



UN38.3 试验概要

UN38.3 Test Summary



812300500272277

单位信息 Company information			
委托单位 Consignor	宁波蓝琦电子科技有限公司 Ningbo Lanqi Electronic Technology CO.,LTD. 宁波市江东区百丈东路 648 弄 6 号(9-17) 6 Lane 648, Baizhang East Road, Jiangdong District, Ningbo (9-17) 13105748071 carrol@lanqibattery.com www.lanqibattery.com		
生产单位 Manufacturer	宁波蓝琦电子科技有限公司 Ningbo Lanqi Electronic Technology CO.,LTD. 宁波市江东区百丈东路 648 弄 6 号(9-17) 6 Lane 648, Baizhang East Road, Jiangdong District, Ningbo (9-17) 13105748071 carrol@lanqibattery.com www.lanqibattery.com		
测试单位 Test lab	上海化工院检测有限公司 Shanghai Institute of Chemical Industry Testing Co., Ltd. 中国.上海.普陀区云岭东路 345 号, 200062 No.345 East Yunling Road, Putuo, Shanghai, China 200062 86-21-31765555 battery@ghs.cn www.ghs.cn		
电池信息 Battery information			
名称 Name	锂离子电池 Li-ion battery	品牌 Brand	/
型号 Type	18500(1S1P)	原始测试型号 Original tested type	/
标称电压(V) Nominal voltage	3.7	容量/能量 Capacity/energy	1500mAh 5.55Wh
描述 Description	可充电锂离子单电芯电池 Rechargeable Li-ion single cell battery	锂含量(g) Li content	/
质量(kg) Mass	0.0370	外观 Appearance	蓝色圆柱型塑料薄膜外壳 blue cylinder plastics film shell
测试信息 Test information			
原报告编号 Original test report No.	1123100113	测试报告日期 Date of test report	2023-11-13
测试标准 Test standard	联合国《试验和标准手册》第 38.3 章 UNITED NATIONS Manual of Tests and Criteria 38.3 ST/SG/AC.10/11/Rev.7&Am end.1		
T.1 高度模拟 Altitude simulation	合格 Passed	T.2 温度测试 Thermal test	合格 Passed
T.3 振动测试 Vibration	合格 Passed	T.4 冲击测试 Shock	合格 Passed
T.5 外部短路 External short circuit	合格 Passed	T.6 撞击 Impact	合格 Passed
T.7 过度充电 Overcharge	合格 Passed	T.8 强制放电 Forced discharge	合格 Passed
38.3.3 (f)	/	38.3.3 (g)	/



声 明

Statement

1. 试验概要无本实验室公章（或检验检测专用章）无效。

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

2. 试验概要复印件无效。

Copies of the test summary are invalid.

3. 试验概要无签字及签字者姓名和职务无效。

The test summary is invalid without the signature, name and title of the signatory.

4. 试验概要涂改无效。

The test summary is invalid if it is blotted out.

5. 未经本实验室书面批准，不得部分复制试验概要。

It is forbidden to copy the test summary partially without the written approval of the laboratory.

6. 试验概要中描述的检测结果，仅对所测样品有效。

The conclusion of the test summary is only valid for the tested sample.

7. 试验概要以中文为准，英文文本（如有）仅为译文，两者发生冲突时，应以中文文本为准。

The test summary has been drafted in Chinese and translated into English (if exist) for convenience only. In the event of discrepancy, the Chinese version shall prevail.

地址：上海市云岭东路 345 号 Address: No. 345 East Yunling Road, Shanghai

邮政编码(PostCode): 200062

电话(Tel): (021) 31765555 传真(Fax): (021) 31015117

网址(website): www.ghs.cn

电子信箱(E-mail): battery@ghs.cn



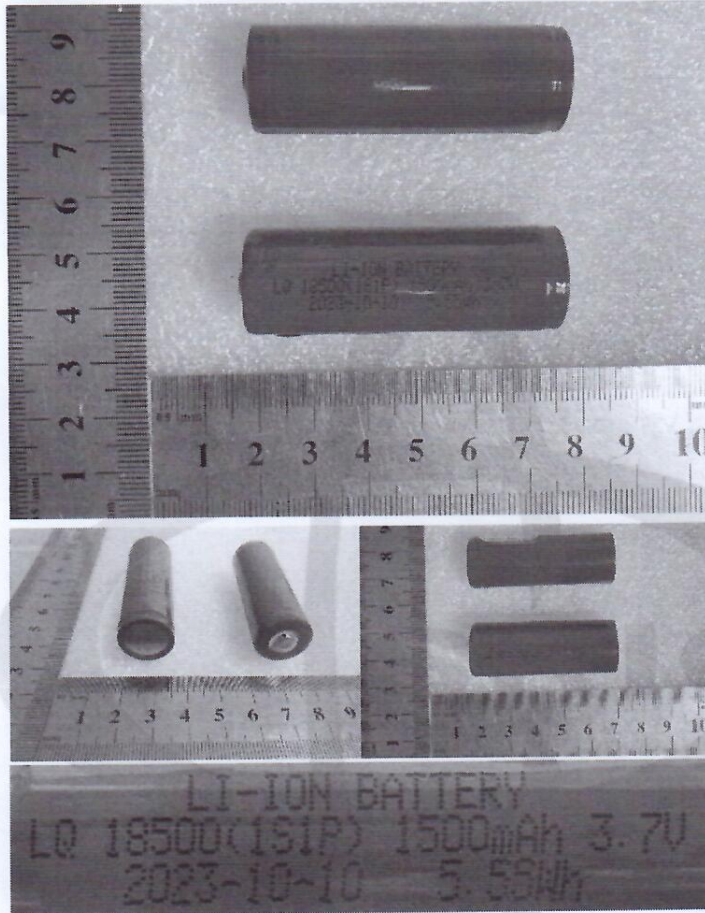
UN38.3 试验概要

UN38.3 Test Summary



812300500272277

样品图片 Sample Picture



<p>结论 Conclusion</p>	<p>测试样品符合联合国《试验和标准手册》ST/SG/AC.10/11/Rev.7&Amend.138.3 标准要求。The tested samples meet the requirements of test items of the UNITED NATIONS Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7&Amend.1 38.3</p>	
<p>备注 Remark</p>	<p>/</p>	
<p>签名 Signature 职务 Title</p>	<p>王寅 王寅 副总工程师 Vice chief engineer</p>	<p>签发日期 Issued date 2023-11-20 上海化工院检测有限公司 检验检测专用章 (11)</p>

-验证码:482297-

报告结束



NO.1123100113

检测报告

Test Report

样品名称： 锂离子电池 18500(1S1P) 3.7V 1500mAh 5.55Wh

Name of Sample: Li-ion battery 18500(1S1P) 3.7V 1500mAh 5.55Wh

委托单位： 宁波蓝琦电子科技有限公司

Consignor: Ningbo Lanqi Electronic Technology CO.,LTD.



上海化工院检测有限公司

Shanghai Institute of Chemical Industry Testing Co., Ltd.

上海化工院检测有限公司

检测报告

Shanghai Institute of Chemical Industry
Testing Co., Ltd. Test Report

NO. 1123100113

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样品名称 Name of Sample	中文 Chinese	锂离子电池 18500(1S1P) 3.7V 1500mAh 5.55Wh		
	英文 English	Li-ion battery 18500(1S1P) 3.7V 1500mAh 5.55Wh		
样品编号 Sample No.	1123100113			
委托单位 Consignor	宁波蓝琦电子科技有限公司 Ningbo Lanqi Electronic Technology CO., LTD.			
生产单位 Manufacturer	宁波蓝琦电子科技有限公司 Ningbo Lanqi Electronic Technology CO., LTD.			
检测方法 Test method	联合国《试验和标准手册》 ST/SG/AC.10/11/Rev.7&Amend.1 38.3 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7&Amend.1 Section 38.3			
判定标准 Criterion	联合国《试验和标准手册》 ST/SG/AC.10/11/Rev.7&Amend.1 38.3 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7&Amend.1 Section 38.3			
样品外观 Appearance	蓝色 圆柱型塑料薄膜外壳 Blue Cylinder plastics film shell			
样品接受日期 Accepted Date	2023-10-11	检测起迄日期 Test Date	2023-10-16 ~ 2023-11-10	
检测项目 Test Items	高度模拟;热测试;振动;冲击;外短路;撞击;过充电;强制放电 Altitude simulation, Thermal test, Vibration, Shock, External short circuit, Impact, Overcharge, Forced discharge			
检测结论 Conclusion	经检测, 该样品符合联合国《试验和标准手册》ST/SG/AC.10/11/Rev.7&Amend.1 38.3标准要求。 The sample has passed the test items of UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7&Amend.1 Section 38.3 生效日期(Date): 2023-11-13			
备注 Comment	可充电单电芯电池Rechargeable Single Cell Battery. / 检验检测专用章 (14)			
委托单位地址 Consignor Address	/		邮政编码 Post Code	315010

批准
Approver:
职务
Title:

任金

审核
Checker:

陆建峰

编制
Compiler:

傅佳

电化学测试部部长 (Head of Electrochemical Testing Department)



上海化工院检测有限公司 检测报告

Shanghai Institute of Chemical Industry
Testing Co., Ltd. Test Report

NO. 1123100113

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序号 No.	检测项目名称 Name of Test Items	标准要求或标准条款号 Standard requirement or The Clause Number of Standard	检测结果 Test Result	本项结论 Conclusion	备注 Remark	
1	高度模拟 Altitude simulation	联合国《试验和标准手册》ST/SG/AC.10/11/Rev.7&Amend.1 38.3 试验T.1 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7&Amend.1 Section 38.3 Test T.1	见附表 1 See Appendix 1	合格 Passed	/	
2	热测试 Thermal test	联合国《试验和标准手册》ST/SG/AC.10/11/Rev.7&Amend.1 38.3 试验T.2 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7&Amend.1 Section 38.3 Test T.2	见附表 2 See Appendix 2	合格 Passed	/	
3	振动 Vibration	联合国《试验和标准手册》ST/SG/AC.10/11/Rev.7&Amend.1 38.3 试验T.3 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7&Amend.1 Section 38.3 Test T.3	见附表 3 See Appendix 3	合格 Passed	/	
4	冲击 Shock	联合国《试验和标准手册》ST/SG/AC.10/11/Rev.7&Amend.1 38.3 试验T.4 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7&Amend.1 Section 38.3 Test T.4	见附表 4 See Appendix 4	合格 Passed	/	
5	外短路 External short circuit	联合国《试验和标准手册》ST/SG/AC.10/11/Rev.7&Amend.1 38.3 试验T.5 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7&Amend.1 Section 38.3 Test T.5	见附表 5 See Appendix 5	合格 Passed	/	
6	撞击 Impact	联合国《试验和标准手册》ST/SG/AC.10/11/Rev.7&Amend.1 38.3 试验T.6 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7&Amend.1 Section 38.3 Test T.6	见附表 6 See Appendix 6	合格 Passed	/	
7	过充电 Overcharge	联合国《试验和标准手册》ST/SG/AC.10/11/Rev.7&Amend.1 38.3 试验T.7 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7&Amend.1 Section 38.3 Test T.7	见附表 7 See Appendix 7	合格 Passed	/	
8	强制放电 Forced discharge	联合国《试验和标准手册》ST/SG/AC.10/11/Rev.7&Amend.1 38.3 试验T.8 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7&Amend.1 Section 38.3 Test T.8	见附表 8 See Appendix 8	合格 Passed	/	
检测环境条件 Test Environment Condition		环境温度:21℃-22℃;环境湿度:/% Ambient temperature:21℃-22℃;Ambient humidity:/%				
分包检验情况 Subcontracted Test Condition		检测项目 Test Item	/			
		分包实验室 Subcontracted Laboratory	名称 Name	/	邮编 Post Code	/
		地址 Address	/	电话 Tel	/	

上海化工院检测有限公司
检测报告-附表1

Shanghai Institute of Chemical Industry
Testing Co., Ltd. Test Report—Appendix 1

NO. 1123100113

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序号 No.	1	检测项目名称 Name of Test Items		高度模拟 Altitude simulation				
样品 编号 Sample No.	样品状态 Sample Status	试验前 Before		试验后 After		质量损失 Mass Loss /%	剩余电压 Residual OCV /%	其他 现象 Other Event
		质量 Mass /g	开路电压 OCV /V	质量 Mass /g	开路电压 OCV /V			
001	1CYC完全充电 1CYC Fully charged	36.5698	4.18	36.5628	4.18	0.02	100.00	O
002	1CYC完全充电 1CYC Fully charged	36.3391	4.17	36.3321	4.17	0.02	100.00	O
003	1CYC完全充电 1CYC Fully charged	36.9765	4.18	36.9747	4.18	0.00	100.00	O
004	1CYC完全充电 1CYC Fully charged	36.6889	4.18	36.6872	4.18	0.00	100.00	O
005	1CYC完全充电 1CYC Fully charged	36.5132	4.20	36.5129	4.20	0.00	100.00	O
006	25CYC完全充电 25CYC Fully charged	36.7133	4.18	36.7090	4.18	0.01	100.00	O
007	25CYC完全充电 25CYC Fully charged	36.8896	4.18	36.8877	4.18	0.01	100.00	O
008	25CYC完全充电 25CYC Fully charged	36.6401	4.17	36.6386	4.17	0.00	100.00	O
009	25CYC完全充电 25CYC Fully charged	36.6726	4.18	36.6719	4.18	0.00	100.00	O
010	25CYC完全充电 25CYC Fully charged	36.6642	4.17	36.6578	4.17	0.02	100.00	O
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备注: L-泄漏 V-漏气 D-解体 R-破裂 F-起火 O-无泄漏、无漏气、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.

上海化工院检测有限公司

检测报告-附表2

Shanghai Institute of Chemical Industry
Testing Co., Ltd. Test Report—Appendix 2

NO. 1123100113

序号 No.	2	检测项目名称 Name of Test Items		热测试 Thermal test				
		样品状态 Sample Status		试验前 Before		试验后 After		质量损失 Mass Loss /%
样品 编号 Sample No.		质量 Mass /g	开路电压 OCV /V	质量 Mass /g	开路电压 OCV /V			
001	1CYC完全充电 1CYC Fully charged	36.5628	4.18	36.5662	4.12	0.00	98.56	0
002	1CYC完全充电 1CYC Fully charged	36.3321	4.17	36.3363	4.10	0.00	98.32	0
003	1CYC完全充电 1CYC Fully charged	36.9747	4.18	36.9734	4.11	0.00	98.33	0
004	1CYC完全充电 1CYC Fully charged	36.6872	4.18	36.6862	4.11	0.00	98.33	0
005	1CYC完全充电 1CYC Fully charged	36.5129	4.20	36.5101	4.13	0.01	98.33	0
006	25CYC完全充电 25CYC Fully charged	36.7090	4.18	36.7098	4.11	0.00	98.33	0
007	25CYC完全充电 25CYC Fully charged	36.8877	4.18	36.8866	4.10	0.00	98.09	0
008	25CYC完全充电 25CYC Fully charged	36.6386	4.17	36.6375	4.10	0.00	98.32	0
009	25CYC完全充电 25CYC Fully charged	36.6719	4.18	36.6705	4.11	0.00	98.33	0
010	25CYC完全充电 25CYC Fully charged	36.6578	4.17	36.6608	4.10	0.00	98.32	0
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备注：L-泄漏 V-漏气 D-解体 R-破裂 F-起火 0-无泄漏、无漏气、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.

上海化工院检测有限公司
检测报告 - 附表3

Shanghai Institute of Chemical Industry
Testing Co., Ltd. Test Report — Appendix 3

NO. 1123100113

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序号 No.	3	检测项目名称 Name of Test Items		振动 Vibration				
样品 编号 Sample No.	样品状态 Sample Status	试验前 Before		试验后 After		质量损失 Mass Loss /%	剩余电压 Residual OCV /%	其他 现象 Other Event
		质量 Mass /g	开路电压 OCV /V	质量 Mass /g	开路电压 OCV /V			
001	1CYC完全充电 1CYC Fully charged	36.5662	4.12	36.5641	4.12	0.01	100.00	0
002	1CYC完全充电 1CYC Fully charged	36.3363	4.10	36.3342	4.10	0.01	100.00	0
003	1CYC完全充电 1CYC Fully charged	36.9734	4.11	36.9724	4.10	0.00	99.76	0
004	1CYC完全充电 1CYC Fully charged	36.6862	4.11	36.6848	4.11	0.00	100.00	0
005	1CYC完全充电 1CYC Fully charged	36.5101	4.13	36.5040	4.13	0.02	100.00	0
006	25CYC完全充电 25CYC Fully charged	36.7098	4.11	36.7091	4.11	0.00	100.00	0
007	25CYC完全充电 25CYC Fully charged	36.8866	4.10	36.8860	4.10	0.00	100.00	0
008	25CYC完全充电 25CYC Fully charged	36.6375	4.10	36.6303	4.10	0.02	100.00	0
009	25CYC完全充电 25CYC Fully charged	36.6705	4.11	36.6684	4.10	0.01	99.76	0
010	25CYC完全充电 25CYC Fully charged	36.6608	4.10	36.6589	4.10	0.01	100.00	0
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备注: L-泄漏 V-漏气 D-解体 R-破裂 F-起火 0-无泄漏、无漏气、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.

上海化工院检测有限公司

检测报告-附表4

Shanghai Institute of Chemical Industry
Testing Co., Ltd. Test Report—Appendix 4

NO. 1123100113

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序号 No.	4	检测项目名称 Name of Test Items	冲击 Shock					
样品 编号 Sample No.	样品状态 Sample Status	试验前 Before		试验后 After		质量损失 Mass Loss /%	剩余电压 Residual OCV /%	其他 现象 Other Event
		质量 Mass /g	开路电压 OCV /V	质量 Mass /g	开路电压 OCV /V			
001	1CYC完全充电 1CYC Fully charged	36.5641	4.12	36.5637	4.12	0.00	100.00	O
002	1CYC完全充电 1CYC Fully charged	36.3342	4.10	36.3341	4.10	0.00	100.00	O
003	1CYC完全充电 1CYC Fully charged	36.9724	4.10	36.9717	4.10	0.00	100.00	O
004	1CYC完全充电 1CYC Fully charged	36.6848	4.11	36.6814	4.11	0.01	100.00	O
005	1CYC完全充电 1CYC Fully charged	36.5040	4.13	36.5024	4.13	0.00	100.00	O
006	25CYC完全充电 25CYC Fully charged	36.7091	4.11	36.7085	4.11	0.00	100.00	O
007	25CYC完全充电 25CYC Fully charged	36.8860	4.10	36.8840	4.10	0.01	100.00	O
008	25CYC完全充电 25CYC Fully charged	36.6303	4.10	36.6273	4.10	0.01	100.00	O
009	25CYC完全充电 25CYC Fully charged	36.6684	4.10	36.6684	4.10	0.00	100.00	O
010	25CYC完全充电 25CYC Fully charged	36.6589	4.10	36.6564	4.10	0.01	100.00	O
以下空白	This space intentionally left blank							

备注：L-泄漏 V-漏气 D-解体 R-破裂 F-起火 O-无泄漏、无漏气、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.

上海化工院检测有限公司
 检测报告-附表5
 Shanghai Institute of Chemical Industry
 Testing Co., Ltd. Test Report— Appendix 5

NO. 1123100113

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序号 No.	5	检测项目名称 Name of Test Items	外短路 External short circuit
样品编号 Sample No.	样品状态 Sample Status	样品表面最高温度 Max. External Temperature /℃	其他现象 Other Event
001	1CYC完全充电 1CYC Fully charged	57.3	0
002	1CYC完全充电 1CYC Fully charged	56.9	0
003	1CYC完全充电 1CYC Fully charged	57.5	0
004	1CYC完全充电 1CYC Fully charged	57.0	0
005	1CYC完全充电 1CYC Fully charged	56.2	0
006	25CYC完全充电 25CYC Fully charged	56.9	0
007	25CYC完全充电 25CYC Fully charged	57.8	0
008	25CYC完全充电 25CYC Fully charged	57.3	0
009	25CYC完全充电 25CYC Fully charged	57.3	0
010	25CYC完全充电 25CYC Fully charged	57.7	0
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备注: D-解体 R-破裂 F-起火 0-无解体、无起火、无破裂。
 Note: D-Disassembly R-Ruptur F-Fire O-No Disassembly, No Fire & No Rupture.

上海化工院检测有限公司
 检测报告-附表6
 Shanghai Institute of Chemical Industry
 Testing Co., Ltd. Test Report—Appendix 6

NO. 1123100113

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序号 No.	6	检测项目名称 Name of Test Items	撞击 Impact
样品编号 Sample No.	样品状态 Sample Status	样品表面最高温度 Max. External Temperature /°C	其他现象 Other Event
011	1CYC 50%容量 1CYC 50% Capacity	107.5	O
012	1CYC 50%容量 1CYC 50% Capacity	104.9	O
013	1CYC 50%容量 1CYC 50% Capacity	91.9	O
014	1CYC 50%容量 1CYC 50% Capacity	110.0	O
015	1CYC 50%容量 1CYC 50% Capacity	99.9	O
016	25CYC 50%容量 25CYC 50% Capacity	102.3	O
017	25CYC 50%容量 25CYC 50% Capacity	100.7	O
018	25CYC 50%容量 25CYC 50% Capacity	93.6	O
019	25CYC 50%容量 25CYC 50% Capacity	106.4	O
020	25CYC 50%容量 25CYC 50% Capacity	94.3	O
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备注: D-解体 F-起火 O-无解体、无起火。 Note: D-Disassembly F-Fire O-No Disassembly & No Fire.			

**上海化工院检测有限公司
检测报告-附表7**

Shanghai Institute of Chemical Industry
Testing Co., Ltd. Test Report - Appendix 7

NO. 1123100113

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序号 No.	7	检测项目名称 Name of Test Items	过充电 Overcharge
样品编号 Sample No.	样品状态 Sample Status		其他现象 Other Event
021	1CYC完全充电 1CYC Fully charged		O
022	1CYC完全充电 1CYC Fully charged		O
023	1CYC完全充电 1CYC Fully charged		O
024	1CYC完全充电 1CYC Fully charged		O
025	25CYC完全充电 25CYC Fully charged		O
026	25CYC完全充电 25CYC Fully charged		O
027	25CYC完全充电 25CYC Fully charged		O
028	25CYC完全充电 25CYC Fully charged		O
以下空白	This space intentionally left blank		

备注：D-解体 F-起火 O-无解体、无起火。
Note: D-Disassembly F-Fire O-No Disassembly & No Fire.

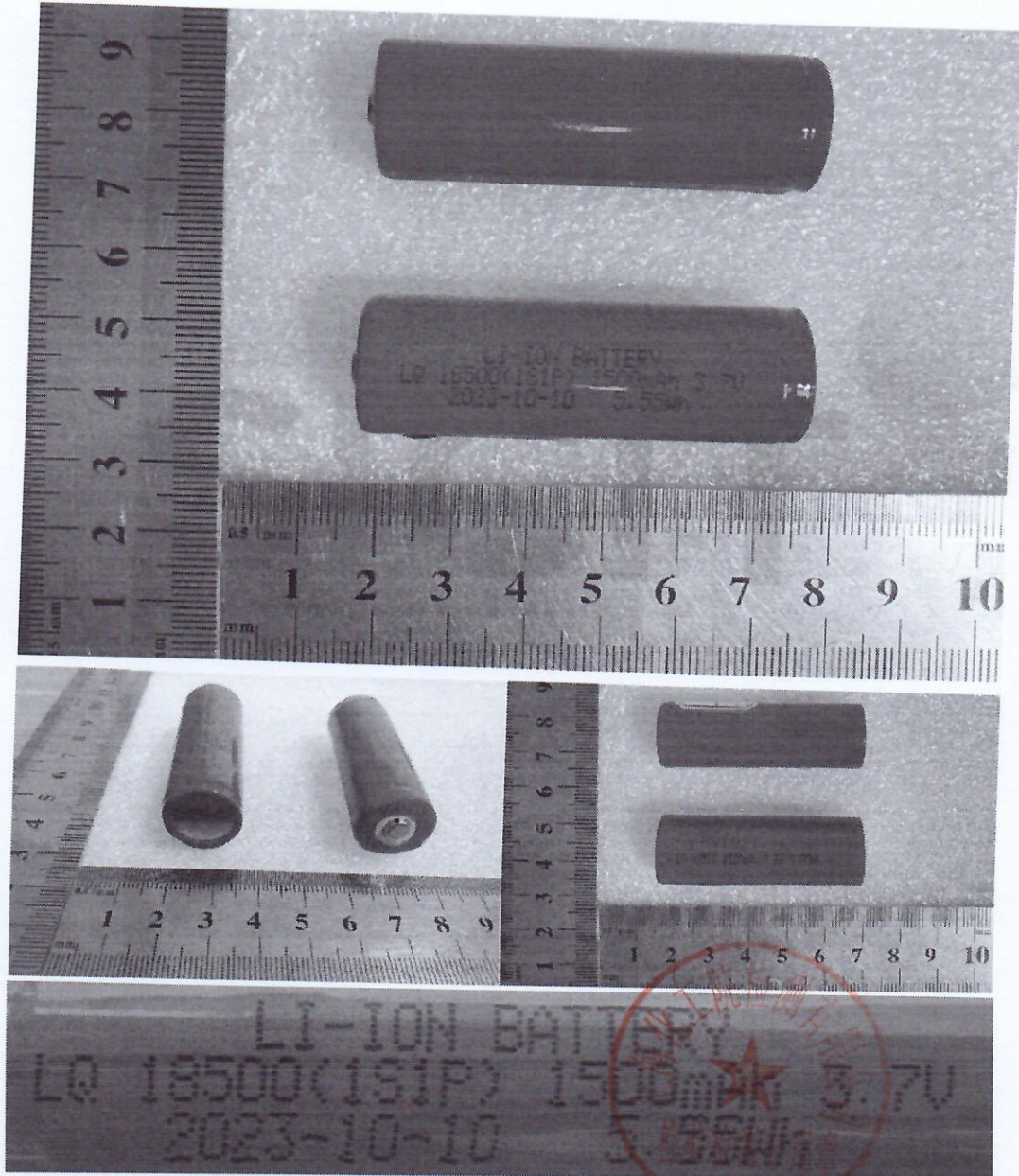
上海化工院检测有限公司
检测报告-附表8
Shanghai Institute of Chemical Industry
Testing Co., Ltd. Test Report — Appendix 8

NO. 1123100113

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序号 No.	8	检测项目名称 Name of Test Items	强制放电 Forced discharge
样品编号 Sample No.	样品状态 Sample Status	其他现象 Other Event	
029	1CYC完全放电 1CYC Fully discharged		0
030	1CYC完全放电 1CYC Fully discharged		0
031	1CYC完全放电 1CYC Fully discharged		0
032	1CYC完全放电 1CYC Fully discharged		0
033	1CYC完全放电 1CYC Fully discharged		0
034	1CYC完全放电 1CYC Fully discharged		0
035	1CYC完全放电 1CYC Fully discharged		0
036	1CYC完全放电 1CYC Fully discharged		0
037	1CYC完全放电 1CYC Fully discharged		0
038	1CYC完全放电 1CYC Fully discharged		0
039	25CYC完全放电 25CYC Fully discharged		0
040	25CYC完全放电 25CYC Fully discharged		0
041	25CYC完全放电 25CYC Fully discharged		0
042	25CYC完全放电 25CYC Fully discharged		0
043	25CYC完全放电 25CYC Fully discharged		0
044	25CYC完全放电 25CYC Fully discharged		0
045	25CYC完全放电 25CYC Fully discharged		0
046	25CYC完全放电 25CYC Fully discharged		0
047	25CYC完全放电 25CYC Fully discharged		0
048	25CYC完全放电 25CYC Fully discharged		0

备注: D-解体 F-起火 0-无解体、无起火。
Note: D-Disassembly F-Fire O-No Disassembly & No Fire.



报告结束

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MSDS-560th File No:LQ230101 2023-01-01

Material Safety Data-Sheet

化学品安全技术说明书

Section 1 - Chemical Product and Company Identification

第一部分 化学品及企业标识

Product Name: Li-ion Battery

产品名称: 锂离子电池

Model/Type: ICR18500 1500mAh 3.7V 5.55Wh

型号/类型: ICR18500 1500mAh 3.7V 5.55Wh

Manufacturer: Ningbo Lanqi Electronic Technology CO.,LTD.

生产企业名称: 宁波蓝琦电子科技有限公司

Address: building 1, No. 6, Yunlin East Road, Gulin Town, Haishu District, Ningbo City, Zhejiang Province

地址: 浙江省宁波市海曙区古林镇云林东路6号1号楼

Post Code: 315012

邮编: 315012

Tel: 0574-87200933

电话: 0574-87200933

Emergency Telephone: 0574-87200933

应急电话: 0574-87200933

Fax: 0574-87970702

传真: 0574-87970702

E-mail: carrol@lanqibattery.com

邮箱: carrol@lanqibattery.com

SECTION 2 HAZARDS IDENTIFICATION

第二部分 危险性概述

Hazards Identification 危害识别:

Lithium batteries itself are classified to Class 9 Dangerous Goods, Miscellaneous dangerous substances and articles.

锂电池本身被归类在第九类危险品——杂项危险物质和物品。

The sealed intact battery is not hazardous in normal use.

密封完好的电池在正常使用下不存在危险性。

Emergency Overview 应急概况:

Caution: Avoid contact and inhalation the electrolyte contained inside the battery.

注意: 避免接触和吸入蓄电池内的电解液。

SECTION 3 INFORMATION ON INGREDIENTS

第三部分 成分/组成信息

Chemical Composition 化学名称	Chemical Formula 分子式	CAS No: CAS 号:	Weight(%) 百分含量 (%)
Nickel cobalt manganese 三元(镍钴锰)	LiNi _x Co _y Mn _{1-x-y} O ₂	182442-95-1	47
Graphite 石墨	C	7782-42-5	20.2
Organic Electrolyte 有机电解液	碳酸乙烯酯(EC)	C ₃ H ₄ O ₃	96-49-1
	碳酸甲乙酯 (EMC)	C ₄ H ₈ O ₃	623-53-0
	碳酸二乙酯 (DEC)	C ₅ H ₁₀ O ₃	105-58-8
	碳酸丙烯酯(PC)	C ₄ H ₆ O ₃	108-32-7
	六氟磷酸锂 (LiPF ₆)	F ₆ LiP	21324-40-3
Polypropylene 聚丙烯	C ₃ H ₆	9003-07-0	1.2
Copper 铜	Cu	7440-50-8	7.7
Aluminum 铝	Al	7429-90-5	4.6
Nickel 镍	Ni	7440-02-0	6.8

SECTION 4 FIRST-AID MEASURES

第四部分 急救措施

Skin Exposure: If the internal battery materials of an opened battery cell come into contact with the skin, immediately flush with plenty of water.
皮肤接触: 若接触到电池内的物质, 立即用肥皂和大量清水彻底清洗皮肤。

Eye Exposure: In case of the internal battery materials in contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.
眼睛接触: 若接触到电池内的物质, 立即提起眼睑, 用流动清水冲洗 15 分钟以上。

Inhalation Exposure: If inhaled the internal materials of battery, remove immediately to fresh air and seek medical attention.
吸入: 若吸入电池内的物质, 立即脱离现场至空气新鲜处。

Oral Exposure: If swallowed the internal materials of battery, do not induce vomiting. Seek immediate Medical attention.
食入: 若食入电池内的物质, 不宜催吐, 立即就医。

SECTION 5 FIRE FIGHTING MEASURES

第五部分 消防措施

Extinguishing Media:

Suitable: Dry chemical, Sandy soil, Carbon dioxide or appropriate foam.
灭火方法及灭火剂: 可用干粉、砂土、泡沫和二氧化碳灭火。

Firefighting:

Protective Equipment: wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific hazards: Emit toxic fumes under fire conditions.

灭火注意事项及措施: 消防员应戴自给正压式呼吸器, 穿消防防护服以防止皮肤和眼睛的接触。

SECTION 6 ACCIDENTAL RELEASE MEASURES

第六部分 泄露应急处理

Procedure of Personal Precaution:

If batteries show signs of leaking, avoid skin or eye contact with the material leaking

from the battery. Use chemical resistant rubber gloves and non-flammable absorbent materials for clean up. Mix with inert material(e.g. Dry sand, vermiculite) and transfer to sealed container for disposal.

应急处理：若电池内的物质泄露，用洁净铲子收集于干燥、洁净、有盖的容器中待处置。处理人员应穿合适的防护服。

SECTION 7 HANDLING AND STORAGE

第七部分 操作处置与储存

Handling: Keep away from ignition sources, heat and flame. Such batteries must be packed in inner packages in such a manner as to effectively prevent short circuits and to prevent movement which could lead to short circuits. Avoid mechanical or electrical abuse. More than a momentary short circuit will generally reduce the battery service life. Avoid reversing battery polarity within the battery assembly. In case of a battery unintentionally be crushed, rubber gloves must be used to handle all battery components. Avoid contact with eyes, skin. Avoid inhalation. No smoking at working site. Materials to Avoid: Strong oxidizing agents, Corrosives.

操作处置注意事项：操作人员应经过培训，严格遵守操作规程。建议操作人员穿一般作业防护服，带安全手套。远离火种、热源，避免阳光直射。工作场所严禁吸烟。工作场所应有通风系统和设备。避免随意拆卸电池和弄错正负极。须牢记在内包装中，以有效防止短路和防止可导致短路的移动。万一电池内的物质泄露，避免眼睛、皮肤直接接触，避免吸入。应与强氧化剂、腐蚀品分开存放。

Storage: Store in a cool, well-ventilated area. Keep away from ignition sources, heat and flame. Such batteries must be packed in inner packages in such a manner as to effectively prevent short circuits and to prevent movement which could to short circuits. Materials to Avoid: Strong oxidizing agents, Corrosives.

储存注意事项：储存于阴凉、通风的库房内。远离火种、热源，避免阳光直射。应与强氧化剂、腐蚀品分开存放。储存区配备相应品种和数量的消防器材、泄露应急处理设备和合适的收容材料。

SECTION 8 EXPOSURE CONTROL/PPE

第八部分 接触控制/个体防护

Engineering Control 工程控制:

Keep away from heat and open flame. Supply with sufficient partial air exhaust. Store in a cool, dry place. 远离热源和明火。提供足够的局部排气。存放在阴凉干燥的地方。

Respiratory Protection 呼吸保护:

Not necessary under conditions of normal use. Wear self-contained breathing filtermask if the

density exceed in the air. Wear breathing apparatus under the condition of emergency rescue or evacuation.

在正常使用条件下不需要。如果环境内气体密度超过空气中的密度，请佩戴自给式呼吸过滤器。在紧急救援或疏散的情况下，佩戴呼吸器。

Eyes Protection 眼睛保护:

Not necessary under conditions of normal use. Wear protective glasses if handling a leaking or ruptured battery. 在正常使用条件下不需要。如果处理泄漏或破裂的电池，请戴上防护眼镜。

Skin and Body Protection 皮肤和身体保护:

Not necessary under conditions of normal use. Wear fireproofing, gas defense clothes in case of handling a leaking or ruptured battery.

在正常使用条件下不需要。在处理泄漏或破裂的电池时，穿上防火防毒服。

Hands Protection 手部保护:

Not necessary under conditions of normal use. Wear chemical resistant rubber glove. 在正常使用条件下不需要。耐磨耐化学腐蚀橡胶手套。

Other Protections 其他保护:

No smoking, dining and drinking water in the workplace. Keep good habit of hygiene. 工作场所禁止吸烟、就餐和饮水。保持良好的卫生习惯。

SECTION 9 PHYSICAL/CHEMICAL PROPERTIES

第九部分 理化特征

Appearance:	cylindrical battery
外观与性状:	圆柱形电池
Odor:	Odorless
气味:	无臭
Melting Point/°C:	>300°C
熔点:	>300°C
Solubility:	Partial soluble in water
溶解性:	部分溶于水

SECTION 10 STABILITY AND REACTIVITY

第十部分 稳定性与反应活性

Stability:

Stable under normal temperatures and pressures.

Conditions to Avoid:

Avoid exposure to heat and open flame. Avoid mechanical or electrical abuse. Prevent short circuits. Prevent movement which could lead to short circuits.

Materials to Avoid:

Strong oxidizing agents, Corrosives.

Hazardous Polymerization:

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Will not occur.

Hazardous Decomposition Products:

Metal oxides, CO, CO2.

稳定性:	常温常压下稳定
避免接触的物质:	强氧化剂、腐蚀品。
避免接触的条件:	误操作, 高温, 防止短路和防止可导致短路的移动。
聚合危害:	不聚合。
有害分解产物:	金属氧化物、CO/CO2 等。

SECTION 11 TOXICOLOGICAL INFOPMATION

第十一部分 毒理学资料

Toxicity Data:

Not available.

Irritation Data:

The internal battery mater ials may cause irritatin to eyes and skin.

急性毒性:	无资料
刺激性:	其中的电解质对眼睛、皮肤有刺激性。

SECTION12 ECOLOGICAL INFORMATION

第十二部分 生态学资料

No data available.

生态毒性:	无资料
生物降解性:	无资料
非生物降解性:	无资料

SECTION 13 DISPOSAL CONSIDERATION

第十三部分 废气处理

Appropriate Method of Disposal of Substance:

Lithium batteries are best disposed of as a non-hazardous waste when fully or mostly discharged. Contact a licensed professional waste disposal service to dispose of large quantities materials.

废弃处置方法: 废弃电池的处置应符合《中华人民共和国固体废物污染环境防治

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法》，《废电池污染防治技术政策》等有关法律、法规、政策和标准的要求。

SECTION 14 TRANSPORT INFORMATION

第十四部分 运输信息

运输标签: 锂电池标记, 第 9 类锂电池危险品标签, 仅限货机标签

Label for conveyance: Lithium Battery Mark, class 9 lithium battery hazard label, Cargo Aircraft Only Label.

UN 编号: UN3480

UN Number: UN3480

包装级别: 不适用

Packaging Group: N/A

Ems 编号: F-A, S-I

Ems No: F-A, S-I

海洋污染物: 无

Marine pollutant: No

正确的装运名称: 锂离子电子电池 (包括锂离子聚合物电池)

Proper Shipping name: Lithium ion batteries (Including lithium ion polymer batteries)

危险分类: 货物符合 IATA 第 64 版《危险品规则》包装说明 965 第 IB 节规定 (2023 年版), 《国际海运危险货物规则》特殊规 188 海运危险货物规则, 包括通过 UN38.3 测试手册要求。

Hazard Classification: The goods are complied with the requirements of Section IB of Packing instruction 965 of 64th DGR Manual of IATA (2023 Edition), special provision 188 of IMDG CODE (, including the passing of the UN38.3 test.

OR:

或者:

运输标签: 锂电池操作标记

Label for conveyance: Lithium Battery Mark

UN Number: UN3481

包装级别: 不适用

Packaging Group: N/A

Ems 编号: F-A, S-I

Ems No: F-A, S-I

海洋污染物: 无

Marine pollutant: No

正确的装运名称: 安装在设备中的锂离子电子电池 (包括锂离子聚合物电池) / 与设备包装在一起的锂离子电子电池 (包括锂离子聚合物电池)

Proper Shipping name: Lithium ion batteries contained in equipment (Including lithium ion polymer batteries) / Lithium ion batteries

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packed with equipment (Including lithium ion polymer batteries)

危险分类：货物符合 IATA 第 64 版《危险品规则》包装说明 966/967 第 II 节规定（2023 年版），《国际海运危险货物规则》特殊规 188 海运危险货物规则，包括通过 UN38.3 测试手册要求。

Hazard Classification: The goods are complied with the requirements of Section II of Packing instruction 966/967 of 64th DGR Manual of IATA(2023Edition), special provision 188 of IMDG CODE, including the passing of the UN38.3 test.

SECTION 15 REGULATORY INFORMATION

第十五部分 法规信息

ICAO:

1. Unless be exempted according to ICAO TI, the lithium ion cell/batteries (UN3840, PI 965) and lithium metal Cell/batteries (UN3090, PI 968) are forbidden for carriage on passenger aircraft.
2. Unless be approved according to ICAO TI, Lithium ion cells/batteries (UN3480, PI 965) must be offered for transport at a state of charge (SoC) not exceeding 30% of their rated design capacity.
3. A shipper is not permitted to offer for transport more than one (1) package prepared according to section II of PI 965 and PI 968 may be placed into an overpack.
4. Packages prepared according to Section II of PI 965 and PI 968 must be offered to the operator separately from other cargo and must not be loaded into a unit load device (ULD) before being offered to the operator.

国内法规:

本品运输时在 GB12268-2012《危险货物名称表》中的编号为：3480/3481。

该型号锂电池通过联合国《关于危险货物运输的建议书 试验和标准手册》

UN38.3 试验，根据《危险货物名称表》中的特殊规定，不作为危险货物运输。

本品在《铁路危险货物名称表》(2009 版)中的铁危编号为：91013/91014。

ICAO:

1. 除非依据《技术细则》的相关要求取得豁免，单独包装的锂离子电池（芯）（UN3480, PI 965）和锂金属电池（芯）（UN 3090, PI 968）货物禁止使用客机运输。
2. 除非依据《技术细则》的相关要求取得特别批准，按照包装说明 965 要求运输的锂离子电池（芯）货物，交运时锂离子电池（芯）的荷电状态不得超过其额定容量的 30%。
3. 在任何一票货物中，按照包装说明 968 第 II 节或 968 第 II 节要求运输的锂电池货物包装件不得超过一个。每个集合包装中所装的按照包装说明 965 第 II 节或 968 第 II 节要求运输的锂电池货物包装件不得超过一个。
4. 按照包装说明 965 或 968 第 II 节要求运输的锂电池货物包装件或集合包装必须与其他货物分开交运，且在交运前不得装入集装箱。

SECTION 16 OTHER INFORMATION

第十六部分 其他信息

The above information is based on the data of which we are aware and is believed to be correct as of the data hereof. Since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data made available subsequent to the data hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that person receiving it shall made his own determination of the suitability of the material for his particular purpose.

上述信息是基于现有的数据信息，在实际应用过程中可能出现其他未预料的情况，其相应信息可能需要修改，我方不承担相应责任。在操作中请根据实际情况做出相应的正确的处置。

DISCLAIMER:

免责声明:

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