： D-解体； R-破裂； F-起火； O-无解体、无破裂、无起火。
Note: D-Disassembly, R-Rupture, F-Fire, O-No Disassembly, No Rupture & No Fire.

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序号 No.	附表 6 Appendix 6	测试项目名称 Name of test	撞击 Impact

标准要求 Requirement of Standard	（撞击（适用与直径不小于 18mm 的圆柱形电池）： 试样电池或元件电池放在平坦光滑的表面上，一根 316 型不锈钢棒横放在试样的中心，钢棒的直径（15.8±0.1）毫米，长度至少 6 厘米，或电池最长端的尺度，取二者之长者，用一块（9.1±0.1）千克的重锤从（61±2.5）厘米高处跌落到钢棒和试样交叉处。使用一个几乎没有摩擦的、对落体重锤阻力最小的垂直轨道或管道加以控制，垂直轨道或管道用于引导落锤沿与水平表面支撑表面呈 90 度落下。 接受撞击的试样，纵轴应于平坦表面平行并与横放在试中心的直径（15.8±0.1）毫米弯曲表面的纵轴垂直，每个试样只经受一次撞击。 试验电池或电池组的组成电芯外部温度不超过 170℃，并且在试验过程中和试验后 6 小时内应无解体、无破裂、无起火。 Impact(applicable to cylindrical cells not less than 18mm in diameter): Test procedure – Impact (applicable to cylindrical cells greater than 20 mm in diameter) 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 center 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 center of the test sample. Each sample is to be subjected to only a single impact. Cells and component cells meet this requirement if their external temperature does not exceed 170 ℃ and there is no disassembly and no fire during the test and within six hours after this test.
样品状态 Sample status	C1#~C5#：第一个循环 50%的额定容量的电芯。 C1#~C5#: first cycle at 50% of the design rated capacity of cell. C6#~C10#：第二十五个循环 50%的额定容量的电芯。 C6#~C10#: after 25 cycles at 50% of the design rated capacity of cell.

样品编号 Sample No.	样品表面最高温度 Max External Temperature(℃)	测试结果 Test result	备注 Remark	样品编号 Sample No.	样品表面最高温度 Max External Temperature(℃)	测试结果 Test result	备注 Remark
C1#	103.7	O	/	C6#	103.3	O	/
C2#	95.3	O	/	C7#	98.5	O	/
C3#	97.5	O	/	C8#	96.2	O	/
C4#	101.5	O	/	C9#	94.8	O	/
C5#	95.7	O	/	C10#	102.4	O	/

注： D-解体； R-破裂； F-起火； O-无解体、无破裂、无起火。
Note: D-Disassembly, R-Rupture, F-Fire, O-No Disassembly, No Rupture & No Fire.

序号 No.	附表 7 Appendix 7	测试项目名称 Name of test	过度充电 Overcharge
标准要求 Requirement of Standard	充电电流必须是制造商建议的最大连续充电电流的两倍，试验的最小电压应为如下： （a）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组最大充电电压的两倍或 22V 两者中的较少者。 （b）制造商建议的充电电压大于 18V 时，试验的最小电压应是最大充电电压的 1.2 倍。 可再充电电池组在环境温度下试验 24h。试样在试验后 7 天内应无解体和无燃烧。 The charge current shall be 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 shall be the lesser of two times the maximum charge voltage of the battery or 22V. (b) 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 shall be 24 hours. Rechargeable batteries meet this requirement if there is no disassembly and no fire within seven days of the test.		
样品状态 Sample status	b1#~b4#：第一个循环完全充电的电池； b1#~b4#: first cycle in fully charged states; b5#~b8#：第二十五个循环完全充电的电池。 b5#~b8#: after 25 cycles ending in fully charged states.		

样品编号 Sample No.	测试结果 Test result	备注 Remark
b1#	O	/
b2#	O	/
b3#	O	/
b4#	O	/
b5#	O	/
b6#	O	/
b7#	O	/
b8#	O	/

注： D-解体； R-破裂； F-起火； O-无解体、无破裂、无起火。
Note: D-Disassembly, R-Rupture, F-Fire, O-No Disassembly, No Rupture & No Fire.

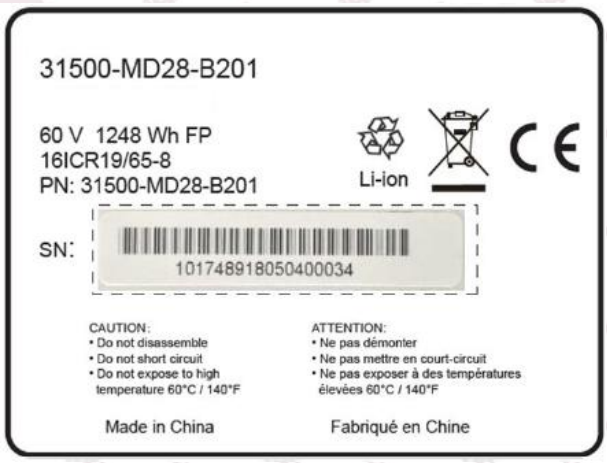
序号 No.	附表 8 Appendix 8	测试项目名称 Name of test	强制放电 Forced discharge
标准要求 Requirement of Standard	试验原电池或可再充电电池在环境温度下与 12V 的直流电源串联，在起始电流等于制造商给定的最大放电电流的条件下强制放电。原电池或可再充电电池在试验后 7 天内应无解体和无燃烧。 Each cell shall be forced discharged at ambient temperature by connecting it in series with a 12V D.C. power supply at an initial current equal to the maximum discharge current specified by the manufacturer. 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). Primary or rechargeable cells meet this requirement if there is no disassembly and no fire within seven days of the test.		
样品状态 Sample status	C11#~C20#：第一个循环完全放电的电芯； C11#~C20#: first cycle in fully discharged states; C21#~C30#：第二十五个循环完全放电的电芯。 C21#~C30#: after 25 cycles in fully discharged states.		

样品编号 Sample No.	测试结果 Test result	备注 Remark	样品编号 Sample No.	测试结果 Test result	备注 Remark
C11#	O	/	C21#	O	/
C12#	O	/	C22#	O	/
C13#	O	/	C23#	O	/
C14#	O	/	C24#	O	/
C15#	O	/	C25#	O	/
C16#	O	/	C26#	O	/
C17#	O	/	C27#	O	/
C18#	O	/	C28#	O	/
C19#	O	/	C29#	O	/
C20#	O	/	C30#	O	/

注： D-解体； R-破裂； F-起火； O-无解体、无破裂、无起火。
Note: D-Disassembly, R-Rupture, F-Fire, O-No Disassembly, No Rupture & No Fire.

样品图片
Photo of the sample

电池与电芯/Battery and Cell



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地址：中国广州市珠江新城花城大道66号B座
Add: Tower B,No.66 Huacheng Avenue, Zhujiang Xincheng,Guangzhou,China
Website:www.iqtc.cn Postcode:510623

注意事项
Important

1.本报告无检验单位公章无效。

The test report is invalid without the official stamp of IQTC.

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 IQTC

3.本报告无批准人、审核人及主检人签名无效。

The test report is invalid without the signatures of Approver, Checker and Appraiser.

4.客户必须如实提供样品及资料，并保证申报品名和样品以及运输货物相同，否则本检测单位不承担任何相关责任。

The client should provide samples and relevant data, at the same time, they should guarantee the consistence of the product's name they declared, the samples they provided and the goods to be transported. Otherwise we will not bear any relevant responsibilities.

5.本报告涂改无效。

The test report is invalid if altered.

6.对检验报告若有异议，应于收到报告之日起十五天内向检验单位提出。

Objection to the test report must be submitted to IQTC within 15 days.

7.本报告仅对送检样品负责。

The test report is valid for the tested samples only.