

检测概要 Test Summary

报告编号 Report No.	T8-20220221-H446	报告签发日期 Date of test report	2022年4月1日	样品名称 Sample name	二次锂电池组 Rechargeable Li-ion Battery
样品型号 Sample model	361-00160-00	样品规格 Specification	3.87V 2.55Wh 660mAh	质量 (g) mass (g)	9.4
样品外观 Appearance	银色尼龙/铝/聚丙烯复合膜, 包裹黄色高温胶带Silver nylon/Al/PP compound film, bag yellow high temperature tape				
制造商信息 Manufacturer Information	制造商名称 Manufacturer Name	东莞新能源科技有限公司 Dongguan Amperex Technology Limited			
	制造商地址 Manufacturer address	中国广东省东莞市松山湖科技园工业西路1号 West Industrial Road 1#, Songshan Lake Industry Park, Dongguan City, Guangdong Province, P. R. China			
	电话号码 Telephone Number	+86-(0)769-8898 9338	电子邮箱 E-mail	SSL-Reception@ATLBattery.com	
	网址 Website	www.atlbattery.com			
实验室信息 Lab Information	实验室名称 Lab Name	东莞新能源科技有限公司中心实验室 Dongguan Amperex Technology Limited Central Lab			
	实验室地址 Lab address	中国广东省东莞市松山湖科技园工业西路1号 West Industrial Road 1#, Songshan Lake Industry Park, Dongguan City, Guangdong Province, P. R. China			
	电话号码 Telephone Number	+86-0769-88989149	电子邮箱 E-mail	Lab-Service@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	合格 Passed		/	
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.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		东莞新能源科技有限公司中心实验室 Dongguan Amperex Technology Limited Central Lab (签章) (signature) 签发日期: 2022年4月1日		
签名 Signature		李作为: 技术负责人 Li Zuo Wei: Technical Director 郭佳丽: 中心主任Guo Jiali: Center Director			



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检测
TESTING
CNAS L3767

UN38.3检测报告

UN38.3 Test Report

样品名称:	二次锂电池组
Sample Name:	Rechargeable Li-ion Battery
样品型号:	361-00160-00
Sample Model:	361-00160-00
委托单位:	东莞新能源科技有限公司
Consignor:	Dongguan Amperex Technology Limited

东莞新能源科技有限公司中心实验室
Dongguan Amperex Technology Limited Central Lab

样品名称 Sample name	二次锂电池组 Rechargeable Li-ion Battery	测试类别 Test category	委托检测 After testing
样品型号 Sample model	361-00160-00	样品接收日期 Accepted date	2022-02-24
样品规格 Sample specification	3.87V 2.55Wh 660mAh	测试开始日期 Test start date	2022-03-01
样品数量(个) Sample quantity (pcs.)	48	测试结束日期 Test end date	2022-03-11
委托单位信息 Consignor Information	委托单位 Consignor	东莞新能源科技有限公司 Dongguan Amperex Technology Limited	
	委托单位地址 Consignor address	中国广东省东莞市松山湖科技园工业西路1号 West Industrial Road 1#, Songshan Lake Industry Park, Dongguan City, Guangdong Province, P. R. China	
制造商信息 Manufacturer Information	制造商名称 Manufacturer Name	东莞新能源科技有限公司 Dongguan Amperex Technology Limited	
	制造商地址 Manufacturer address	中国广东省东莞市松山湖科技园工业西路1号 West Industrial Road 1#, Songshan Lake Industry Park, Dongguan City, Guangdong Province, P. R. China	
	电话号码 Telephone Number	+86-(0)769-8898 9338	电子邮箱 E-mail SSL- 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/聚丙烯复合膜, 包裹黄色高温胶带 Silver nylon/Al/PP compound film, bag yellow high temperature tape		
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		
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		
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.6/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.6/Amend 1,38.3		
测试人员 Testers	杨登 黄泽邦		 东莞新能源科技有限公司中心 实验室 Dongguan Amperex Technology Limited Central Lab (签章) (signature) 签发日期: 2022年4月1日
审核 Checker	李作为		
批准 Approval	郭佳丽 李作为: 技术负责人 Li Zuo Wei: Technical Director 郭佳丽: 中心主任 Guo Jiali: Center Director		

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 (660mA CC to 4.45V ,CV to 13.2mA)
测试用放电程序 Test discharge program	按照制造商推荐的放电程序进行 (1320mA DC to 3.0V)

测试样品图片 Test sample image



图1：正面
Figure 1: Front side

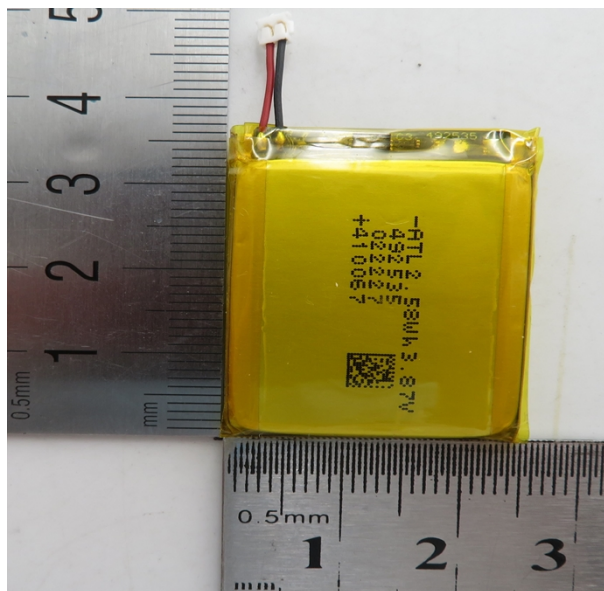


图2：反面
Figure 2: Back side

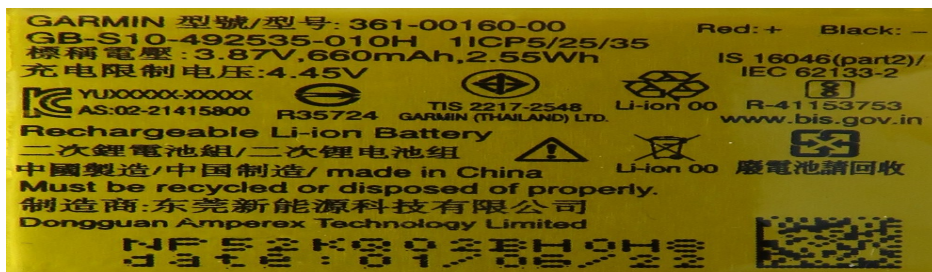


图3：标识
Figure 3: Logo

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.6/Amend 1, 38.3.4.1 UN Manual of Test and Criteria ST/SG/ AC.10/11/Rev.6/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.6/Amend 1, 38.3.4.2 UN Manual of Test and Criteria ST/SG/ AC.10/11/Rev.6/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.6/Amend 1, 38.3.4.3 UN Manual of Test and Criteria ST/SG/ AC.10/11/Rev.6/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.6/Amend 1, 38.3.4.4 UN Manual of Test and Criteria ST/SG/ AC.10/11/Rev.6/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.6/Amend 1, 38.3.4.5 UN Manual of Test and Criteria ST/ SG/ AC.10/11/Rev.6/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.6/Amend 1, 38.3.4.6 UN Manual of Test and Criteria ST/ SG/ AC.10/11/Rev.6/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.6/Amend 1, 38.3.4.7 UN Manual of Test and Criteria ST/ SG/ AC.10/11/Rev.6/Amend 1, 38.3.4.7	见附表7 See Appendix 7	合格 Passed	/
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.6/Amend 1, 38.3.4.8 UN Manual of Test and Criteria ST/ SG/ AC.10/11/Rev.6/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	NQ01KQ04BN5 ZH 361-00160-00	9.4567	9.4588	-0.02	4.438	4.422	99.64	O
1cycle fully charged	NQ01KQ04BLJ M5 361-00160-00	9.3880	9.3905	-0.03	4.438	4.423	99.66	O
1cycle fully charged	NQ01KQ04BN5 ZE 361-00160-00	9.3900	9.3927	-0.03	4.439	4.423	99.64	O
1cycle fully charged	NQ01KQ04BLJ 97 361-00160-00	9.4141	9.4151	-0.01	4.440	4.424	99.64	O
1cycle fully charged	NQ01KQ04BLJ 92 361-00160-00	9.4064	9.4082	-0.02	4.439	4.423	99.64	O
25cycles fully charged	NQ01KQ04BN5 ZD 361-00160-00	9.3471	9.3492	-0.02	4.435	4.428	99.84	O
25cycles fully charged	NQ01KQ04BLJ 3M 361-00160-00	9.3979	9.3996	-0.02	4.436	4.428	99.82	O
25cycles fully charged	NQ01KQ04BLJ 54 361-00160-00	9.4869	9.4887	-0.02	4.435	4.427	99.82	O
25cycles fully charged	NQ01KQ04BN5 ZF 361-00160-00	9.3685	9.3704	-0.02	4.436	4.426	99.77	O
25cycles fully charged	NQ01KQ04BLJ J9 361-00160-00	9.4570	9.4588	-0.02	4.436	4.428	99.82	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
样品组别 Group	样品信息 Sample information (如Barcode)	M1 (before test)	M2 (after test)		OCV1 (before test)	OCV2 (after test)		
1cycle fully charged	NQ01KQ04BN5 ZH 361-00160- 00	9.4588	9.4539	0.05	4.422	4.318	97.65	O
1cycle fully charged	NQ01KQ04BLJ M5 361-00160- 00	9.3905	9.3847	0.06	4.423	4.321	97.69	O
1cycle fully charged	NQ01KQ04BN5 ZE 361-00160- 00	9.3927	9.3864	0.07	4.423	4.320	97.67	O
1cycle fully charged	NQ01KQ04BLJ 97 361-00160-00	9.4151	9.4096	0.06	4.424	4.320	97.65	O
1cycle fully charged	NQ01KQ04BLJ 92 361-00160-00	9.4082	9.4028	0.06	4.423	4.321	97.69	O
25cycles fully charged	NQ01KQ04BN5 ZD 361-00160- 00	9.3492	9.3438	0.06	4.428	4.331	97.81	O
25cycles fully charged	NQ01KQ04BLJ 3M 361-00160- 00	9.3996	9.3946	0.05	4.428	4.330	97.79	O
25cycles fully charged	NQ01KQ04BLJ 54 361-00160-00	9.4887	9.4830	0.06	4.427	4.330	97.81	O
25cycles fully charged	NQ01KQ04BN5 ZF 361-00160- 00	9.3704	9.3655	0.05	4.426	4.328	97.79	O
25cycles fully charged	NQ01KQ04BLJ J9 361-00160-00	9.4588	9.4533	0.06	4.428	4.330	97.79	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 样品信息 Sample information (如Barcode)	测试项目名称 Name of test items		振动 Vibration				
		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	NQ01KQ04BN5 ZH 361-00160- 00	9.4539	9.4539	0.00	4.318	4.318	100.00	O
1cycle fully charged	NQ01KQ04BLJ M5 361-00160- 00	9.3847	9.3855	-0.01	4.321	4.321	100.00	O
1cycle fully charged	NQ01KQ04BN5 ZE 361-00160- 00	9.3864	9.3873	-0.01	4.320	4.320	100.00	O
1cycle fully charged	NQ01KQ04BLJ 97 361-00160-00	9.4096	9.4106	-0.01	4.320	4.320	100.00	O
1cycle fully charged	NQ01KQ04BLJ 92 361-00160-00	9.4028	9.4036	-0.01	4.321	4.321	100.00	O
25cycles fully charged	NQ01KQ04BN5 ZD 361-00160- 00	9.3438	9.3443	-0.01	4.331	4.331	100.00	O
25cycles fully charged	NQ01KQ04BLJ 3M 361-00160- 00	9.3946	9.3948	0.00	4.330	4.330	100.00	O
25cycles fully charged	NQ01KQ04BLJ 54 361-00160-00	9.4830	9.4831	0.00	4.330	4.330	100.00	O
25cycles fully charged	NQ01KQ04BN5 ZF 361-00160- 00	9.3655	9.3657	0.00	4.328	4.327	99.98	O
25cycles fully charged	NQ01KQ04BLJ J9 361-00160-00	9.4533	9.4539	-0.01	4.330	4.330	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	NQ01KQ04BN5 ZH 361-00160- 00	9.4539	9.4542	0.00	4.318	4.318	100.00	O
1cycle fully charged	NQ01KQ04BLJ M5 361-00160- 00	9.3855	9.3854	0.00	4.321	4.321	100.00	O
1cycle fully charged	NQ01KQ04BN5 ZE 361-00160- 00	9.3873	9.3870	0.00	4.320	4.319	99.98	O
1cycle fully charged	NQ01KQ04BLJ 97 361-00160-00	9.4106	9.4105	0.00	4.320	4.320	100.00	O
1cycle fully charged	NQ01KQ04BLJ 92 361-00160-00	9.4036	9.4033	0.00	4.321	4.321	100.00	O
25cycles fully charged	NQ01KQ04BN5 ZD 361-00160- 00	9.3443	9.3440	0.00	4.331	4.331	100.00	O
25cycles fully charged	NQ01KQ04BLJ 3M 361-00160- 00	9.3948	9.3948	0.00	4.330	4.330	100.00	O
25cycles fully charged	NQ01KQ04BLJ 54 361-00160-00	9.4831	9.4833	0.00	4.330	4.330	100.00	O
25cycles fully charged	NQ01KQ04BN5 ZF 361-00160- 00	9.3657	9.3653	0.00	4.327	4.327	100.00	O
25cycles fully charged	NQ01KQ04BLJ J9 361-00160-00	9.4539	9.4540	0.00	4.330	4.330	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 (°C)	测试现象 Phenomenon	备注 Remark
1 cycle fully charged		NQ01KQ04BN5ZH 361-00160-00	56.0	O	/
1 cycle fully charged		NQ01KQ04BLJM5 361-00160-00	56.0	O	/
1 cycle fully charged		NQ01KQ04BN5ZE 361-00160-00	54.5	O	/
1 cycle fully charged		NQ01KQ04BLJ97 361-00160-00	56.2	O	/
1 cycle fully charged		NQ01KQ04BLJ92 361-00160-00	55.7	O	/
25cycles fully charged		NQ01KQ04BN5ZD 361-00160-00	57.0	O	/
25cycles fully charged		NQ01KQ04BLJ3M 361-00160-00	57.1	O	/
25cycles fully charged		NQ01KQ04BLJ54 361-00160-00	55.2	O	/
25cycles fully charged		NQ01KQ04BN5ZF 361-00160-00	57.4	O	/
25cycles fully charged		NQ01KQ04BLJJ9 361-00160-00	55.9	O	/
<p>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.</p>					

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		0221CA110070	19.7	O	/
1cycle 50% capacity		0221CA110095	19.6	O	/
1cycle 50% capacity		0221CA130013	19.7	O	/
1cycle 50% capacity		0221CA130005	19.5	O	/
1cycle 50% capacity		0221CA110304	19.5	O	/
25cycles 50% capacity		0221CA140452	20.1	O	/
25cycles 50% capacity		0221CA140163	20.0	O	/
25cycles 50% capacity		0221CA110224	19.7	O	/
25cycles 50% capacity		0221CA110093	19.5	O	/
25cycles 50% capacity		0221CA120134	19.4	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>					

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
1cycle fully charged		NQ01KQ04BLJ94 361-00160-00	O	/
1cycle fully charged		NQ01KQ04BLJ24 361-00160-00	O	/
1cycle fully charged		NQ01KQ04BLJ9A 361-00160-00	O	/
1cycle fully charged		NQ01KQ04BLJLR 361-00160-00	O	/
25cycles fully charged		NQ01KQ04BLJ0R 361-00160-00	O	/
25cycles fully charged		NQ01KQ04BLJ95 361-00160-00	O	/
25cycles fully charged		NQ01KQ04BLJDB 361-00160-00	O	/
25cycles fully charged		NQ01KQ04BLJKR 361-00160-00	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	0221CA120101	O	/
		1cycle fully discharged	0221CA140070	O	/
		1cycle fully discharged	0221CA110127	O	/
		1cycle fully discharged	0221CA110208	O	/
		1cycle fully discharged	0221CA110098	O	/
		1cycle fully discharged	0221CA140197	O	/
		1cycle fully discharged	0221CA120052	O	/
		1cycle fully discharged	0221CA110032	O	/
		1cycle fully discharged	0221CA130017	O	/
		1cycle fully discharged	0221CA150056	O	/
		25cycles fully discharged	0221CA110209	O	/
		25cycles fully discharged	0221CA120197	O	/
		25cycles fully discharged	0221CA110114	O	/
		25cycles fully discharged	0221CA110211	O	/
		25cycles fully discharged	0221CA140302	O	/
		25cycles fully discharged	0221CA110262	O	/
		25cycles fully discharged	0221CA110253	O	/
		25cycles fully discharged	0221CA140317	O	/
		25cycles fully discharged	0221CA120075	O	/
		25cycles fully discharged	0221CA120166	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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