UN38.3 测试报告

UN38.3 Test Report

样 品 名 称：	16340 可充电锂离子电池 RCR123A 3.7V, 800mAh, 2.96Wh
Sample name：	Protected 16340 800mAh Battery RCR123A 3.7V, 800mAh, 2.96Wh
委 托 单 位：	深圳领跑能源科技有限公司
Consignor：	KEEPPOWER TECHNOLOGY CO., LIMITED

深圳信特斯检测技术有限公司

Shenzhen SEM Test Technology Co., Ltd.

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样品名称 Sample name	中文 Chinese	16340 可充电锂离子电池 RCR123A 3.7V, 800mAh, 2.96Wh			
	英文 English	Protected 16340 800mAh Battery RCR123A 3.7V, 800mAh, 2.96Wh			
样品编号 Sample No.	01~48				
委托单位 Consignor	深圳领跑能源科技有限公司 KEEPPOWER TECHNOLOGY CO., LIMITED				
生产单位 Manufacturer	深圳领跑能源科技有限公司 KEEPPOWER TECHNOLOGY CO., LIMITED				
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 实验和标准手册》 ST/SG/AC.10/11/Rev.6/Amendment.1, 38.3 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amendment.1, 38.3				
样品外观 Appearance	黑色圆柱形电池，尺寸 Φ 16.4*34.3mm Black Cylindrical battery, size Φ16.4*34.3mm				
样品接收日期 Accepted date	2020-03-23	测试起讫日期 Test date	2020-03-23 ~ 2020-04-01		
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 实验和标准手册》ST/SG/AC.10/11/Rev.6/Amendment.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/Amendment.1, 38.3 签发日期(Issue date): 2020-04-03				
备注 Comments	/				
编制 Compiler:	李国强	审核 Checker:	杨开毅	批准 Approver:	[illegible]

序号 No.	测试项目名称 Name of test	标准要求或标准条款号 Standard requirement or the clause number of standard	测试结果 Test result	本项结论 Test conclusion	备注 Remarks
1	高度模拟 Altitude simulation	联合国《关于危险货物运输的建议书 实验和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amendment.1, 38.3 试验 T.1 Test T.1	见附表 1 See Appendix 1	合格 Passed	/
2	温度试验 Thermal test	联合国《关于危险货物运输的建议书 实验和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amendment.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 实验和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amendment.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 实验和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amendment.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 实验和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amendment.1, 38.3 试验 T.5 Test T.5	见附表 5 See Appendix 5	合格 Passed	/
6	挤压 Crush	联合国《关于危险货物运输的建议书 实验和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amendment.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 实验和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amendment.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 实验和标准手册》UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amendment.1, 38.3 试验 T.8 Test T.8	见附表 8 See Appendix 8	合格 Passed	/

测试环境条件 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	/

附 表 1
Appendix 1

序号 No.	1	测试项目名称 Name of Test Items		高度模拟 Altitude simulation				
样品编号 Sample No.	样品状态 Sample status	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 (g)	开路电压 V_1 (V)	电池质量 m_2 (g)	开路电压 V_2 (V)			
01	首次循环,完全充电 1st CYC, Fully Charged	17.887	4.200	17.882	4.200	0.028	100.00	O
02	首次循环,完全充电 1st CYC, Fully Charged	17.911	4.200	17.908	4.200	0.017	100.00	O
03	首次循环,完全充电 1st CYC, Fully Charged	17.903	4.200	17.899	4.200	0.022	100.00	O
04	首次循环,完全充电 1st CYC, Fully Charged	17.905	4.200	17.903	4.200	0.011	100.00	O
05	首次循环,完全充电 1st CYC, Fully Charged	17.781	4.200	17.779	4.200	0.011	100.00	O
06	第 25 个循环,完全充电 25th CYC, Fully Charged	17.872	4.200	17.869	4.200	0.017	100.00	O
07	第 25 个循环,完全充电 25th CYC, Fully Charged	17.904	4.200	17.903	4.200	0.006	100.00	O
08	第 25 个循环,完全充电 25th CYC, Fully Charged	17.992	4.200	17.991	4.200	0.006	100.00	O
09	第 25 个循环,完全充电 25th CYC, Fully Charged	17.866	4.200	17.863	4.200	0.017	100.00	O
10	第 25 个循环,完全充电 25th CYC, Fully Charged	17.892	4.200	17.890	4.200	0.011	100.00	O
以下空白								

注: L-泄露; V-排气; D-解体; R-破裂; F-起火; O-无泄露、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.	2	测试项目名称 Name of Test Items		温度试验 Thermal test				
样品编号 Sample No.	样品状态 Sample status	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 (g)	开路电压 V_1 (V)	电池质量 m_2 (g)	开路电压 V_2 (V)			
01	首次循环,完全充电 1st CYC, Fully Charged	17.882	4.200	17.874	4.104	0.045	97.71	O
02	首次循环,完全充电 1st CYC, Fully Charged	17.908	4.200	17.902	4.105	0.034	97.74	O
03	首次循环,完全充电 1st CYC, Fully Charged	17.899	4.200	17.893	4.106	0.034	97.76	O
04	首次循环,完全充电 1st CYC, Fully Charged	17.903	4.200	17.899	4.108	0.022	97.81	O
05	首次循环,完全充电 1st CYC, Fully Charged	17.779	4.200	17.771	4.108	0.045	97.81	O
06	第 25 个循环,完全充电 25th CYC, Fully Charged	17.869	4.200	17.860	4.108	0.050	97.81	O
07	第 25 个循环,完全充电 25th CYC, Fully Charged	17.903	4.200	17.896	4.110	0.039	97.86	O
08	第 25 个循环,完全充电 25th CYC, Fully Charged	17.991	4.200	17.980	4.107	0.061	97.79	O
09	第 25 个循环,完全充电 25th CYC, Fully Charged	17.863	4.200	17.856	4.103	0.039	97.69	O
10	第 25 个循环,完全充电 25th CYC, Fully Charged	17.890	4.200	17.882	4.105	0.045	97.74	O
以下空白								

注: L-泄露; V-排气; D-解体; R-破裂; F-起火; O-无泄露、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.	3	测试项目名称 Name of Test Items		振动 Vibration				
样品编号 Sample No.	样品状态 Sample status	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 (g)	开路电压 V_1 (V)	电池质量 m_2 (g)	开路电压 V_2 (V)			
01	首次循环,完全充电 1st CYC, Fully Charged	17.874	4.104	17.873	4.102	0.006	99.95	O
02	首次循环,完全充电 1st CYC, Fully Charged	17.902	4.105	17.902	4.104	0.000	99.98	O
03	首次循环,完全充电 1st CYC, Fully Charged	17.893	4.106	17.891	4.104	0.011	99.95	O
04	首次循环,完全充电 1st CYC, Fully Charged	17.899	4.108	17.899	4.108	0.000	100.00	O
05	首次循环,完全充电 1st CYC, Fully Charged	17.771	4.108	17.771	4.108	0.000	100.00	O
06	第 25 个循环,完全充电 25th CYC, Fully Charged	17.860	4.108	17.858	4.108	0.011	100.00	O
07	第 25 个循环,完全充电 25th CYC, Fully Charged	17.896	4.110	17.896	4.108	0.000	99.95	O
08	第 25 个循环,完全充电 25th CYC, Fully Charged	17.980	4.107	17.980	4.103	0.000	99.90	O
09	第 25 个循环,完全充电 25th CYC, Fully Charged	17.856	4.103	17.855	4.103	0.006	100.00	O
10	第 25 个循环,完全充电 25th CYC, Fully Charged	17.882	4.105	17.881	4.104	0.006	99.98	O
以下空白								

注: L-泄露; V-排气; D-解体; R-破裂; F-起火; O-无泄露、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.	4	测试项目名称 Name of Test Items		冲击 Shock				
样品编号 Sample No.	样品状态 Sample status	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 (g)	开路电压 V_1 (V)	电池质量 m_2 (g)	开路电压 V_2 (V)			
01	首次循环,完全充电 1st CYC, Fully Charged	17.873	4.102	17.873	4.102	0.000	100.00	O
02	首次循环,完全充电 1st CYC, Fully Charged	17.902	4.104	17.901	4.103	0.006	99.98	O
03	首次循环,完全充电 1st CYC, Fully Charged	17.891	4.104	17.890	4.104	0.006	100.00	O
04	首次循环,完全充电 1st CYC, Fully Charged	17.899	4.108	17.898	4.108	0.006	100.00	O
05	首次循环,完全充电 1st CYC, Fully Charged	17.771	4.108	17.771	4.107	0.000	99.98	O
06	第 25 个循环,完全充电 25th CYC, Fully Charged	17.858	4.108	17.858	4.108	0.000	100.00	O
07	第 25 个循环,完全充电 25th CYC, Fully Charged	17.896	4.108	17.895	4.107	0.006	99.98	O
08	第 25 个循环,完全充电 25th CYC, Fully Charged	17.980	4.103	17.979	4.103	0.006	100.00	O
09	第 25 个循环,完全充电 25th CYC, Fully Charged	17.855	4.103	17.855	4.102	0.000	99.98	O
10	第 25 个循环,完全充电 25th CYC, Fully Charged	17.881	4.104	17.881	4.104	0.000	100.00	O
以下空白								

注: L-泄露; V-排气; D-解体; R-破裂; F-起火; O-无泄露、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.	5	测试项目名称 Name of Test Items	外部短路 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 (℃)	测试结果 Test result	备注 Remark
01	首次循环,完全充电 1st CYC, Fully Charged	55.1	O	/
02	首次循环,完全充电 1st CYC, Fully Charged	55.6	O	/
03	首次循环,完全充电 1st CYC, Fully Charged	55.2	O	/
04	首次循环,完全充电 1st CYC, Fully Charged	55.2	O	/
05	首次循环,完全充电 1st CYC, Fully Charged	55.3	O	/
06	第 25 个循环,完全充电 25th CYC, Fully Charged	55.6	O	/
07	第 25 个循环,完全充电 25th CYC, Fully Charged	55.0	O	/
08	第 25 个循环,完全充电 25th CYC, Fully Charged	55.2	O	/
09	第 25 个循环,完全充电 25th CYC, Fully Charged	55.3	O	/
10	第 25 个循环,完全充电 25th CYC, Fully Charged	55.5	O	/
以下空白				

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.	6	测试项目名称 Name of Test Items	挤压 Crush		
样品编号 Sample No.	样品状态 Sample status	样品表面最高温度 Max. External Temperature (℃)	测试结果 Test result	备注 Remark	
11	首次循环, 50%充电 1st CYC, 50% Charged	108.6	O	/	
12	首次循环, 50%充电 1st CYC, 50% Charged	37.8	O	/	
13	首次循环, 50%充电 1st CYC, 50% Charged	23.2	O	/	
14	首次循环, 50%充电 1st CYC, 50% Charged	114.1	O	/	
15	首次循环, 50%充电 1st CYC, 50% Charged	28.5	O	/	
16	第 25 次循环, 50%充电 25th CYC, 50% Charged	35.6	O		
17	第 25 次循环, 50%充电 25th CYC, 50% Charged	27.8	O		
18	第 25 次循环, 50%充电 25th CYC, 50% Charged	126.8	O		
19	第 25 次循环, 50%充电 25th CYC, 50% Charged	24.8	O		
20	第 25 次循环, 50%充电 25th CYC, 50% Charged	109.5	O		
以下空白					

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.	7	测试项目名称 Name of Test Items	过度充电 Overcharge
样品编号 Sample No.	样品状态 Sample status	测试结果 Test result	备注 Remark
21	首次循环,完全充电 1st CYC, Fully Charged	O	/
22	首次循环,完全充电 1st CYC, Fully Charged	O	/
23	首次循环,完全充电 1st CYC, Fully Charged	O	/
24	首次循环,完全充电 1st CYC, Fully Charged	O	/
25	第 25 个循环,完全充电 25th CYC, Fully Charged	O	/
26	第 25 个循环,完全充电 25th CYC, Fully Charged	O	/
27	第 25 个循环,完全充电 25th CYC, Fully Charged	O	/
28	第 25 个循环,完全充电 25th CYC, Fully Charged	O	/
以下空白			

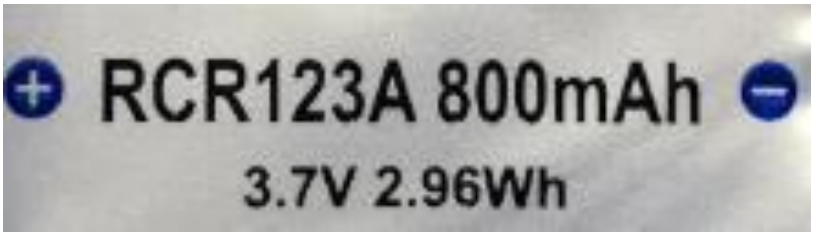
注: D-解体; F-起火; O-无解体、无起火。
Note: D-Disassembly, F-Fire, O-No disassembly & no fire

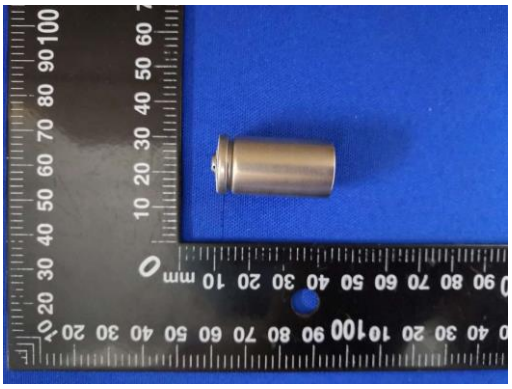
附 表 8
Appendix 8

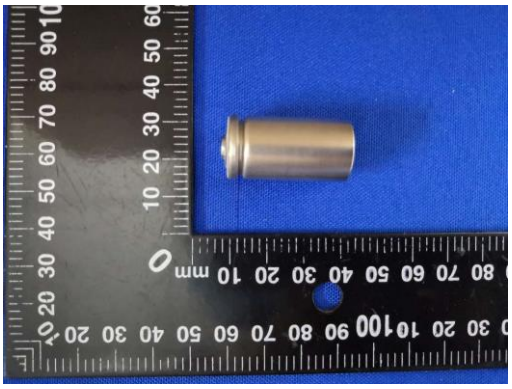
序号 No.	8	测试项目名称 Name of Test Items	强制放电 Forced discharge
样品编号 Sample No.	样品状态 Sample status	测试结果 Test result	备注 Remark
29	首次循环, 完全放电 1st CYC, Fully Discharged	O	/
30	首次循环, 完全放电 1st CYC, Fully Discharged	O	/
31	首次循环, 完全放电 1st CYC, Fully Discharged	O	/
32	首次循环, 完全放电 1st CYC, Fully Discharged	O	/
33	首次循环, 完全放电 1st CYC, Fully Discharged	O	/
34	首次循环, 完全放电 1st CYC, Fully Discharged	O	/
35	首次循环, 完全放电 1st CYC, Fully Discharged	O	/
36	首次循环, 完全放电 1st CYC, Fully Discharged	O	/
37	首次循环, 完全放电 1st CYC, Fully Discharged	O	/
38	首次循环, 完全放电 1st CYC, Fully Discharged	O	/
39	第 25 次循环, 完全放电 25th CYC, Fully Discharged	O	/
40	第 25 次循环, 完全放电 25th CYC, Fully Discharged	O	/
41	第 25 次循环, 完全放电 25th CYC, Fully Discharged	O	/
42	第 25 次循环, 完全放电 25th CYC, Fully Discharged	O	/
43	第 25 次循环, 完全放电 25th CYC, Fully Discharged	O	/
44	第 25 次循环, 完全放电 25th CYC, Fully Discharged	O	/
45	第 25 次循环, 完全放电 25th CYC, Fully Discharged	O	/
46	第 25 次循环, 完全放电 25th CYC, Fully Discharged	O	/
47	第 25 次循环, 完全放电 25th CYC, Fully Discharged	O	/
48	第 25 次循环, 完全放电 25th CYC, Fully Discharged	O	/

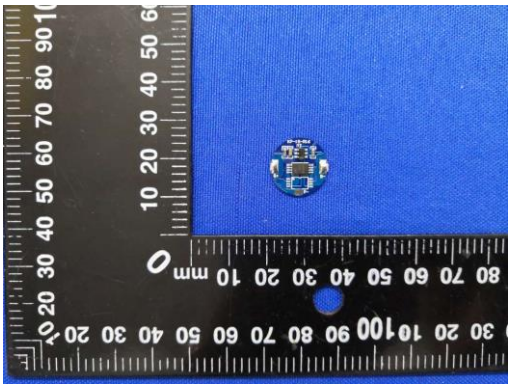
注: D-解体; F-起火; O-无解体、无起火。
Note: D-Disassembly, F-Fire, O-No disassembly & no fire

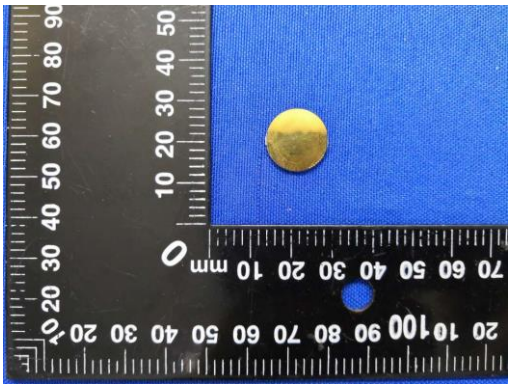
样 品 照 片
Sample photo











====== 报告结束 End of Report ======