

检测概要
Test Summary

报告编号 Report No.	T7-20230227- AQLG	报告签发日期 Date of test report	2023年3月24日	样品名称 Sample name	锂离子电芯 Lithium-ion Cell
样品型号 Sample model	446590	样品规格 Specification	3.91V 19.04Wh 4870mAh	质量 (g) mass (g)	61.4
样品外观 Appearance	银色尼龙/铝/聚丙烯复合膜Silver Nylon/Al/PP compound film				
制造商信息 Manufacturer Information	制造商名称 Manufacturer Name	宁德新能源科技有限公司 Ningde Amperex Technology Limited			
	制造商地址 Manufacturer address	中国福建省宁德市蕉城区漳湾镇新港路1号 No.1 XinGang Road, Zhangwan Town, JiaoCheng City, Ningde, Fujian Province, P.R. China			
	电话号码 Telephone Number	+86-(0)593-258 3888	电子邮箱 E-mail	ND-Reception@ATLBattery.com	
	网址 Website	www.atlbattery.com			
实验室信息 Lab Information	实验室名称 Lab Name	宁德新能源科技有限公司中心实验室 Ningde Amperex Technology Limited Central Lab			
	实验室地址 Lab address	中国福建省宁德市蕉城区漳湾镇新港路1号 No.1 Xingang Road, Zhangwan Town, Jiaocheng City, NingDe, Fu Jian Province, China			
	电话号码 Telephone Number	+86-0593-2357677	电子邮箱 E-mail	CL-ND@ATLBattery.com	
	网址 Website	www.atlbattery.com			
序号 No.	测试项目名称 Name of test items	检测结果(合格/不合格) Test result (Pass/Fail)		备注 Remark	
T.1	高度模拟 Altitude simulation	合格 Passed		/	
T.2	温度试验 Thermal test	合格 Passed		/	
T.3	振动 Vibration	合格 Passed		/	
T.4	冲击 Shock	合格 Passed		/	
T.5	外部短路 External short-circuit	合格 Passed		/	
T.6	挤压 Crush	合格 Passed		/	
T.7	过度充电 Overcharge	/		电芯不适用 Not applicable for the cell	
T.8	强制放电 Forced discharge	合格 Passed		/	
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.7, 38.3 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Tests and Criteria ST/SG/AC.10/11 Rev.7, 38.3			宁德新能源科技有限公司中心实 验室 Ningde Amperex Technology Limited Central Lab (签章) (signature) 签发日期: 2023年3月24日	
签名 Signature		Authorized signature: Dequan Xiang 授权签字人: 向德权			



UN38.3检测报告

UN38.3 Test Report

样品名称:	锂离子电芯
Sample Name:	Lithium-ion Cell
样品型号:	446590
Sample Model:	446590
委托单位:	宁德新能源科技有限公司
Consignor:	Ningde Amperex Technology Limited

宁德新能源科技有限公司中心实验室
Ningde Amperex Technology Limited Central Lab

样品名称 Sample name	锂离子电芯 Lithium-ion Cell	测试类别 Test category	委托检测 After testing
样品型号 Sample model	446590	样品接收日期 Accepted date	2023-03-01
样品规格 Sample specification	3.91V 19.04Wh 4870mAh	测试开始日期 Test start date	2023-03-06
样品数量(个) Sample quantity (pcs.)	40	测试结束日期 Test end date	2023-03-19
委托单位信息 Consignor Information	委托单位 Consignor	宁德新能源科技有限公司 Ningde Amperex Technology Limited	
	委托单位地址 Consignor address	中国福建省宁德市蕉城区漳湾镇新港路1号 No.1 XinGang Road, Zhangwan Town, JiaoCheng City, Ningde, Fujian Province, P.R. China	
制造商信息 Manufacturer Information	制造商名称 Manufacturer Name	宁德新能源科技有限公司 Ningde Amperex Technology Limited	
	制造商地址 Manufacturer address	中国福建省宁德市蕉城区漳湾镇新港路1号 No.1 XinGang Road, Zhangwan Town, JiaoCheng City, Ningde, Fujian Province, P.R. China	
	电话号码 Telephone Number	+86-(0)593-258 3888	电子邮箱 E-mail ND- Reception@ATLBattery.com
	网址 Website	www.atlbattery.com	
测试环境条件 Test environment condition	环境温度: 15°C - 25°C; 环境湿度: ≤ 75% RH Ambient temperature: 15°C - 25°C; Ambient humidity: ≤ 75% RH		
样品外观 Appearance	银色尼龙/铝/聚丙烯复合模Silver Nylon/Al/PP compound film		
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.7, 38.3 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Tests and Criteria ST/SG/AC.10/11 Rev.7, 38.3		
测试项目 Test items	高度模拟、温度试验、振动、冲击、外部短路、挤压、强制放电 Altitude simulation, Thermal test, Vibration, Shock, External short circuit, Crush, Forced discharge		
测试结论 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.7,38.3标准的要求 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.7,38.3		
测试人员 Testers	吴俊 陈平		宁德新能源科技有限公司中心 实验室 Ningde Amperex Technology Limited Central Lab (签章) (signature) 签发日期: 2023年3月24日
审核 Checker	俞同强		
批准 Approval	向德权 授权签字人: 向德权 Authorized signature: Dequan Xiang 中心主任: 鲁宇浩 Center Director: Yuhao Lu		

样品描述及说明 Sample description

化学组分 Chemical composition	钴酸锂-石墨
测试用充电程序 Test charge program	按照制造商推荐的充电程序进行 (6000mA CC to 4.35V ,CV to 4000mA ; 4000mA CC to 4.45V ,CV to 243mA)
测试用放电程序 Test discharge program	按照制造商推荐的放电程序进行 (4870mA DC to 3.0V)

测试样品图片 Test sample image

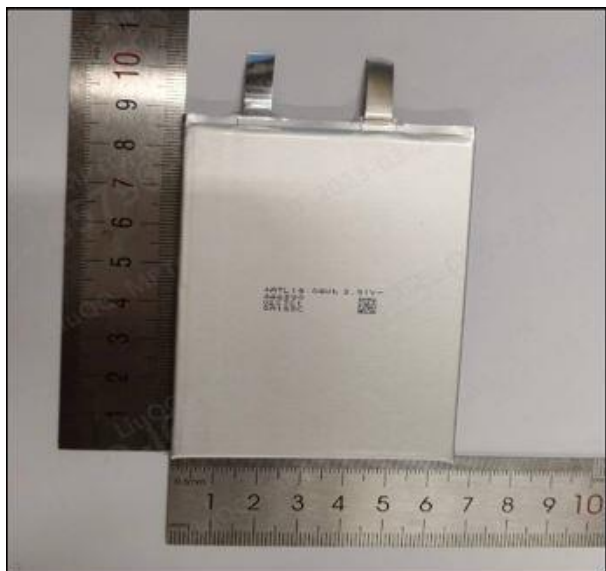


图1: 正面
Figure 1: Front side



图2: 反面
Figure 2: Back side

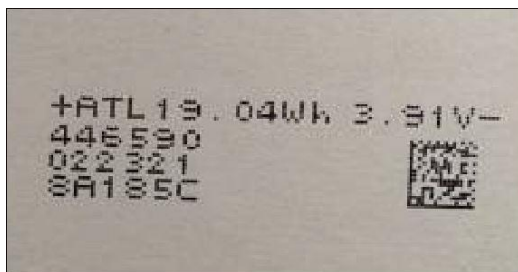


图3: 标识
Figure 3: Logo

序号 No	测试项目名称 Name of test	标准要求或标准号条款 Standard requirement or the clause number of standard	测试现象 Phenomenon	本项结论 Test conclusion	备注 Remarks
T.1	高度模拟 Altitude simulation	联合国《关于危险货物运输的建议书 试验和标准手册》ST/SG/AC.10/11/ Rev.7, 38.3.4.1 UN Manual of Test and Criteria ST/SG/ AC.10/11/Rev.7, 38.3.4.1	见附表1 See Appendix 1	合格 Passed	/
T.2	温度试验 Thermal test	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.7, 38.3.4.2 UN Manual of Test and Criteria ST/SG/ AC.10/11/Rev.7, 38.3.4.2	见附表2 See Appendix 2	合格 Passed	/
T.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》ST/SG/AC.10/11/ Rev.7, 38.3.4.3 UN Manual of Test and Criteria ST/SG/ AC.10/11/Rev.7, 38.3.4.3	见附表3 See Appendix 3	合格 Passed	/
T.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》ST/SG/AC.10/11/ Rev.7, 38.3.4.4 UN Manual of Test and Criteria ST/SG/ AC.10/11/Rev.7, 38.3.4.4	见附表4 See Appendix 4	合格 Passed	/
T.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》ST/SG/AC.10/11/ Rev.7, 38.3.4.5 UN Manual of Test and Criteria ST/ SG/ AC.10/11/Rev.7, 38.3.4.5	见附表5 See Appendix 5	合格 Passed	/
T.6	挤压 Crush	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.7, 38.3.4.6 UN Manual of Test and Criteria ST/ SG/ AC.10/11/Rev.7, 38.3.4.6	见附表6 See Appendix 6	合格 Passed	/
T.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》ST/SG/AC.10/11/ Rev.7, 38.3.4.7 UN Manual of Test and Criteria ST/ SG/ AC.10/11/Rev.7, 38.3.4.7	/	/	电芯不适 用 Not applicable for the cell
T.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》ST/SG/AC.10/11/ Rev.7, 38.3.4.8 UN Manual of Test and Criteria ST/ SG/ AC.10/11/Rev.7, 38.3.4.8	见附表8 See Appendix 8	合格 Passed	/

附表1
Appendix 1

序号 No.	T.1	测试项目名称 Name of test items		高度模拟 Altitude simulation				
		样品质量 Sample mass(g)		质量损失 Mass loss (%)	开路电压 OCV (V)		剩余电压 Residual OCV (%)	测试现象 Phenomenon
		M1 (before test)	M2 (after test)		OCV1 (before test)	OCV2 (after test)		
1cycle fully charged	0223218A06FE	61.6131	61.6101	0.00	4.414	4.406	99.82	O
1cycle fully charged	0223218A0D4F	61.2669	61.2655	0.00	4.413	4.405	99.82	O
1cycle fully charged	0223218A0C48	61.5034	61.5004	0.00	4.413	4.405	99.82	O
1cycle fully charged	0223218A090E	61.4438	61.4427	0.00	4.414	4.407	99.84	O
1cycle fully charged	0223218A1007	61.5359	61.5332	0.00	4.415	4.407	99.82	O
25cycles fully charged	0223218A1137	61.3121	61.3101	0.00	4.418	4.413	99.89	O
25cycles fully charged	0223218A0C4B	61.3654	61.3625	0.00	4.417	4.413	99.91	O
25cycles fully charged	0223218A0416	61.5255	61.5240	0.00	4.418	4.414	99.91	O
25cycles fully charged	0223218A0AD0	61.4577	61.4569	0.00	4.417	4.413	99.91	O
25cycles fully charged	0223218A0E05	61.4085	61.4077	0.00	4.419	4.413	99.86	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.

附表2
Appendix 2

序号 No.	T.2	测试项目名称 Name of test items		温度试验 Thermal test					
		样品信息 Sample information (如Barcode)	样品质量 Sample mass(g)		质量损失 Mass loss (%)	开路电压 OCV (V)		剩余电压 Residual OCV (%)	测试现象 Phenom enon
			M1 (before test)	M2 (after test)		OCV1 (before test)	OCV2 (after test)		
1cycle fully charged	0223218A06FE	61.6101	61.6101	0.00	4.406	4.333	98.34	O	
1cycle fully charged	0223218A0D4F	61.2655	61.2651	0.00	4.405	4.332	98.34	O	
1cycle fully charged	0223218A0C48	61.5004	61.5002	0.00	4.405	4.331	98.32	O	
1cycle fully charged	0223218A090E	61.4427	61.4419	0.00	4.407	4.335	98.37	O	
1cycle fully charged	0223218A1007	61.5332	61.5325	0.00	4.407	4.334	98.34	O	
25cycles fully charged	0223218A1137	61.3101	61.3095	0.00	4.413	4.344	98.44	O	
25cycles fully charged	0223218A0C4B	61.3625	61.3621	0.00	4.413	4.344	98.44	O	
25cycles fully charged	0223218A0416	61.5240	61.5232	0.00	4.414	4.346	98.46	O	
25cycles fully charged	0223218A0AD0	61.4569	61.4562	0.00	4.413	4.344	98.44	O	
25cycles fully charged	0223218A0E05	61.4077	61.4071	0.00	4.413	4.344	98.44	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.

附表3
Appendix 3

序号 No.	T.3	测试项目名称 Name of test items		振动 Vibration					
		样品信息 Sample information (如Barcode)	样品质量 Sample mass(g)		质量损失 Mass loss (%)	开路电压 OCV (V)		剩余电压 Residual OCV (%)	测试现象 Phenom enon
			M1 (before test)	M2 (after test)		OCV1 (before test)	OCV2 (after test)		
1cycle fully charged	0223218A06FE	61.6101	61.6101	0.00	4.333	4.332	99.98	O	
1cycle fully charged	0223218A0D4F	61.2651	61.2650	0.00	4.332	4.331	99.98	O	
1cycle fully charged	0223218A0C48	61.5002	61.5001	0.00	4.331	4.330	99.98	O	
1cycle fully charged	0223218A090E	61.4419	61.4409	0.00	4.335	4.334	99.98	O	
1cycle fully charged	0223218A1007	61.5325	61.5321	0.00	4.334	4.334	100.00	O	
25cycles fully charged	0223218A1137	61.3095	61.3089	0.00	4.344	4.341	99.93	O	
25cycles fully charged	0223218A0C4B	61.3621	61.3613	0.00	4.344	4.341	99.93	O	
25cycles fully charged	0223218A0416	61.5232	61.5223	0.00	4.346	4.341	99.88	O	
25cycles fully charged	0223218A0AD0	61.4562	61.4555	0.00	4.344	4.343	99.98	O	
25cycles fully charged	0223218A0E05	61.4071	61.4062	0.00	4.344	4.343	99.98	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.

附表4
Appendix 4

序号 No.	T.4	测试项目名称 Name of test items		冲击 Shock				
样品组别 Group	样品信息 Sample information (如Barcode)	样品质量 Sample mass(g)		质量损失 Mass loss (%)	开路电压 OCV (V)		剩余电压 Residual OCV (%)	测试现象 Phenom enon
		M1 (before test)	M2 (after test)		OCV1 (before test)	OCV2 (after test)		
1cycle fully charged	0223218A06FE	61.6101	61.6144	-0.01	4.332	4.332	100.00	O
1cycle fully charged	0223218A0D4F	61.2650	61.2704	-0.01	4.331	4.331	100.00	O
1cycle fully charged	0223218A0C48	61.5001	61.5049	-0.01	4.330	4.330	100.00	O
1cycle fully charged	0223218A090E	61.4409	61.4459	-0.01	4.334	4.333	99.98	O
1cycle fully charged	0223218A1007	61.5321	61.5372	-0.01	4.334	4.334	100.00	O
25cycles fully charged	0223218A1137	61.3089	61.3147	-0.01	4.341	4.339	99.95	O
25cycles fully charged	0223218A0C4B	61.3613	61.3666	-0.01	4.341	4.340	99.98	O
25cycles fully charged	0223218A0416	61.5223	61.5285	-0.01	4.341	4.341	100.00	O
25cycles fully charged	0223218A0AD0	61.4555	61.4627	-0.01	4.343	4.342	99.98	O
25cycles fully charged	0223218A0E05	61.4062	61.4135	-0.01	4.343	4.342	99.98	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.

附表5
Appendix 5

序号NO.	T.5	测试项目名称 Name of test items	外部短路 External short circuit		
样品组别 Group	样品信息 Sample information (如Barcode)	样品表面最高温度 Max. External temperature (°C)	测试现象 Phenomenon	备注 Remark	
1 cycle fully charged	0223218A06FE	119.3	O	胀气漏液	
1 cycle fully charged	0223218A0D4F	97.9	O	胀气漏液	
1 cycle fully charged	0223218A0C48	112.4	O	胀气漏液	
1 cycle fully charged	0223218A090E	112.5	O	胀气漏液	
1 cycle fully charged	0223218A1007	128.0	O	胀气漏液	
25cycles fully charged	0223218A1137	127.3	O	胀气漏液	
25cycles fully charged	0223218A0C4B	116.2	O	胀气漏液	
25cycles fully charged	0223218A0416	128.4	O	胀气漏液	
25cycles fully charged	0223218A0AD0	123.5	O	胀气漏液	
25cycles fully charged	0223218A0E05	113.5	O	胀气漏液	

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.

附表6
Appendix 6

序号NO.	T.6	测试项目名称 Name of test items	挤压 Crush		
样品组别 Group		样品信息 Sample information (如Barcode)	样品表面最高温度 Max. External temperature (°C)	测试现象 Phenomenon	备注 Remark
1cycle 50% capacity		0223218A08AE	20.0	O	/
1cycle 50% capacity		0223218A0495	22.6	O	/
1cycle 50% capacity		0223218A112A	22.4	O	/
1cycle 50% capacity		0223218A057F	23.1	O	/
1cycle 50% capacity		0223218A0886	22.7	O	/
25cycles 50% capacity		0223218A0995	22.6	O	/
25cycles 50% capacity		0223218A0D84	23.1	O	/
25cycles 50% capacity		0223218A0E74	24.0	O	/
25cycles 50% capacity		0223218A00E5	22.9	O	/
25cycles 50% capacity		0223218A02CF	21.9	O	/
注: D-解体; F-起火; O-无解体, 无起火。 Note: D-Disassembly, F-Fire, O-No disassembly, no fire.					

附表7
Appendix 7

序号 No.	T.7	测试项目名称 Name of test items	过度充电 Overcharge	
样品组别 Group		样品信息 Sample Information (如Barcode)	测试现象 Phenomenon	备注 Remark
/		/	/	/
注: D-解体; F-起火; O-无解体, 无起火。 Note: D-Disassembly, F-Fire, O-No disassembly, no fire.				

附表8
Appendix 8

序号NO.	T.8	测试项目名称 Name of test items	强制放电 Forced discharge	
样品组别 Group		样品信息 Sample information (如Barcode)	测试现象 Phenomenon	备注 Remark
1cycle fully discharged		0223218A0766	O	/
1cycle fully discharged		0223218A0D41	O	/
1cycle fully discharged		0223218A0BF0	O	/
1cycle fully discharged		0223218A0BC0	O	/
1cycle fully discharged		0223218A093D	O	/
1cycle fully discharged		0223218A0BE9	O	/
1cycle fully discharged		0223218A0B2B	O	/
1cycle fully discharged		0223218A0D38	O	/
1cycle fully discharged		0223218A0BD6	O	/
1cycle fully discharged		0223218A1065	O	/
25cycles fully discharged		0223218A1155	O	/
25cycles fully discharged		0223218A1198	O	/
25cycles fully discharged		0223218A1006	O	/
25cycles fully discharged		0223218A05F8	O	/
25cycles fully discharged		0223218A083A	O	/
25cycles fully discharged		0223218A0F21	O	/
25cycles fully discharged		0223218A0AEF	O	/
25cycles fully discharged		0223218A11A5	O	/
25cycles fully discharged		0223218A0AB4	O	/
25cycles fully discharged		0223218A0BDF	O	/
<p>注: D-解体; F-起火; O-无解体, 无起火。 Note: D-Disassembly, F-Fire, O-No disassembly, no fire.</p>				

声明

Statement

1. 检测报告无本实验室公章无效。

The test report is invalid if not affixed the official seal of the laboratory to it.

2. 检测报告涂改无效。

The test report is invalid if it is blotted out.

3. 送样委托检测结果，仅对所送样品有效。

The conclusion of the consignment test is only valid for the provided sample.

4. 对检测报告若有异议，应于收到报告之日起十五日内向检测单位提出。

Objections to the test report must be submitted to ATL Central Lab within 15 days.

5. 本报告未经本实验室书面许可，不可部分复制。

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