



Page 1 / 15 Pages

检测报告 UN38.3

lame	of sample:	Lithium Ion Battery
	产品名称:	程离子电池 第一次 理离子电池
	Client:	Jiangsu WeLion New Energy Battery Co.,LTD.
	委托单位:	江苏卫蓝新能源电池有限公司
Cla	ssification:	Commission Test
	检测类别:	表 M

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

B/1,4, NO.2 Jinlong Road, Longgang District, Shenzhen, China

深圳市龙岗区宝龙街道锦龙大道2号1栋、4栋

Web: www.tiansu.org E-mail: tsjc@tiansu.org Tel: 0755-89457984



UN38.3



Page 2 / 15 Pages

	rage 27 To rages
Name of samples: Lithium Ion Battery	Trade mark: -
样品名称: 锂离子电池	商标: -1000
Commissioned by: Jiangsu WeLion New Energy Battery Co.,LTD. 委托单位: 江苏卫蓝新能源电池有限公司	Commissioner address: NO.30 Hongchang Road, Zhongguancun Industrial Park, Liyang, Jiangsu Province, China. 委托单位地址: 江苏省溧阳市中关村产业园宏昌路 30 号
Manufacturer by: Jiangsu WeLion New Energy Battery Co.,LTD. 制造单位: 江苏卫蓝新能源电池有限公司	Manufacturer address: NO.30 Hongchang Road, Zhongguancun Industrial Park, Liyang, Jiangsu Province, China. 制造单位地址: 江苏省溧阳市中关村产业园宏昌路 30 号
Manufacturer's Contact Information 制造商联系信息: Phone:13951854956 Email:Imiao@solidstalelion.com	Manufacturer's Web Site 制造商网址:
Type/Model	shape: Prismatic
型号规格: CB100	样品形状: 棱柱形
Appearance color: Black	Sample size
样品颜色: 黑色	样品尺寸: T(89.89mm)*W(126.72mm)*L(202.91mm)
Rated info.	Cell quantity
额定信息: 27Ah\1198.8Wh\44.4V	组成电芯数量: 12PCS
Quantity of sample: 38cells	Cell mode
样品数量: 38 个电芯	电芯型号: PL9887187
Limited charge voltage	Cut-off voltage
充电限制电压: 50.4V	放电截止电压: 33.6V
Standard charge current	Max continuous charge current
标准充电电流:13.5A	最大持续充电电流: 54A
Standard discharge current	Max continuous discharge current
标准放电电流:13.5A	最大持续放电电流: 81A
Receiving date	Sample identification
接样日期: 2020 年 08 年 15 日	样品标识序号: 1#-46#
Completing date	Test item: 8 items
完成日期: 2020 年 08 月 24 日	测试项目: 7 项
Test constrains	2 Vill

Test conclusion:

检测结论:

The Lithium Ion Battery submitted by Jiangsu WeLion New Energy Battery Co., Lithium according to Section 38.3 of the Sixth Revised Edition Amendment 1 of the Recommendations on the Transport of Danggroup Goods, Manual of Test and Criteria (ST/SG/AC.10/11/Rev.6/Amend.1/Section38.3). The test results comply with the relevant requirements of the standard.

由江苏卫蓝新能源电池有限公司送检的锂离子电池,依据《关于危险品货物运输和建议书》试验和标准习册第六修订版修正 1 第 38.3 节进行检测,测试结果符合标准相关要求。

Date of issue: 00 just 28 2020 定日期: 2020 年 08 月 28 日

批准\Approved by 技术负责人\ Technology Supervisor

审核\Reviewed by 项目工程师\ Project Engineer



主检\Tested by 测试工程师\ Test Engineer

Page 3 / 15 Pages

Description and illustration of the sample:

样品说明及描述:

Test item	Sample No.	State 5th	Remark
测试项目	样品编号	状态	备注
X 710	1#~4#	at first cycle in fully charged states; 在第一个循环完全充电;	Cell
T.1~T.5	5#~8#	after 25 cycles ending in fully charged states; 在第二十五个循环完全充电;	电芯
e 7ian Su	9#~13#	at first cycle at 50% of the design rated capacity; 在第一个循环充电 50%的额定容量;	Ç VIII 7100 Su Cell
T.6 £ WA Tian Su	14#~18#	after 25 cycles ending in fully charged at 50% of the design rated capacity; 在第二十五个循环充电 50%的额定容量;	电芯
T.7	1	大網 Tian Su 天棚 Tian Su	N/A
7 an Su	1 M	7ian 2	不适用
F WA	19#~28#	at first cycle in fully discharged states; 在第一个循环完全放电;	Cell
T.8	29#~38#	after 25 cycles ending in fully discharged states; 在第二十五个循环完全放电;	电芯

┗ -	' 4.'	- C 11		procedure:
112	SCCRINTIAN	OT TOO	campling	nrocadiira:

取	样	程	序	的	说	眀	•
-//	. 1 1	17	/ J	HJ	ν	./ /	

Description of report revision:

报告修订的说明:

Remarks:

备注:

The Lithium Ion Battery submitted by Jiangsu WeLion New Energy Battery Co.,LTD. are Multiple cell.

由江苏卫蓝新能源电池有限公司所送的锂离子电池是多电芯组合。



Page 4 / 15 Pages

Photos of Multiple cells\组合电芯图片







Page 5 / 15 Pages

Photos of Single cell\单电芯图片





Page 6 / 15 Pages

38.3.4	Procedure/测记	式步骤	win .	7 can 5"		毛 侧	_	
天湖	Test 1: Altitude simulation/测试 1: 高度模拟							
	Test cells and batteries shall be stored at a pressure of 11.6kPa or less for at least six hour at ambient temperature (20±5℃). 将电芯和电池在温度为 20±5℃,大气压力为不大于 11.6kpa 的环境中贮存不少于 6 个小时。							
	Requirement/标准要求:							
	1.Cells and ba	tteries Mass lo	ss limit: ≤0.1%	244			P	
38.3.4.1	样品质量损	失≤0.1%。					Р	
\$ W		- 3)		•	relating to voltag	e is not	9	
				l discharged sta 电压的 90%,此:	ates. 要求不适用于完全	放完电的电池	2 溯	
	3.No leakage,		, and a second	no rupture and r 无破裂以及无	no fire. 着火现象的发生。	天湖 Tian Su	7ian S	
} 10 10 10	Result 测试结果	天) Tian S	A	天 (南) Frant 54	7ian Su	主潮	天 南 Tian Su	
Sample No.	Before test 测试前			r Test 试后	Mass loss	Residual OCV	Test result	
样品编号	Mass 样品质量 (kg)	Voltage 开路电压(V)	Mass 样品质量(kg)	Voltage 开路电压(V)	质量损失(%)	剩余电压(%)	测试结果	
1#	4.65	50.112	4.65	50.088	0.00	99.95	Р	
2#	4.64	50.088	4.64	50.064	0.00	99.95	Р	
3#	4.66	50.064	4.66	50.040	0.00	99.95	P	
4#	4.64	50.088	4.64	50.052	0.00	99.93	Р	
5# ^{71au 5}	4.65	50.100	4.65	50.076	0.00	99.95	Р	
6#	4.64	50.064	4.64	50.040	0.00	99.95	P	
7#	4.66	50.076	4.66	50.052	0.00	99.95	Р	
8#	4.65	50.112	4.65	50.088	0.00	99.95	P	

Other supplements: Test result "P" decides that the test item passes.

Page 7 / 15 Pages

38.3.4	Procedure/测	试步骤					——————————————————————————————————————	
天湖	Test 2: Therr	nal test/测试 2	: 温度测试		天湖.	-71cm - 38A	70	
ではい。ラー 天湖 Tian Su チフ ない Su	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℃). 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。							
38.3.4.2	Requirement/ 1.Cells and ba 样品质量损	atteries Mass lo	oss limit: ≤0.1%	天湖。 Tian Su	Tian Su Tian Su Pian Tian	美術 7ian.5 ()A ()Su	P A	
天M Tian Su 子	applicable t	to test cells and	l batteries at fu	l discharged st	relating to volta ates. 要求不适用于完	Jian Su	天開 7ian Su	
天湖 Tian Su	3.No leakage, no venting, no disassembly, no rupture and no fire. 样品(电池)应无漏液、无排气、无解体、无破裂以及无着火现象的发生。							
9	Result 测试结果							
Sample No.	Before test 测试前			After Test 测试后		Residual OCV	Test result	
样品编号	Mass 样品质量 (kg)	Voltage 开路电压(V)	Mass 样品质量(kg)	Voltage 开路电压(V)	质量损失(%)	剩余电压(%)	测试结果	
1#	4.65	50.088	4.65	49.944	0.00	99.71	Р	
2#	4.64	50.064	4.64	49.932	0.00	99.74	P	
3#	4.66	50.040	4.66	49.920	0.00	99.76	P.	
4#	4.64	50.052	4.64	49.932	0.00	99.76	Р	
5#	4.65	50.076	4.65	49.944	0.00	99.74	P	
5 6#	4.64	50.040	4.64	49.920	0.00	99.76	Р	
		Carlo V A				The second secon		
7#	4.66	50.052	4.66	49.932	0.00	99.76	Р	

Other supplements: Test result "P" decides that the test item passes.

Page 8 / 15 Pages

38.3.4	Procedure/测	试步骤					
天湖	Test 3: Vibra	tion/测试 3: 振	动 Tian Su		天湖	-7tan⊃" • 889	. 7
	distorting the be a sinusoid Hz traversed each of three 将电芯和电池加至 200Hz,	cells in such a i al wave form wi in 15 minutes, ī mutually perpe 牢固地安装在振	manner as to fa th a logarithmic Γhis cycle shall ndicular mounti 动台的台面上, 刊 7Hz 为一个循	ithfully transmi sweep betwee be repeated 12 ng position of t 然后开始振动 环,一个循环技	en 7 Hz and 200 l 2 times for a total	ne vibration shall Hz and back to 7 of 3 hours for 形式,以 7Hz 增	天湖 Tian Su Tian Su
38.3.4.3	样品质量打	atteries Mass Io 员失≤0.1%.			Tian Si Tian n Su	M 71as S	P 美潮 7ian Su
	applicable 样品试验后 和电芯。	to test cells and 开路电压应不值	batteries at ful 氐于试验前开路	discharged sta 电压的 90%,此	要求不适用于完全		天 瀬 7ian Su
		, no venting, no)应无漏液、无	1100		no fire. 着火现象的发生。	,	v a
	Result 测试结果		天湖 5.00	Tian Su	天 7ia	祖 。S*	天讲 Tian S
Sample No.	Befor	Before test 测试前		Test 式后	Mass loss	Residual OCV	Test result
样品编号	Mass 样品质量 (kg)	Voltage 开路电压(V)	Mass 样品质量(kg)	Voltage 开路电压(V)	质量损失(%)	剩余电压(%)	测试结果
1#	4.65	49.944	4.65	49.920	0.00	99.95	Р
2#	4.64	49.932	4.64	49.896	0.00	99.93	Р
3#	4.66	49.920	4.66	49.896	0.00	99.95	Pian
4#	4.64	49.932	4.64	49.908	0.00	99.95	Р
5#	4.65	49.944	4.65	49.920	0.00	99.95	P
6#	4.64	49.920	4.64	49.896	0.00	99.95	Р
7#	4.66	49.932	4.66	49.908	0.00	99.95	Р
	AM.	100		55		244	

0.00

99.95

Other supplements: Test result "P" decides that the test item passes.

49.956

4.65

49.932

其他补充:测试结果"P"代表判定该测试项目通过。

4.65

8#

Page 9 / 15 Pages

38.3.4	Procedure/测	引试步骤					_	
天潮	Test 4: Shoc	k/测试 4: 冲击	7ian Su		天洲	-7ean >"	Ŷ	
7 ian 5 ii 7 ian 5 ii 7 ian 5 ii 7 ian 5 ii 38.3.4.4	Test cells and batteries shall be secured to the testing machine, and each shall be subjected to a half-sine shock of peak acceleration of 150gn (or Acceleration(gn)= \(\square{\text{100850}} \), which is smaller) and pulse duration of 6 milliseconds, large cells and large batteries shall be subjected to a half-sine of peak acceleration of 50gn (or Acceleration(gn)= \(\square{\text{300850}} \), which is smaller) and pulse duration of 11 milliseconds. Each cell or battery shall be subjected to three shocks in the positive direction followed by three shocks in the negative direction of three mutually perpendicular mounting positions of the cell or battery for a total of 18 shocks. 以稳固的托架固定住每个电芯和电池样品的全部配件表面。对每个电芯或电池以峰值为 150gn (或与\(\square{\text{100850}} \) 中的较小值)的半正弦的加速度撞击,脉冲持续6毫秒,大型电池和大型电池组须经受最大加速度 50gn(或与\(\square{\text{30090}} \) 中的较小值)和脉冲持续时间 11 毫秒的半正弦波冲击。每个电池或电池组须在三个互相垂直的电池安装方位的正方向经受三次冲击,接着在反方向经							
天湖 7ian Su	每个电池或电池组须在三个互相垂直的电池安装方位的正方向经受三次冲击,接着在反方向经受三次冲击,总共经受 18 次冲击。 Requirement/标准要求: 1.Cells and batteries Mass loss limit: ≤0.1%. 样品质量损失≤0.1%. 2.Open circuit voltage not less than 90%, The requirement relating to voltage is not applicable to test cells and batteries at full discharged states. 样品试验后开路电压应不低于试验前开路电压的 90%,此要求不适用于完全放完电的电池和电芯。 3.No leakage, no venting, no disassembly, no rupture and no fire. 样品(电池)应无漏液、无排气、无解体、无破裂以及无着火现象的发生。							
表了。 天 Tian Su	样品质量损 2.Open circui applicable 样品试验后 和电芯。 3.No leakage 样品(电池	失≤0.1%. t voltage not les to test cells and f开路电压应不作 , no venting, no) 应无漏液、无	batteries at ful 氐于试验前开路 disassembly, r	I discharged sta 电压的 90%,此 no rupture and r	ates. 要求不适用于完全 no fire.	全放完电的电池	EMI Tian Su	
A 57 天湖 7tan 54 天湖 系 系 系 3 3 3 3 3 3 3 3 3 3 3 3 3	样品质量损 2.Open circui applicable 样品试验后 和电芯。 3.No leakage 样品(电池 Result/测试组	失≤0.1%. t voltage not les to test cells and 开路电压应不作 , no venting, no) 应无漏液、无	batteries at ful 纸于试验前开路 disassembly, r 选排气、无解体、	I discharged sta 电压的 90%,此 no rupture and r 无破裂以及无	ates. 要求不适用于完全 no fire.	全放完电的电池	EMA Tian Su U U Tian S	
Sample	样品质量损 2.Open circui applicable 样品试验后 和电芯。 3.No leakage 样品(电池 Result/测试组	失≤0.1%. t voltage not les to test cells and f开路电压应不作 , no venting, no) 应无漏液、无	batteries at ful 纸于试验前开路 disassembly, r 上排气、无解体、	I discharged sta 电压的 90%,此 no rupture and r	ates. 要求不适用于完全 no fire.	全放完电的电池	Test	
Sample No. 样品编号	样品质量损 2.Open circui applicable 样品试验后 和电芯。 3.No leakage 样品(电池 Result/测试组	失≤0.1%. t voltage not lest to test cells and f开路电压应不值, no venting, no)应无漏液、无	batteries at ful 纸于试验前开路 disassembly, r 上排气、无解体、	I discharged sta 电压的 90%,此 no rupture and r 无破裂以及无	ates. 要求不适用于完全 no fire. 着火现象的发生。	全放完电的电池	Test result 测试结果	
No.	样品质量损 2.Open circui applicable 样品成验后和电芯。 3.No leakage样品(电池 Result/测试组 Before Mass	失≤0.1%. t voltage not lest to test cells and 于路电压应不作,no venting, no)应无漏液、无法果re test 式前	batteries at ful 纸于试验前开路 disassembly, r 上排气、无解体、 After Mass	I discharged sta 电压的 90%,此 no rupture and r 无破裂以及无 Test 式后 Voltage	ates. 要求不适用于完全 no fire. 着火现象的发生。 Mass loss	全放完电的电池 。	result	
No. 样品编号	样品质量损 2.Open circui applicable 样品成为。 3.No leakage 样品(电池 Result/测试结 Before Mass 样品质量 (kg)	失≤0.1%. t voltage not les to test cells and 于路电压应不作 , no venting, no) 应无漏液、无 ま果 re test 式前 Voltage 开路电压(V)	batteries at ful 丢于试验前开路 disassembly, r 上排气、无解体、 After 测i Mass 样品质量(kg)	I discharged sta 电压的 90%,此 no rupture and r 无破裂以及无 Test 式后 Voltage 开路电压(V)	ates. 要求不适用于完全 no fire. 着火现象的发生。 Mass loss 质量损失(%)	全放完电的电池 Residual OCV 剩余电压(%)	result 测试结果	
No. 样品编号 1#	样品质量损 2.Open circui applicable 样品质量损 和电试达。 3.No leakage 样品(电池 Result/测试结 Before Mass 样品质量 (kg) 4.65	失≤0.1%. t voltage not les to test cells and 于路电压应不作 , no venting, no) 应无漏液、无 ま果 re test 式前 Voltage 开路电压(V) 49.920	batteries at ful 丢于试验前开路 disassembly, r 上排气、无解体、 After 测i Mass 样品质量(kg) 4.65	I discharged sta 电压的 90%,此 no rupture and r 无破裂以及无 Test 式后 Voltage 开路电压(V) 49.896	mass loss 质量损失(%)	全放完电的电池 Residual OCV 剩余电压(%)	result 测试结果 P	
No. 样品编号 1# 2#	样品质量损 2.Open circui applicable 样品质量。 3.No leakage 样品(电池 Result/测试结 Before Mass 样品质量(kg) 4.65 4.64	失≤0.1%. t voltage not lest to test cells and 于路电压应不作,no venting, no)应无漏液、无法果 re test 式前 Voltage 开路电压(V) 49.920 49.896	batteries at ful 丢于试验前开路 disassembly, r 上排气、无解体、 After 测计 Mass 样品质量(kg) 4.65 4.64	I discharged sta 电压的 90%,此 no rupture and r 无破裂以及无 TTest 式后 Voltage 开路电压(V) 49.896 49.872	mass loss 质量损失(%)	全放完电的电池 Residual OCV 剩余电压(%) 99.95	result 测试结果 P P	
No. 样品编号 1# 2# 3#	样品质量损 2.Open circui applicable 样品质量损 和电达。 3.No leakage 样品(电池 Result/测试 Before Mass 样品质量(kg) 4.65 4.64 4.66	失≤0.1%. t voltage not lest to test cells and f开路电压应不作,no venting, no) 应无漏液、无法果 re test 式前 Voltage 开路电压(V) 49.920 49.896 49.896	batteries at ful 纸于试验前开路 disassembly, r 上排气、无解体、 After 测计 Mass 样品质量(kg) 4.65 4.64 4.66	I discharged sta 电压的 90%,此 no rupture and r 无破裂以及无 TTest 式后 Voltage 开路电压(V) 49.896 49.872	mass loss 质量损失(%) 0.00 0.00	全放完电的电池 Residual OCV 剩余电压(%) 99.95 99.95	result 测试结果 P P	
No. 样品编号 1# 2# 3# 4#	样品质量损 2.Open circui applicable 样品质量损 和电达。 3.No leakage 样品(电达 Result/测试 Before Mass 样品质量(kg) 4.65 4.64 4.66 4.64	失≤0.1%. t voltage not lest to test cells and f开路电压应不信,no venting, no)应无漏液、无法果 re test 式前 Voltage 开路电压(V) 49.920 49.896 49.896 49.908	batteries at ful 纸于试验前开路 disassembly, r 上排气、无解体、 After 测计 Mass 样品质量(kg) 4.65 4.64 4.66 4.66	I discharged sta 电压的 90%,此 no rupture and r 无破裂以及无 TTest 式后 Voltage 开路电压(V) 49.896 49.872 49.872	mass loss 质量损失(%) 0.00 0.00 0.00	全放完电的电池 Residual OCV 剩余电压(%) 99.95 99.95 99.95	result 测试结果 P P P	
No. 样品编号 1# 2# 3# 4# 5#	样品质量损 2.Open circui applicable 样和电话态。 3.No leakage 样品 电池 Result/测试组 Before Mass 样品质量 (kg) 4.65 4.64 4.66 4.64 4.65	失≤0.1%. t voltage not lest to test cells and 于路电压应不信,no venting, no)应无漏液、无法 voltage 开路电压(V) 49.920 49.896 49.896 49.908 49.920	batteries at ful 纸于试验前开路 disassembly, r 上排气、无解体、 After 测i Mass 样品质量(kg) 4.65 4.64 4.66 4.64 4.65	I discharged sta 电压的 90%,此 no rupture and r 无破裂以及无 TTest 式后 Voltage 开路电压(V) 49.896 49.872 49.872 49.884 49.896	mass loss 质量损失(%) 0.00 0.00 0.00 0.00	全放完电的电池 Residual OCV 剩余电压(%) 99.95 99.95 99.95	result 测试结果 P P P	

Other supplements: Test result "P" decides that the test item passes.

Page 10 / 15 Pages

	Procedure/测试步骤			_
天湖。	Test 5: External short circ	cuit/测试 5:外部短路	7 (an 5"	· •
7 ian Su 7 ian Su 8 38.3.4.5	temperature reaches 57±4° condition with a total extern condition is continued for at has returned to 57±4℃, the to be concluded. 保持试验环境温度稳定在 5℃度下,将其正负极用小于 0.	sted shall be temperature stabilized so C and then the cell or battery shall be nal resistance of less than 0.1 ohm at t least one hour after the cell or battery e cell or battery must be observed for a 7±4℃,以使电芯或电池样品外表温度 .1 欧姆的线路短接,待电芯或电池的分 或电池必须进一步观察 6 个小时才能	e subjected to a short circuit 57±4℃, This short circuit y external case temperature a further six hour for the test 达到 57±4℃, 然后, 在此温 卜表温度恢复到 57±4℃之后	天湖 Tian Su Van Su P
	170℃; 电芯或电池的外壳温度应	ure and no fire during the test and with		天渊 Tian Su Tian Su
	Result 测试结果	天潮 Tian St	天 Will Pian So	9
Sample	e Print St	Max External Temp	in Signal	Test
No. 样品编号	天湖 7ian Su	样品表面最高温度(°C)		result 测试结果
	天湖 Tian Su 天湖		天潮 7ian 5a 天潮	result
样品编号	天湖 7:00:50 天湖 天湖	样品表面最高温度(℃)	天湖 7ian Sa 天湖 天湖	result 测试结果
样品编号	天湖 Tian Su 天湖 天湖	样品表面最高温度(°C) 117.4	天湖 7iar S ^a 天湖 天湖 7iar S ^a	result 测试结果 P
样品编号 1# 2#	天湖 Tian Su 天湖 大湖 Tian Su	样品表面最高温度(℃) 117.4 119.6	天湖 7ian Sa 天湖 7ian Sa 子ian Sa	result 测试结果 P
样品编号 1# 2# 3#	天湖 Tian Su 天湖 Tian Su Tian Su	样品表面最高温度(℃) 117.4 119.6 116.8	天湖 7ian Sa 天湖 7ian Sa - Tian Sa Tian Sa Tian Sa	result 测试结果 P P
样品编号 1# 2# 3# 4#	天湖 Tian Su 天湖 Tian Su Tian Su 天湖 Tian Su 天湖 Tian Su	样品表面最高温度(℃) 117.4 119.6 116.8 124.1	天湖 7ian Su 天湖 7ian Su Yian Su Film Su Film Su	result 测试结果 P P P
样品编号 1# 2# 3# 4# 5#	天湖 Tian Su 天湖 Tian Su Tian Su 天湖 Tian Su 天湖 Tian Su	样品表面最高温度(℃) 117.4 119.6 116.8 124.1 116.9	天湖 7ian Sa 天湖 7ian Sa 王湖 7ian Su Xian Su 7ian Su 7ian Su	result 测试结果 P P P

Page 11 / 15 Pages

38.3.4	Procedure/测试步骤	_
天開 7:an Su	Test 6: Crush\Impact/ 测试 6: 挤压(适用) 撞击(不适用)	7
	Crush 挤压 XM XM	* MA Tion Su
	A cell or component cell is to be crushed between two flat surfaces. The crushing is to be gradual with a speed of approximately 1.5 cm/s at the first point of contact. The crushing is to be continued until the first of the three options below is reached.	(湖 ian Su
	(a) The applied force reaches 13kN±0.78kN;	4
	(b) The voltage of the cell drops by at least 100 mV;	9
	(c) The cell is deformed by 50% or more of its original thickness.	
	Once the maximum pressure has been obtained, the voltage drops by 100mV or more, or the cell is deformed by at least 50% of its original thickness, the pressure shall be released. 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	天湖 7ian Su
	行,直到下面三个选项之一达到为止:	with the second
	(a)作用力达到 13kN±0.78kN;	F VIII Tian 54
	(b)电池芯电压降至少达到 100mV;	
	(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。	
	Impact 撞击 50	X W
38.3.4.6	(applicable to cylindrical cells not less than 18mm in diameter)	Р
期 54. 天) 7ian S	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 ± 0.1 kg mass is to be dropped from a height of 61 ± 2.5 cm at the intersection of the bar and sample in a controlled manner using a near frictionless, vertical sliding track or channel with minimal drag on the falling mass. The vertical track or channel used to guide the falling mass shall be oriented 90 degrees from the horizontal supporting surface.	天湖 7ian Su N Su
	The test sample is to be impacted with its longitudinal axis parallel to the flat surface and perpendicular to the longitudinal axis of the 15.8 mm ± 0.1 mm diameter curved surface lying across the centre of the test sample. Each sample is to be subjected to only a single impact.	Fian 5
	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.	天明 Tian Su
	(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。	报 54
	Requirement/标准要求:	1 Linn
	1.Cells and component cells meet this requirement if their external temperature does not exceed 170℃; 电芯的外壳温度应不超过 170℃;	天湖 Tian Sa
	电心的外况温度应不超过 170 C; 2. No disassembly, no fire during the test and within six hours after this test.	1
	试验后 6 小时内无解体、无起火。	(%)

Page 12 / 15 Pages

	Result 测试结果	夫例 Tran Su Fran Su	Tion >"
Sample No. 样品编号	OCV prior to test 试验前电压(V)	Max External Temp 样品表面最高温度(℃)	Test result 测试结果
9#	7.00 Su 3.744 Film Su	24.7	P-VA Tian Su
10#	3.729	24.4 71.45 Su	Р
11#	3.756	25.2	₹. P
12#	3.727	24.6	Р
13#	3.734	25.1	Р
14#	3.726	24.4	Р
15#	3.758	25.1	Pian Su
16#	3.744	24.7	Р
17#	3.727	25.3	7 in P
18#	3.736 £ 1 Su	25.4 2m Su	Р

Other supplements: Test result "P" decides that the test item passes.



Page 13 / 15 Pages

38.3.4	Procedure/测试步骤	_		
天湖 7iau Su 7iau Su 38.3.4.7 湖 7iau Su 8	Test 7: Overcharge/测试 7: 过度充电			
	When the manufacturer's recommended charge voltage is not more than 18V, the minimum voltage of the test shall be the lesser of two times the maximum charge voltage of the or 22V, whichever is less. When the manufacturer's recommended charge voltage is more than 18V, the charging voltage of the test shall be 1.2 times maximum charge voltage. The charging current is 2 times of the maximum charging current recommended by the manufacturer. 如果厂家推荐的充电电压不超过 18V,本测试的最小充电电压应该是两倍的厂家标定最大充电电压或者是 22V,取其中较小者。如果厂家推荐的充电电压超过 18V,充电电压应该为 1.2 倍的厂家标定最大充电电压。充电电流为厂家推荐的最大充电电流 2 倍。	N/A 不适月		
	Requirements/标准要求: No disassembly and no fire during the test and within seven days after the test. 试验样品在试验中和试验后 7 天内,应无解体和无起火现象发生。	天) Tian		
	Result 测试结果			

其他补充:测试结果"N/A"代表不适用。

Page 14 / 15 Pages

38.3.4	Procedure/测试步骤	- 440	Tian Su	天	_
Filan Su Filan Su	Test 8: Forced discharge/测	则试 8: 强制放电	£	天湖	#A
	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, Each cell shall be forced discharged for a time interval(in hours) equal to its rated capacity divided by the initial test current(in ampere). 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。 Requirements/标准要求: No disassembly and no fire during the test and within seven days after the test. 试验样品在试验中和试验后7天内,应无解体和无起火现象发生。				
	Result 测试结果	Tias-	天 開 7ian Sa	Tian 5" Right Tian 5" Right Tian 5"	Fian Su
Sample No. 样品编号	OCV prior to test 试验前电压(V)	Test result 测试结果	Sample No. 样品编号	OCV prior to test 试验前电压(V)	Test resul 测试结果
19#	3.147	Files Su P	29#	3.143	Prim
A Date City	3.126	Р	30#	3.136	Р
20#	0.120				
20#	3.117	Р	31#	3.126	F. P.
	WIN TOWN	P P	31# 32#	3.126 3.117	P P
21#	3.117	5 k	\$ \M\\ 5" 5"		7ia# 5"
21#	3.117	PM	32#	3.117	P
21# 22# 23#	3.117 3.137 3.126	P	32#	3.117	P P
21# 22# 23# 24#	3.117 3.137 3.126 3.128	P P	32# 33# 34#	3.117 3.124 3.118	P P
21# 22# 23# 24# 25#	3.117 3.137 3.126 3.128 3.134	P P P	32# 33# 34# 35#	3.117 3.124 3.118 3.124	P P P P

Page 15 / 15 Pages

STATEMENTS

声明

- 1. The test report is invalid without the official stamp of Tiansu. 本报告无检测单位印章无效。
- 2. Nobody is allowed to photocopy or partly photocopy this test report without written permission of Tiansu.

未经本试验室书面同意,不得部分地复制本报告。

- 3. The test report is invalid without the signatures of Ratifier, Reviewer and Testing engineer. 本报告无批准人、审核人及鉴定人签名无效。
- 4. The test report is invalid if altered. 本报告涂改无效。
- 5. Objections to the test report must be submitted to Tiansu within 15 days. 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。
- 6. The test report is valid for the tested samples only. 本报告仅与送检样品有关。

