检测概要
Test Summary

报告编号 Report No.	T7-20230717-JWKA	报告签发日期 Date of test report	2023年8月26日	样品名称 Sample name	锂离子电芯 Lithium-ion Cell
样品型号 Sample model	436590	样品规格 Specification	3.91V 19.05Wh 4870mAh	质量（g） mass (g)	60.4
样品外观 Appearance	银色尼龙/铝/聚丙烯复合模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 /Amend 1, 38.3 UNITED NATIONS “Recommendations on the TRANSPORT OF DANGEROUS GOODS” Manual of Tests and Criteria ST/SG/AC.10/11 Rev.7 /Amend 1, 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8月26日
签名 Signature	向德权	Authorized signature:Dequan Xiang 授权签字人：向德权	

Form No.: QF-QSP-ATC-1026-12C

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:	436590
Sample Model:	436590
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	436590		样品接收日期 Accepted date	2023-07-20
样品规格 Sample specification	3.91V 19.05Wh 4870mAh		测试开始日期 Test start date	2023-07-24
样品数量(个) Sample quantity (pcs.)	40		测试结束日期 Test end date	2023-08-18
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℃ - 25℃；环境湿度：≤ 75% RH Ambient temperature: 15℃ - 25℃; 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 /Amend 1, 38.3 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Tests and Criteria ST/SG/AC.10/11 Rev.7 /Amend 1, 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 /Amend 1,38.3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 /Amend 1,38.3			
测试人员 Testers				
审核 Checker				
批准 Approval	授权签字人：向德权 Authorized signature:Dequan Xiang 中心主任:鲁宇浩Center Director:Yuhao Lu			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8月26日

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 4.3V ,CV to 5200mA ；5200mA CC to 4.4V ,CV to 4000mA ； 4000mA CC to 4.5V ,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

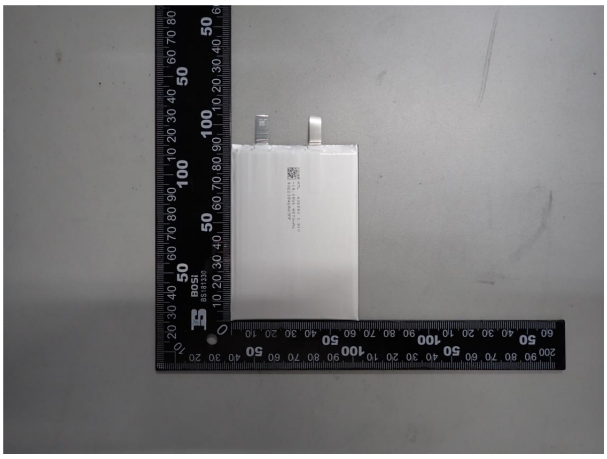


图1：正面
Figure 1: Front side

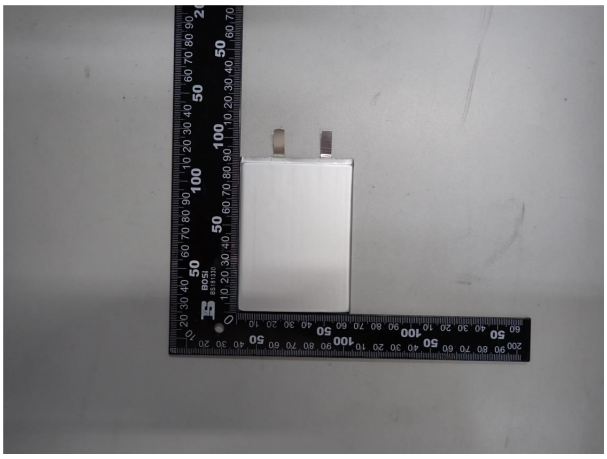


图2：反面
Figure 2: Back side

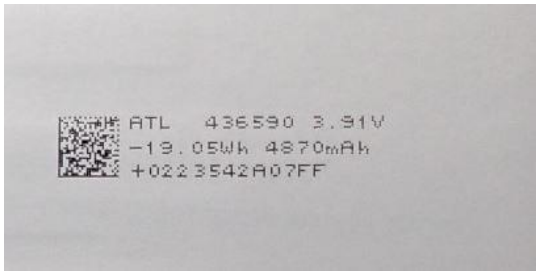


图3：标识
Figure 3: Logo

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 /Amend 1, 38.3.4.1 UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.7 /Amend 1, 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 /Amend 1, 38.3.4.2 UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.7 /Amend 1, 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 /Amend 1, 38.3.4.3 UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.7 /Amend 1, 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 /Amend 1, 38.3.4.4 UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.7 /Amend 1, 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 /Amend 1, 38.3.4.5 UN Manual of Test and Criteria ST/ SG/AC.10/11/Rev.7 /Amend 1, 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 /Amend 1, 38.3.4.6 UN Manual of Test and Criteria ST/ SG/AC.10/11/Rev.7 /Amend 1, 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 /Amend 1, 38.3.4.7 UN Manual of Test and Criteria ST/ SG/AC.10/11/Rev.7 /Amend 1, 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 /Amend 1, 38.3.4.8 UN Manual of Test and Criteria ST/ SG/AC.10/11/Rev.7 /Amend 1, 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 Phenomenon
		M1 (before test)	M2 (after test)		OCV1 (before test)	OCV2 (after test)		
1cycle fully charged	0223542A0BB7	60.2682	60.2678	0.00	4.473	4.466	99.84	O
1cycle fully charged	0223542A0C04	60.3742	60.3740	0.00	4.473	4.466	99.84	O
1cycle fully charged	0223542A15A9	60.3713	60.3712	0.00	4.473	4.466	99.84	O
1cycle fully charged	0223542A0731	60.3628	60.3626	0.00	4.471	4.464	99.84	O
1cycle fully charged	0223542A0829	60.1509	60.1506	0.00	4.473	4.466	99.84	O
25cycles fully charged	0223542A0D92	60.3588	60.3586	0.00	4.466	4.457	99.80	O
25cycles fully charged	0223542A0A7D	60.4699	60.4698	0.00	4.470	4.461	99.80	O
25cycles fully charged	0223542A04BA	60.4397	60.4394	0.00	4.471	4.461	99.78	O
25cycles fully charged	0223542A0D16	60.4581	60.4579	0.00	4.470	4.460	99.78	O
25cycles fully charged	0223542A0490	60.3227	60.3225	0.00	4.471	4.460	99.75	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 Phenomenon
		M1 (before test)	M2 (after test)		OCV1 (before test)	OCV2 (after test)		
1cycle fully charged	0223542A0BB7	60.2678	60.2661	0.00	4.466	4.374	97.94	O
1cycle fully charged	0223542A0C04	60.3740	60.3733	0.00	4.466	4.374	97.94	O
1cycle fully charged	0223542A15A9	60.3712	60.3709	0.00	4.466	4.374	97.94	O
1cycle fully charged	0223542A0731	60.3626	60.3614	0.00	4.464	4.375	98.01	O
1cycle fully charged	0223542A0829	60.1506	60.1502	0.00	4.466	4.376	97.98	O
25cycles fully charged	0223542A0D92	60.3586	60.3575	0.00	4.457	4.363	97.89	O
25cycles fully charged	0223542A0A7D	60.4698	60.4686	0.00	4.461	4.363	97.80	O
25cycles fully charged	0223542A04BA	60.4394	60.4391	0.00	4.461	4.363	97.80	O
25cycles fully charged	0223542A0D16	60.4579	60.4573	0.00	4.460	4.363	97.83	O
25cycles fully charged	0223542A0490	60.3225	60.3221	0.00	4.460	4.361	97.78	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 Phenomenon
		M1 (before test)	M2 (after test)		OCV1 (before test)	OCV2 (after test)		
1cycle fully charged	0223542A0BB7	60.2661	60.2658	0.00	4.374	4.372	99.95	O
1cycle fully charged	0223542A0C04	60.3733	60.3731	0.00	4.374	4.372	99.95	O
1cycle fully charged	0223542A15A9	60.3709	60.3707	0.00	4.374	4.373	99.98	O
1cycle fully charged	0223542A0731	60.3614	60.3609	0.00	4.375	4.373	99.95	O
1cycle fully charged	0223542A0829	60.1502	60.1501	0.00	4.376	4.374	99.95	O
25cycles fully charged	0223542A0D92	60.3575	60.3572	0.00	4.363	4.361	99.95	O
25cycles fully charged	0223542A0A7D	60.4686	60.4682	0.00	4.363	4.361	99.95	O
25cycles fully charged	0223542A04BA	60.4391	60.4389	0.00	4.363	4.361	99.95	O
25cycles fully charged	0223542A0D16	60.4573	60.4568	0.00	4.363	4.361	99.95	O
25cycles fully charged	0223542A0490	60.3221	60.3218	0.00	4.361	4.359	99.95	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 Phenomenon
		M1 (before test)	M2 (after test)		OCV1 (before test)	OCV2 (after test)		
1cycle fully charged	0223542A0BB7	60.2658	60.2629	0.00	4.372	4.372	100.00	O
1cycle fully charged	0223542A0C04	60.3731	60.3694	0.01	4.372	4.372	100.00	O
1cycle fully charged	0223542A15A9	60.3707	60.3690	0.00	4.373	4.372	99.98	O
1cycle fully charged	0223542A0731	60.3609	60.3598	0.00	4.373	4.372	99.98	O
1cycle fully charged	0223542A0829	60.1501	60.1479	0.00	4.374	4.371	99.93	O
25cycles fully charged	0223542A0D92	60.3572	60.3564	0.00	4.361	4.361	100.00	O
25cycles fully charged	0223542A0A7D	60.4682	60.4675	0.00	4.361	4.360	99.98	O
25cycles fully charged	0223542A04BA	60.4389	60.4367	0.00	4.361	4.360	99.98	O
25cycles fully charged	0223542A0D16	60.4568	60.4552	0.00	4.361	4.360	99.98	O
25cycles fully charged	0223542A0490	60.3218	60.3202	0.00	4.359	4.359	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.

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 (℃)	测试现象 Phenomenon	备注 Remark
1cycle fully charged		0223542A0BB7	104.4	O	/
1cycle fully charged		0223542A0C04	101.9	O	/
1cycle fully charged		0223542A15A9	113.0	O	/
1cycle fully charged		0223542A0731	101.3	O	/
1cycle fully charged		0223542A0829	110.1	O	/
25cycles fully charged		0223542A0D92	102.5	O	/
25cycles fully charged		0223542A0A7D	95.8	O	/
25cycles fully charged		0223542A04BA	99.7	O	/
25cycles fully charged		0223542A0D16	99.4	O	/
25cycles fully charged		0223542A0490	107.4	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.

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 (℃)	测试现象 Phenomenon	备注 Remark
1cycle 50% capacity		0223542A09C3	23.1	O	/
1cycle 50% capacity		0223542A10A3	24.5	O	/
1cycle 50% capacity		0223542A00D2	24.4	O	/
1cycle 50% capacity		0223542A07FF	23.8	O	/
1cycle 50% capacity		0223542A12CC	23.7	O	/
25cycles 50% capacity		0223542A0496	24.3	O	/
25cycles 50% capacity		0223542A0DB7	23.2	O	/
25cycles 50% capacity		0223542A0BE0	23.8	O	/
25cycles 50% capacity		0223542A0826	23.1	O	/
25cycles 50% capacity		0223542A09AB	23.7	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		0223542A12D8	O	/
1cycle fully discharged		0223542A034F	O	/
1cycle fully discharged		0223542A0978	O	/
1cycle fully discharged		0223542A1295	O	/
1cycle fully discharged		0223542A0029	O	/
1cycle fully discharged		0223542A17B9	O	/
1cycle fully discharged		0223542A0BB8	O	/
1cycle fully discharged		0223542A12D4	O	/
1cycle fully discharged		0223542A0ADF	O	/
1cycle fully discharged		0223542A0B02	O	/
25cycles fully discharged		0223542A0C82	O	/
25cycles fully discharged		0223542A12BC	O	/
25cycles fully discharged		0223542A0643	O	/
25cycles fully discharged		0223542A0824	O	/
25cycles fully discharged		0223542A0867	O	/
25cycles fully discharged		0223542A07C3	O	/
25cycles fully discharged		0223542A10A4	O	/
25cycles fully discharged		0223542A12DD	O	/
25cycles fully discharged		0223542A0484	O	/
25cycles fully discharged		0223542A0486	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.

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 consignation 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天内向检测单位提出。

   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。

   This report cannot be partial copied, without the written permission of Amperex Technology Limited Central Lab.

宁德新能源科技有限公司中心实验室

Ningde Amperex Technology Limited Central Lab

地址: 中国福建省宁德市蕉城区漳湾镇新港路1号

Addr.: No.1 Xingang Road, Zhangwan Town, Jiaocheng City, NingDe, Fu Jian Province, China

电话 Tel. : +86-0593-2357677

邮箱 E-mail: CL-ND@ATLBattery.com

网址 Website : www.atlbattery.com