



UN38.3检测报告

UN38.3 Test Report

产品名称	聚合物锂离子电池
Name of Sample	Polymer lithium ion battery
委托单位	唐河县鸿易新材料有限公司
Client	Tanghe county Hongyi New Materials Co.,Ltd
检测机构	深圳天溯计量检测股份有限公司
Testing Laboratory	Shenzhen Tiansu Calibration and Testing Co., Ltd.

深圳天溯计量检测股份有限公司 Shenzhen Tiansu Calibration and Testing Co., Ltd.



Page 2 of 16 Pages

1.4	The state of the s
A Trans	申请资料 Applicant information
样 品 名 称 Name of samples	聚合物锂离子电池 Polymer lithium ion battery
型号规格 Type/ Model	601419 天開。
委托单位 Commission by	唐河县鸿易新材料有限公司 Tanghe county Hongyi New Materials Co.,Ltd
委托单位地址 Commissioner address	唐河县产业集聚区 Tanghe county industrial agglomeration area
生产单位 Manufacturer Turns	唐河县鸿易新材料有限公司 Tanghe county Hongyi New Materials Co.,Ltd
生产单位地址 Manufacturer Address	唐河县产业集聚区 Tanghe county industrial agglomeration area
样品数量 Quantity of sample	30个电芯\18个电池 30PCS Cells and 18PCS Batteries
接样日期 Receiving date	2019年2月2日
测试完成日期 Completing date	2019年2月12日7四年 天湖。 7回5年 天湖。 7回5年
0	Su Su

Conclusion/结论:

The submitted samples comply with the Recommendations on the Transport of Dangerous Goods, Manual of Test and Criteria (ST/SG/AC.10/11/Rev.6/Amend.1) Sixth revised edition.

样品符合联合国《关于危险货物运输的建议书》第六版修订版修正1。

Seal/检验专用章: Date of issue: ali

2019/2/15

Tested by:

主检: 刘 欣

Reviewed by:

审核: 蒋晓旭

Approved by:

批准:



7ian Su Rep No.: 20190104936ZB-BR01

Page 3 of 16 Pages

A Train Se	样品扩 Sample De		Tian 5" 天湖° Tian 5"
样品名称 Name of samples	聚合物锂离子电池 Polymer lithium ion battery	型号规格 Type/ Model	601419
商 标 Trade Mark	天湖。 Tian Su Tian Su Tian Su Tian Su Tian Su	电池形状 Cell Shape	一种棱形 Prismatic
样品尺寸(L×W×T) Sample Size	(20.70*15.26*6.64)mm	和 额定容量 Rated Capacity	天M° 90mAh 天 大M° 74m
标称电压 Nominal Voltage	71cm Su	额定能量 Rated Energy	湖。 0.33Wh 大湖。 大湖。
充电限制电压 Limited Charge Voltage	74.2V	放电截止电压 Cut-off Voltage	大湖。 SV Tian Su Tuen Su
锂含量 Lithium content	天 州。 7tan 5 0.271g 天 洲。	组合方式 Compound Mode	天湖° 7/2 第° 7/2011 5" 天湖° (an 5" 天湖°
电芯型号 Cell Mode	天佛。 71m5" 601419 天佛。 天洲。	组成电芯数量 Cell Quantity	TIMES TIMES
标准充电电流 Standard Charge Current	M	最大持续充电电流 Max Continuous Charge Current	90mA 0 7
标准放电电流 Standard Discharge Current	天洲。 18mA ^{mSt} 天洲 Stan Stan 天洲	最大持续放电电流 Max Continuous Discharge Current	90mA Tien St



Page 4 of 16 Pages

	Minus 5"	2 VIII	- 10 A	Tide -	L VIII				
1	测试结论 渊。 湖 湖 湖 湖 湖 湖 湖 湖 湖 湖 湖 湖 湖 湖 湖 湖								
1	4°	Alm S.	Test conclus	ion	*44.0	Tian Su			
ni i	序号	测试项目名称	测试依据	测试结果	本项结论	备注			
	NO.	Name of test	Inspection according to	Test result	Conclusion	Remarks			
	** T1° 700 54	高度模拟 Altitude simulation	UN 试验和标准手册,第III部分,第 38.3.4.1 节 UN Manual of Test and Criteria,Part III, subsection 38.3.4.1	见附表1 See Appendix 1	合格 Pass 供。	天湖 [©] Ausu			
10	胤 [°] 5" T2 八	温度试验 Thermal test	UN 试验和标准手册,第III部分,第 38.3.4.2 节 UN Manual of Test and Criteria,Part III, subsection 38.3.4.2	见附表2 See Appendix 2	人 合格 Tur Pass	天M 7ian 5 ^a 人 人 7ia 5a			
	*T3°	70振动 Vibration 佛。	UN 试验和标准手册,第III部分,第 38.3.4.3 节 UN Manual of Test and Criteria,Part III, subsection 38.3.4.3	见附表3 See Appendix 3	合格 Pass州	Kill of Train Sil			
i a	∰° ' ^{5"} T4 <i></i> √′′	冲击 ^{操。} Shock	UN 试验和标准手册,第III部分,第 38.3.4.4 节 UN Manual of Test and Criteria,Part III, subsection 38.3.4.4	见附表4 See Appendix 4	合格 Pass	7 cas 54 7 cas 54 7 cas 7 cas			
	175°	外部短路 External Short-circuit	UN 试验和标准手册,第III部分,第 38.3.4.5 节 UN Manual of Test and Criteria,Part III, subsection 38.3.4.5	见附表5 See Appendix 5	作 on 5 ⁴ 合格 Pass. 供 ⁵ フェッチ・	天湖。 17201511			
	· · · · · · · · · · · · · · · · · · ·	挤压 ^锅 。 M° Crush	UN 试验和标准手册,第III部分,第 38.3.4.6 节 UN Manual of Test and	见附表6 See Appendix 6	合格 Pass	大 7 (10m Sit)			
	T6 大洲° 714454	推击 Impact 入州。	Criteria, Part III, subsection	见附表6 See Appendix 6	合格 Pass- Pass- Pass-	天湖° 72015 ¹¹ 七湖°			
¥7	∰° 177 7	过度充电 Overcharge	UN 试验和标准手册,第III部分,第 38.3.4.7 节 UN Manual of Test and Criteria,Part III, subsection 38.3.4.7	见附表7 See Appendix 7	合格 Pass	7(41) Sil			
The second secon	T8 5	强制放电 Forced discharge	UN 试验和标准手册,第III部分,第 38.3.4.8 节 UN Manual of Test and Criteria,Part III, subsection 38.3.4.8	见附表8 See Appendix 8	合格 Pass	天湖· 7/20151 玉湖·			



Page 5 of 16 Pages

7/411 511	2 洲			7104.5"		2 Wil	
天湖° 71m5x	71as 5°	天湖 。	附表		天 Mo Tion Su	Tian -	天湖°
	WA.	71411 511	Appen	aix 1		M [°]	7141
测试项目 Test Items	高度模拟 Altitude sin	nulation	天湖。 Tian Su	Į.	WA C	7ian Su • Na	E Vian
1.1	测试步骤 Test proced	gure K	机。	(₩1) ° ,,	天湖 [®] 7ian Su	71cm 5	·· 天淵°
大明 7can Su 天開 7can S	Test cells ar	nd batteries s		d at a pressu	≤11.6kPa的J ure of 11.6kP		
1.2	样品状态 Sample state	us	天湖 [®] Tian Sa	7ian Su	· M.°	ZiM" 76an Su	A. 700
アian 5 H アian 5 H	B1#-B5# B1#-B5# B5#-B10# B5#-B10#	, at first cycl , 在第二十五	环完全充电; e in fully cha 个循环完全分 cles ending i	rged states; 忆电;	ed states;	· Tian	Su 大 Tian Su
1.3	测试结果 Result	天湖 [®] Tian Su	gian Sa	天淵。 天淵。	KM [®] 7ian Su	2. 湖°	天湖° 7ian Su
样品编号	测证 Before	战前 e Test		式后 Test	质量损失 Mass loss	剩余电压 Residual	测试结果 Test result
Sample No.	样品质量 (g) Mass	开路电压(V) Voltage	样品质量(g) Mass	开路电压(V) Voltage	The state of the s	OCV	東側° Tun Su
B1#	3.212	4.179	3.211	4.179	0.03%	100.00%	Р
B2# 700	3.220	4.177	3.220	4.177	0.00%	100.00%	F VIII
B3#	3.218	4.180	3.218	4.179	0.00%	99.98%	P
B4#	3.222	4.176	3.221	4.174	0.03%	99.95%	A P
B5#	3.212	4.178	3.211	4.177	0.03%	99.98%	P
B6#	3.216	4.177	3.215	4.175	0.03%	99.95%	Pilan 54
B7#	3.220	4.180	3.219	4.180	0.03%	100.00%	Р
B8# 1/4	3.212	4.179	3.212	4.179	0.00%	100.00%	P
B9#	3.220	4.180	3.219	4.180	0.03%	100.00%	P ş
B10#	3.212	4.177	3.212	4.177	0.00%	100.00%	A P
	3/4°	740		Dian Su	* 1		

注: L- 泄漏; V- 排气; D- 解体; R- 破裂; F - 起火; P- 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, P-No leakage, no venting, no disassembly, no rupture, no fire.



Page 6 of 16 Pages

后、将其在环境温度为20±5℃的条件下放置24个小时。 Test cells and batteries are to be stored for at least six hours at a test temperature equal to 72±2℃, followed by storage for at least six hours at a test temperature equal to -40±2℃, The maximum time interval between test temperature extremes in 30 minutes, This procedure is to be repeated until 10 total cycles are complete, after which all test cells and batteries are to be stored for 24 hours at ambient temperature (20±5℃). ### ### ### ### ### ### ### ### ### #	710 - 189°	7ian Si		附表	2	支欄。	Tion 50	
Test Items	A 9 7 102 52			Appen	dix 2			Film Su Tian Su
1.1 Test procedure 将电芯和电池在温度为72±2℃的条件下贮存不少于6个小时,然后,在温度-40±2℃条件下贮存不少于6个小时,两个温度间的间隔最长为30min,重复操作上述步骤直到10次,然后,将其在环境温度为20±5℃的条件下放置24个小时。 Test cells and batteries are to be stored for at least six hours at a test temperature equal to 72±2℃, followed by storage for at least six hours at a test temperature equal to 40±2℃, The maximum time interval between test temperature extremes in 30 minutes, This procedure is to be repeated until 10 total cycles are complete, after which all test cells and batteries are to be stored for 24 hours at ambient temperature (20±5℃). 1.2 ##B#B5# , at first cycle in fully charged states; B5#B10# , after 25 cycles ending in fully charged states; B5#B10# , after 25 cycles ending in fully charged states; B5#B10# , after 25 cycles ending in fully charged states; B6#B10# , after 25 cycles ending in fully charged states; B6#B10# , after 25 cycles ending in fully charged states; B7#B10# , after 25 cycles ending in fully charged states; B8#B10# , after 25 cycles ending in fully charged states; B6#B10#		Charles and the second	st _{see 9}	大湖· Tran Sa	Yian ²³	_₩°	71an Su 188	· FLAN
下贮存不少于6个小时,两个温度间的间隔最长为30min,重复操作上述步骤直到10次,然后,将其在环境温度为20±5°C的条件下放置24个小时。 Test cells and batteries are to be stored for at least six hours at a test temperature equal to 7±2°C, followed by storage for at least six hours at a test temperature equal to -40±2°C, The maximum time interval between test temperature extremes in 30 minutes, This procedure is to be repeated until 10 total cycles are complete, after which all test cells and batteries are to be stored for 24 hours at ambient temperature (20±5°C). ### B1# B5# , at first cycle in fully charged states; B5# B10# , 在第一个循环完全充电。 B5# B10# , 在第二十五个循环完全充电。 B5# B10# , after 25 cycles ending in fully charged states; ### B6# Before Test After Test 质量损失 剩余电压 测试结果 Result ### Result ### B8#	1.1		g _{ine} 5* ure	相。	M [®] "S"	····· 美術·	Tien S	
B1# B5#	下贮存不少于6个小时,两个温度间的间隔最长为30min,重复操作上述步骤直到10次,然后,将其在环境温度为20±5℃的条件下放置24个小时。 Test cells and batteries are to be stored for at least six hours at a test temperature equal to 72±2℃, followed by storage for at least six hours at a test temperature equal to -40±2℃, The maximum time interval between test temperature extremes in 30 minutes, This procedure is to be repeated until 10 total cycles are complete, after which all test cells and batteries are to be stored for 24 hours at ambient temperature							
B1#-B5# , at first cycle in fully charged states;	1.2 M	Sample state	7 (1)	E M°	Z WIA	大湖。	K VIA 7iau 5"	7100°
样品编号 Result Bample No. Page Defore Test After Test 质量损失 Mass loss 類余电压 Wass loss 別域结果 Residual OCV B1# 3.211 4.179 3.210 4.179 0.03% 100.00% P B2# 3.220 4.176 3.218 4.176 0.00% 100.00% P B4# 3.211 4.173 3.221 4.173 0.00% 100.00% P B6# 3.211 4.176 3.211 4.175 0.00% 100.00% P B7# 3.219 4.180 3.212 4.177 0.00% 100.00% P B8# 3.212 4.179 0.00% 99.98% P	開 [®] iSu 天開 [®] 7km Su	B1#-B5# , at first cycle in fully charged states; B5#-B10# ,在第二十五个循环完全充电;						
样品编号 Sample No. Before Test After Test 质量损失 Mass loss 剩余电压 Residual OCV 测试结果 Test result OCV B1# 3.211 4.179 3.210 4.179 0.03% 100.00% P B2# 3.220 4.176 3.220 4.176 0.00% 100.00% P B3# 3.218 4.179 3.218 4.178 0.00% 99.98% P B4# 3.221 4.173 3.221 4.173 0.00% 100.00% P B5# 3.211 4.176 3.211 4.175 0.03% 100.00% P B6# 3.215 4.175 3.214 4.175 0.03% 100.00% P B7# 3.219 4.180 3.218 4.179 0.03% 99.98% P B8# 3.212 4.179 3.212 4.177 0.00% 99.95% P	1.3					天湖 [®] Tian Su		
B1# 3.211 4.179 3.210 4.179 0.03% 100.00% P B2# 3.220 4.176 3.220 4.176 0.00% 100.00% P B3# 3.218 4.179 3.218 4.178 0.00% 99.98% P B4# 3.221 4.173 3.221 4.173 0.00% 100.00% P B5# 3.211 4.176 3.211 4.175 0.00% 99.98% P B6# 3.215 4.175 3.214 4.175 0.03% 100.00% P B7# 3.219 4.180 3.218 4.179 0.03% 99.98% P B8# 3.212 4.179 3.212 4.177 0.00% 99.95% P		Before	e Test	After	Test	THE RESIDENCE OF THE PERSON OF		THE RESIDENCE OF STREET
B2# 3.220 4.176 3.220 4.176 0.00% 100.00% P B3# 3.218 4.179 3.218 4.178 0.00% 99.98% P B4# 3.221 4.173 3.221 4.173 0.00% 100.00% P B5# 3.211 4.176 3.211 4.175 0.00% 99.98% P B6# 3.215 4.175 3.214 4.175 0.03% 100.00% P B7# 3.219 4.180 3.218 4.179 0.03% 99.98% P B8# 3.212 4.179 3.212 4.177 0.00% 99.95% P	an 54	THE RESIDENCE OF THE PARTY OF T				84A °	P THE Y-C1 WHEN THE RESIDENCE	*
B3# 3.218 4.179 3.218 4.178 0.00% 99.98% P B4# 3.221 4.173 3.221 4.173 0.00% 100.00% P B5# 3.211 4.176 3.211 4.175 0.00% 99.98% P B6# 3.215 4.175 3.214 4.175 0.03% 100.00% P B7# 3.219 4.180 3.218 4.179 0.03% 99.98% P B8# 3.212 4.179 3.212 4.177 0.00% 99.95% P	B1#	3.211	4.179	3.210	4.179	0.03%		
B4# 3.221 4.173 3.221 4.173 0.00% 100,00% P B5# 3.211 4.176 3.211 4.175 0.00% 99.98% P B6# 3.215 4.175 3.214 4.175 0.03% 100.00% P B7# 3.219 4.180 3.218 4.179 0.03% 99.98% P B8# 3.212 4.179 3.212 4.177 0.00% 99.95% P	B2#	3.220	4.176	3.220	4.176	0.00%	100.00%	Р
B5# 3.211 4.176 3.211 4.175 0.00% 99.98% P B6# 3.215 4.175 3.214 4.175 0.03% 100.00% P B7# 3.219 4.180 3.218 4.179 0.03% 99.98% P B8# 3.212 4.179 3.212 4.177 0.00% 99.95% P	B3#	3.218	4.179	3.218	4.178	0.00%	99.98%	RM
B6# 3.215 4.175 3.214 4.175 0.03% 100.00% P B7# 3.219 4.180 3.218 4.179 0.03% 99.98% P B8# 3.212 4.179 3.212 4.177 0.00% 99.95% P	B4#	3.221	4.173	3.221	4.173	0.00%	100.00%	Р
B7# 3.219 4.180 3.218 4.179 0.03% 99.98% P B8# 3.212 4.179 0.00% 99.95% P	B5#	3.211	S* 4.176	3.211	4.175	0.00%		Р
B8# 3.212 4.179 3.212 4.177 0.00% 99.95% P	B6#	3.215	4.175	3.214	4.175	0.03%	100.00%	P
7/16 (41)	B7#	3.219	4.180	3.218	4.179	0.03%	99.98%	Jus P
RO# 3 219 4 180 3 219 4 178 0 00% 00 05% D	B8#	3.212	4.179	3.212	4.177	0.00%	99.95%	P 4
	B9#	3.219	4.180	3.219	4.178	0.00%	99.95%	P 7
B10# 3.212 4.177 3.212 4.177 0.00% 100.00% P	B10#	3.212	4.177	3.212	4.177	0.00%	100.00%	50 P

注: L- 泄漏; V- 排气; D- 解体; R- 破裂; F - 起火; P- 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, P-No leakage, no venting, no disassembly, no rupture, no fire.



Page 7 of 16 Pages

mian 5th	2 1/1			gian 3		\$ 1911	
天湖。			附表	3			
A° Time	z 淵°	71111 54	Appen	dix 3		湖。	Tian Su
测试项目 Test Items	振动 Vibration	z 溯°	天M Tran Su	· · · · · · · · · · · · · · · · · · ·	ian Su	7:2011 511 天衛	10 7100
1.1	测试步骤 Test proced	gu 5° ure 🙏	料° 7w	MA Su Maga	天湖 [©] Teat Su	Ties-	天淵。
大州 Yeau Su 大州	增加至200H 电芯和电池/	z,然后再减 从三个互相垂	少回到7Hz为 直的方向上循	一个循环,一 f环12次,3个	开始振动。振 一个循环持续 个小时。 rm of the vib	15分钟的对数	效扫频。每个
M Su X 湖° 7cas Su	distorting the shall be a si and back to	e cells in suc nusoidal way 7 Hz travers	h a manner a ve form with a ed in 15 minu	as to faithfully a logarithmic utes, This cy	y transmit the sweep between cle shall be r licular mount	e vibration, T een 7 Hz and epeated 12 t	he vibration d 200 Hz times for a
1.2	样品状态 Sample state B1#-B5#		5 (本)	K Will 7ian Su	₹ viñ °	天湖° Tian Su	Ties 5"
B1#-B5# ,在第一个循环完全充电; B1#-B5# ,at first cycle in fully charged states; B5#-B10# ,在第二十五个循环完全充电; B5#-B10# ,after 25 cycles ending in fully charged states;				K WAR THEN SH	FURN Sus		
1.3	测试结果 Result Tun Su				sa Sa		
样品编号	测证 Before	式前 e Test	测记 After	MARKET AND ADDRESS OF THE PARTY	质量损失	剩余电压	测试结果
Sample No.	样品质量 (g) Mass	开路电压(V) Voltage	样品质量(g) Mass	开路电压(V) Voltage	Mass loss	Residual OCV	Test result
B1#	3.210	4.179	3.210	4.177	0.00%	99.95%	P &
B2#	3.220	4.176	3.220	4.174	0.00%	99.95%	P 1
B3#	3.218	4.178	3.218	4.178	0.00%	100.00%	s P
B4#	3.221	4.173	3.221	5 4.171	0.00%	99.95%	Р
B5#	3.211	4.175	3.210	4.174	0.03%	99.98%	P
B6#	3.214	4.175	3.213	4.173	0.03%	99.95%	P
B7#	3.218	4.179	3.218	4.179	0.00%	100.00%	P
B8#	3.212	4.177	3.212	4.175	0.00%	99.95%	P
B9#	3.219	4.178	3.219	4.176	0.00%	99.95%	que P
B10#	3.212	4.177	3.212	4.175	0.00%	99.95%	Р
A CO							

注: L- 泄漏; V- 排气; D- 解体; R- 破裂; F - 起火; P- 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, P-No leakage, no venting, no disassembly, no rupture, no fire.



Page 8 of 16 Pages

Pick Appendix 4 Appendi	Test Items Shape	hock J试步骤 est procedu 稳固的托架 50gn(或与 工型电池组须 产正弦波冲击 中击,接着在 est cells and ubjected to a which is small be subjected to t	固定住每个 「全受最大加」 。每个电池 反方向经受d batteries so a half-sine so aller) and purected to a ha aller) and purected to a ha	电芯和电池样较小值)的半速度50gn(或电池组须在三次冲击,总由目的 be secushock of peakulse duration alf-sine of peakulse duration	#AB的全部配 正弦的加速 或与√空空 中 三个互相垂 块 共经受18次 red to the test acceleration of 6 millisect ack acceleration of 11 millise	度撞击,脉冲 可的较小值)和 直的电池安装 冲击。 sting machine n of 150gn (o onds, large c ion of 50gn (o	持续6毫秒, 和脉冲持续时 方位的正方向 e, and each s r Acceleration ells and large or Acceleration	大型电池和 f间11毫秒的 句经受三次 shall be on(gn)=√□□□ te batteries on(gn)=√□□□□ ry shall be
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negative direction of three mutually perpendicular mounting positions of the cell or battery for a total of 18 shocks.	pa 744 ba						in the	
battery for a total of 18 shocks.	ya 7141 ba	negative direction of three mutually perpendicular mounting positions of the cell or						
# 品状态 Sample status B1#-B5# , 在第一个循环完全充电; B1#-B5# , at first cycle in fully charged states; B5#-B10# , after 25 cycles ending in fully charged states; B5#-B10# , after 25 cycles ending in fully charged states; 1.3 # 日本日本語								
B1#-B5# ,在第一个循环完全充电; B5#-B10# ,在第二十五个循环完全充电; B5#-B10# ,after 25 cycles ending in fully charged states;		自		-14.5	Tean Su		天 附	
B1#-B5#	1.2 Sa	ample statu	S					* N
B5#-B10# ,在第二十五个循环完全充电; B5#-B10# ,after 25 cycles ending in fully charged states;	711150	B1#-B5# ,	在第一个循	环完全充电;	wa 6	7182 St	\$ V	M Su
B5#-B10# after 25 cycles ending in fully charged states;		B1#-B5# ,	at first cycle	e in fully cha	rged states;			408
1.3 测试结果 Result 样品编号 Sample No.	7/E	B5#-B10# ,	在第二十五	个循环完全充	范电;	7 car 5		K VITA
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样品编号 Sample No. Result 料品编号 Sample No. Defore Test 別試后 After Test 所養量损失 Mass 所養电压(V) Voltage 开路电压(V) Mass 开路电压(V) Voltage 所務电压(V) Voltage Mass loss Residual OCV Test result B1# 3.210 4.177 3.209 4.176 0.03% 99.98% P B2# 3.220 4.174 3.219 4.173 0.03% 99.98% P B3# 3.218 4.178 3.217 4.176 0.03% 99.95% P	1 4 1 1							
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	B2#	3.220	4.174	3.219	4.173		99.98%	
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B7# 3.218 4.179 3.218 4.177 0.00% 99.95% P					The second secon			
	B8# W	0.210	4.175	3.212	4.173	0.00%	99.95%	DA P
	B9#	3.212		3.218	4.174	0.03%	99.95%	5 P
	B10#		4.170	3.212	4.175	0.00%	100.00%	Р

注: L- 泄漏; V- 排气; D- 解体; R- 破裂; F - 起火; P- 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, P-No leakage, no venting, no disassembly, no rupture, no fire.



Page 9 of 16 Pages

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F VA Tion 5s	长棚 。	9144 54	火湖 。
NA Se	Ap	pendix 5	E M's
测试项目 Test Items	外部短路 External short circuit		Tean 5" 天V Tean
1.1 F. Will Tran 54	A DESCRIPTION OF THE PROPERTY	C,以使电芯或电池样品外表温度 1欧姆的线路短接,待电芯或电	
A Tion Su Tion Su Tion Su	The cell or battery to be tested temperature reaches 57±4℃ a circuit condition with a total ext short circuit condition is continuous.	芯或电池必须进一步观察6个小时 shall be temperature stabilized nd then the cell or battery shall ernal resistance of less than 0. ued for at least one hour after the to 57±4℃, the cell or battery me e concluded.	so that its external case be subjected to a short ohm at 57±4°C, This ne cell or battery external
71.00 5+ 1.2 美術 71.00 5	B5#-B10# ,在第二十五个循环	lly charged states; 环完全充电;	大VIII 7(an Su 大VIII) 7(an Su 天)
1.3	B5#-B10# , after 25 cycles er 测试结果 Result	nding in fully charged states;	大咖 1° 大湖。
样品编号 Sample No.	样品表面最高温度(℃) Max External Temp	测试结果 Test Result	备 注 Remark
₩A B1# 70	57.8	: 湖 P 7/4	Pian 54
B2#	57.5	o guas SCP	大 侧
B3#	57.1	P M°	- Ton-
B4# s	58.6	P 7100 St	A TIME
B6#	56.7 57.9	P 7	N 5u € MA
B7#	58.4	P	MA TIMES
B8#	57.9	15* 2 W P	9 VIII
B9#	58.0	71ah 5 P 7 Mil	<i>,</i> ₩°
B10#	57.4 gran 54	₹ [®] P	Ma Team 5"
an Su	K vin	A " 7100 -	VIII Dian Su

注: D- 解体; R- 破裂; F- 起火; OT- 超过170℃; P- 无解体、无破裂、无起火、不超过170℃ Note: D -Disassembly, R -Rupture, F -Fire, OT -Over Temperature, P -no disassembly, no rupture, no fire, no over temperature.



Page 10 of 16 Pages

7 Si	文例· 7100 S" 来例
表谢 。	7005 附表6
A° Tian Sa	Appendix 6
测试项目	挤压撞击
Test Items	Crush\Impact
Tion -	测试步骤 7 ¹⁰⁰
1.1	Test procedure
乘淵 。	挤压 100 700 100 100 100 100 100 100 100 100
7ian Su	Crush 714154 714154
大聯	电池芯或组成电池芯在两个平面间挤压。挤压在第一个接触点以约1.5cm/s 的速度慢慢进
M° Time	行,直到下面三个选项之一达到为止: AA
, Sa	(a)作用力达到 13kN±0.78kN;
天湖°	(b)电池芯电压降至少达到100mV;
7100 50	(c)电池厚度和最初比较变形至少50%。 一旦达到最大压力,电压降超过100 mV或者电池芯变形超过50%,压力应该解除。
	A cell or component cell is to be crushed between two flat surfaces. The crushing is to
主湖 °	be gradual with a speed of approximately 1.5 cm/s at the first point of contact. The
Tien Si	crushing is to be continued until the first of the three options below is reached.
毛 術	(a) The applied force reaches 13kN±0.78kN;
MAS 7ian 5	(b) The voltage of the cell drops by at least 100 mV; or
54	(c) The cell is deformed by 50% or more of its original thickness.
4 编°	Once the maximum pressure has been obtained, the voltage drops by 100mV or more,
7 ion Su	or the cell is deformed by at least 50% of its original thickness, the pressure shall be released.
	Teleased.
· M°	Tion 5th Fifth 1880 Tion Figure 5th
7 can Su	撞击 Impact A State A A A A A A A A A A A A A A A A A A A
2.1	(适用于直径不小于18毫米的圆柱形电池)将电池或元件电池样品平放在一个平面上,其纵轴平行于
The Time	测试台面年,将一直径为15.8 mm ± 0.1 mm的316型不锈钢棒横放在电池中心位置。然后,将一质
an Su	量为9.1 kg ± 0.1 kg的物体从61±2.5 cm的高度落向样品。样品在进行试验时,其外表温度应不超过170℃。且试验结束后6个小时之内,样品应无解体、无起火现象发生。
· M°	(applicable to cylindrical cells not less than 18mm in diameter)
year Su	The sample cell or component cell is to be placed on a flat smooth surface. A 15.8 mm ± 0.1
	mm diameter, at least 6 cm long, or the longest dimension of the cell, whichever is greater, Type 316 stainless steel bar is to be placed across the centre of the sample. A 9.1 kg \pm 0.1 kg mass is
*AA	to be dropped from a height of 61 ± 2.5 cm at the intersection of the bar and sample in a
Tian Su	controlled manner using a near
. 1	Frictionless, vertical sliding track or channel with minimal drag on the falling mass. The vertical
MA TIME	track or channel used to guide the falling mass shall be oriented 90 degrees from the horizontal supporting surface.
MIA Su	The test sample is to be impacted with its longitudinal axis parallel to the flat surface and
· Ma	perpendicular to the longitudinal axis of the 15.8 mm ± 0.1 mm diameter curved surface lying
700150	across the centre of the test sample. Each sample is to be subjected to only a single impact. Cells and component cells meet this requirement if their external temperature does not exceed
	170°C and there is no disassembly and no fire during the test and within six hours after this test.
3A.0	THE
7 can Su	天湖 天湖 天湖
4	HO TIEN SH KIMO TIEN SH
700	Su 天開 7km Su 天開
	d



Page 11 of 16 Pages

Middle 5"	 	The second secon	K WIN
大洲	71015" Mas	附表6	Time in the
A" 7icas	Ap	pendix 6	7ian St
1.2	样品状态 Sample status	K VAPO Trans St	71.44.58 天開 [®] 71.44
	C11#-C15# , 在第一个循环充电 C11#-C15# , at first cycle at 50	过50%的额定容量; 0% of the design rated capacity;	quas #
F.M. Su	C16#-C20# , 在第二十五个循环		7100 54
1.3 美術	测试结果 Result	7.an 5t	大湖° Fina Sa
样品编号 Sample No.	样品表面最高温度(℃) Max External Temp	测 试 结 果 Test Result	备注 Remark
C11#	22.6	天Mi P 天湖	e 7can - was e
C12#	7100 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	RPM° 7um	Was Tun Su
C13#	5 22.7	X網° P	R MI Tian Su
C14#	24.0	P Than St	天潮。
C15#	22.6	7 Jun Su P	天開。
C16#	22.9	P《侧	70
C17#	24.0	天湖 P	5 Tian SH
C18#	7 22.5 £ M	P. Tions	*
C19#	23.4	P. 5"	美潮
C20#	24.0	Tian St P Kill	2 3A°
Mar.	Tean Su	毛潮 。	years Tiansu

注: D- 解体; R- 破裂; F - 起火; OT– 超过170℃; P-无解体、无起火、不超过170℃ Note: D -Disassembly, R -Rupture, F-Fire, OT –Over Temperature, P- no disassembly, no fire, no over temperature.



Page 12 of 16 Pages

	K VIII	E WAS TIAN SI	Jean Su	E VAA " Train "
	长 删°	7100 5° 40 8	附表7	Ties -
1		Ap	pendix 7	Tian Su
	测试项目 Test Items	过度充电 Overcharge	天淵° 7can Su	7ian S ^a 天淵。 天淵。
	1.1 F. H. 70an 5u	测试步骤 Test procedure 如果厂家推荐的充电电压不超过 充电电压或者是22V,取其中较		
7.0	開。 ディam S 大湖。 大湖。 Tian Su 上湖。	为 1.2倍的厂家标定最大充电电灯 When the manufacturer's recomminimum voltage of the test shat voltage of the or 22V, whicheve charge voltage is more than 18 maximum charge voltage. The courrent recommended by the maximum charge voltage.	压。充电电流为厂家推荐的最大 nmended charge voltage is not all be the lesser of two times the er is less. When the manufactu V, the charging voltage of the te charging current is 2 times of th	充电电流2倍。 more than 18V, the maximum charge irer's recommended est shall be 1.2 times
	7ian 5" 1.2 × M 7ian 5	样品状态 Sample status B21#-B24# ,在第一个循环完全	八川	Tian Su Yas
	M よられ 大湖 ^の 7は454	B21#-B24# , at first cycle in ful B25#-B28# , 在第二十五个循环 B25#-B28# , after 25 cycles en		天湖。
	1.3	测试结果 Result		天淵。
	样品编号 Sample No.	测试前开路电压(V) Voltage Before Test	测试结果 Test Result	备 注 Remark
	_{ум} В21# дия	4.178	P 7im	K VIII
A	B22#	4.178	TIM SIP :	长 潮
	B23#	4.180	P 编°	The same of the sa
	B24#	4.179	P 7100 S=	VIII Cu
	B25#	4.178	5 P	100
	B26#	gus 4.179 美洲	P xa o 7tas	天啊
	B27#	4.179	P _{ina} 5 ^u	714x 5
	B28#	7 4.176	P P	
* 7	湖° 7cca			天湖。 Tian Su Tian Su
	± 溯°			WA .

注: D-解体; F-起火; P-无解体、无起火。

Note: D -Disassembly, F-Fire, P- no disassembly, no fire.

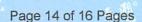


Page 13 of 16 Pages

mass 5"	5 M		Tide 2"		(1.)
人 爾。			表8		
A° sa	z iA° 70	Appe	endix 8	≤ Wh°	7ias 5"
测试项目 Test Items	强制放电 Forced discharge	天湖 7iax54			
1.1	测试步骤 Test procedure	天概。	K With Tien Su	大湖。 Tian Su	天淵。
天M Tran 5th 天淵 Su 天淵	在20±5℃的环境温度下,将单个电芯连接在12V的直流电源上进行强制放电,此直流电源提供每个电芯初始电流为制造厂指定的最大放电电流,放电时间为额定容量除以初始电流。 Each cell shall be forced discharged at ambient temperature by connecting it in series with a 12V D. C, power supply at an initial current equal to the maximum discharge current specified the manufacturer The specified discharge current is to be obtained by connecting a resistive load of the appropriate size and rating in series with the test cell.				
connecting a resistive load of the appropriate size and rating in series with the test connecting a resistive load of the appropriate size and rating in series with the test connecting a resistive load of the appropriate size and rating in series with the test connecting a resistive load of the appropriate size and rating in series with the test connecting a resistive load of the appropriate size and rating in series with the test connecting a resistive load of the appropriate size and rating in series with the test connecting a resistive load of the appropriate size and rating in series with the test connecting a resistive load of the appropriate size and rating in series with the test connecting a resistive load of the appropriate size and rating in series with the test connecting a resistive load of the appropriate size and rating in series with the test connecting a resistive load of the appropriate size and rating in series with the test connecting a resistive load of the appropriate size and rating in series with the test connecting a resistive load of the appropriate size and rating in series with the test connecting a resistive load of the appropriate size and rating in series with the test connecting a resistive load of the appropriate size and rating in series with the test connecting a resistive load of the appropriate size and rating in series with the test connecting a resistive load of the appropriate size and rating in series with the test connecting a resistive load of the appropriate size and rating in series with the test connecting a resistive load of the appropriate size and rating in series with the test connecting a resistive load of the appropriate size and rating in series with the test connecting a resistive load of the appropriate size and rating a resistive load of the appropriate size and rating a resistive load of the appropriate size and rating a resistive load of the appropriate size and rating a resistive load of the appropriate size and rating a resistive load of the appropriate					
71.2 × 1.2 ×	样品状态 Sample status C29#-C38#,在第一个循环完全放电:				
M 50 天間 ⁰ 710050	C29#-C38# , at first cycle in fully discharged states; C39#-C48# , 在第二十五个循环完全放电; C39#-C48# , after 25 cycles ending in fully discharged states;				
1.3	测试结果 Result	天硼"	7ian Su	天湖 ^c 7im Sii	天湖
样品编号 Sample No.	试验前电压(V) OCV prior to test	测试结果 Test Result	样品编号 Sample No.	试验前电压(V) OCV prior to test	测试结果 Test Result
C29#	3.468	Vii P	C39#	3.471	₹P ^(m)
C30#	3.475	Р	C40#	3.477	Р
C31#	3.456	P系M	C41#	3.459	Р
C32#	3.458	Р	C42#	7 3.458	₹ [®] P
C33#	3.479	Р	C43#	3.479	Р
C34#	3.463	P	C44#	3.474	PA
C35#	3.472	711 P	C45#	3.479	A P
C36#	3.453	P	C46#	3,452	In St. P
C37#	3.458	。M°P	C47#	3.464	PA
C38#	3.467	Jun St P	C48#	3.475	Р
e M°	71as Sa	夫湖 [®]	100	天湖° Tian 5	3

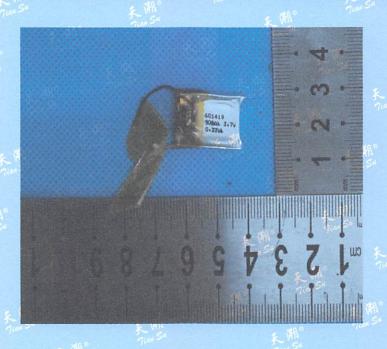
注: D-解体; F-起火; P-无解体、无起火。

Note: D -Disassembly, F-Fire, P- no disassembly, no fire.





样品及标识照片 Photos of samples and markings(battery)



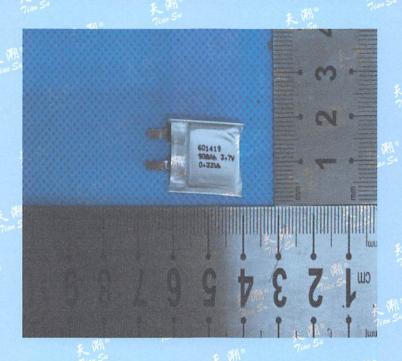


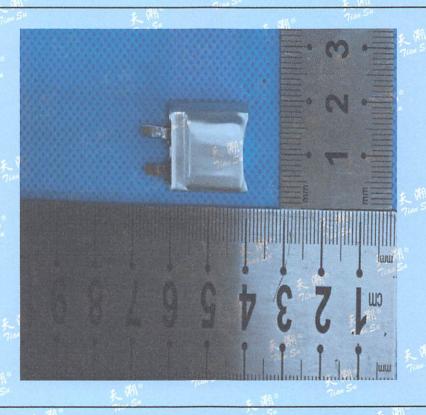


7iau Su Rep No.: 20190104936ZB-BR01

Page 15 of 16 Pages

样品及标识照片 Photos of samples and markings(Cell)





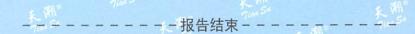


Page 16 of 16 Pages

申明

Statements

- 1. 本报告无检测单位印章无效。
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and Testing