

TEST REPORT

报告编号 : WTS18S01100863-1B

申请商 博科能源系统(深圳)有限公司

Applicant ICON ENERGY SYSTEM (SHENZHEN) CO.,LTD

申请商地址 深圳市龙华新区观澜街道上坑社区观清路 4 号高新技术园区金美威第二

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Longhua New District, Shenzhen

制造商 博科能源系统(深圳)有限公司

Manufacturer: ICON ENERGY SYSTEM (SHENZHEN) CO.,LTD

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Park, No.4 Guanging road, Shangkeng Community, Guanlan Street,

Longhua New District, Shenzhen

产品型号

Model : 643463

总共页数

□ 大贝敦 : 16 pages

Total pages.....

依据标准 关于危险品货物运输的建议书 试验和标准手册 第六修订版 第 38.3 节

Transport of Dangerous Goods, Manual of Test and Criteria

(ST/SG/AC.10/11Rev.6 Section 38.3)

发布日期 : 2018-01-19 Date of Issue

Test Result: The submitted samples comply with the above standards

备注:此报告中出示的结果仅对测试样品负责;未经本公司书面批准,不得复制本报告;本报告经测试机构编辑者签名和批准人签名并加盖本公司公章后方有效。

Remarks: The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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产品一般信息 General product information:	理聚合物电池	
产品分类 /Classification	上i Polymer Battery	
型号 /Model:	643463	
额定值/Ratings	7.4V 1500mAh 11.1Wh	
商标/Trade mark	And my my the	
最大充电电压/Max. charge voltage:	8.4V	
最大充电电流/Max. charge current	1500mA	
标准充电电流/Standard charge current:	750mA	
最大放电电流/Max. discharge current:	1500mA	
标准放电电流/Standard discharge current:	750mA	
放电截止电压/Discharge cut-off voltage:	6.0V	
尺寸/Dimension	79.0mm×41.2mm×16.5mm	
报告中可能用到的结论标识 Possible test case v	verdicts:	
测试项目不适用该产品 test case does not apply to the test object	不适用 N/A	
测试项目符合标准的要求 test object does meet the requirement	合格 P(ass)	
测试项目不符合标准的要求 test object does not meet the requirement	不合格 F(ail)	
测试 Testing:	White Milit Mar	
样品接受日期 Date of receipt of test item	2018-01-02	
测试日期 Date(s) of performance of test	2018-01-03 to 2018-01-15	
测试结论 Test Conclusion:	THE WILL WILL WILL WILL W	

测试根据标准《关于危险品货物运输的建议书 试验和标准手册》第六修订版 第 38.3 节 (ST/SG/AC.10/11Rev.6 Section 38.3)进行

测试结果: 合格

The batteries are tested according to Section 38.3 of the Sixth revised edition of Recommendations on the Transport of Dangerous Goods, Manual of Test and Criteria (ST/SG/AC.10/11/Rev.6). Test Result: Pass.



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测试项目 Test itel	样品 Sample	样品状态 Samples' State		
T.1 高空模拟 Altitude simulation	UNITER WHITEE WA	Titt MULT V	t water with a reliable life of the	
T2.温度试验 Thermal test		B01#-B04#	一次循环充放电完全充电状态 At first cycle, in fully charged state	
T3.振动 Vibration	B01#-B08#	Willet Mile	MILIER MILIE MILL WAL WAL WAL WA	
T4.冲击 Shock T5. 外部短路 External short circuit		B05#-B08#	五十个交替充电放电周期后完全充电状态 After fifty cycles ending in fully charged	
		TEX WILLER	state	
T.6 撞击/挤压 Impact / Crush	C01#-C05#		周期 50%设计标定电容量状态 at 50% of the design rated capacity	
T.7 过充	B09#-B12#	一次循环充放电完全充电状态 At first cycle, in fully charged state		
Overcharge	B13#-B16#	五十个交替充电放电周期后完全充电状态 After fifty cycles ending in fully charged state		
T.8 强制放电	C06#-C15#	一次充电放电周期完全放电状态 At first cycle, in fully discharged state		
Forced discharge	C16#-C25#		电周期后完全放电状态 es ending in fully discharged state	

备注:

测试环境条件,环境温度 20℃-25℃,环境湿度: 45%-75%

分包测试: 不适用

Remarks:

Test environment condition, ambient temperature 20 ℃-25 ℃, ambient humidity 45%-75%

Subcontracted test condition: N/A



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LIFE	ST/SG/AC	.10/11Rev.6 Section 38.3	BUT THE THE	IEK NITE
条款 Clause	测试要求 Requirement-Test	iek white white wh	结果评判 Result-Remark	结论 Verdict
38.3.4	程序 /Procedure	WILL WILLE	Mr. M. C. Mul.	Р
LIFE WALTER	小型电芯或电池必须按顺序进行 to T.5 shall be conducted in sec or battery.		unliek whitek whitek	Mr. P M
Write a	试验 6 和 8 应使用未另外试验过的电芯或电池/Test T.6 and T.8 shall be conducted using not otherwise tested cells or batteries.		TEX WILLER WILLER WI	P
White White	试验 7 使用原先在试验 1 至 5 中行/Test T.7 may be conducted batteries previously used in Tepurposes of testing on cycled be	using undamaged sts T.1 to T.5 for	ex united white white white white white	N/A
质量损失 Mass loss	用以下测试步骤 Following procedure is provide	WILL MALL MALL	Mr. Mr. M.	Р
WALTER WAL	质量损失(%)=(M1-M2)/M 此式中 M1 是试验前的质量,M 质量损失不超过下表所列的数值 Mass loss(%)=(M1-M2)/M1*10 Where M1 is the mass before t mass after the test. When mass the values in below table, it sha mass loss"	1*100 12 是试验后的质量。如果 直,即为"无质量损失" 0 he test and M2 is the s loss does not exceed	TEX WHITEK WHITEK WHITE	ni wn sex wais Yanisex waisex
LIE WHILE	电芯或电池质量 M Mass M of cell or battery M<1g 1g≤M≤75g M>75g	质量损失限制 Mass loss limit 0.5% 0.2% 0.1%	Whitek whitek whitek	white w
38.3.4.1		: Altitude Simulation	at alt set s	P
38.3.4.1.1	目的/Purpose	. Altitude Officiation	Mill Mill Mill	P
(10)	本试验模拟在低压条件下的空运	Z/This test simulates air	TEL JES	مانادلا
ne m	transport under low-pressure c	onditions.	TI WILL WILL	711 1
38.3.4.1.2	试验程序/Test procedure	An in	at let	Р
711	存储气压/Stored at a pressure	STE OFF	11.6 kPa	n an
et Jet	环境温度/Ambient temperature	(20 ± 5°C)	23.5℃	JEH JE
1/12 1/	存储时间/Stored times(≥ 6 ho	ours)	6 hours	-5/1
38.3.4.1.3	要求/Requirement	1, 24, 25, 3	e of the se	P
MITEK WILTER SEK WALTER WALTER WALTER	无渗漏、无排气、无解体、无破试验电芯或电池在试验后的开路一试验前电压的 90%,电压的要的试验电芯和电池 / No leakage disassembly, no rupture and no circuit voltage of each test cell not less than 90% of its voltage this procedure. The requirement applicable to test cells and discharged states.	R电压不小于其在进行这 求不适用与完全放电状态 e, no venting, no of fire and the open or battery after testing is e immediately prior to not relating to voltage is	无渗漏、无排气、无解体、无破裂和无起火,数据见表 1 / No leakage, no venting, no disassembly, no rupture and no fire. The data see Table 1	WALTER WALTER



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NIT II	ST/SG/AC.10/11Rev.6 Section 38.		
条款 Clause	测试要求 Requirement-Test	结果评判 Result-Remark	结论 Verdict
	we will the in		. (1)
38.3.4.2	试验 2 温度试验/ Test T.2: Thermal Test	Mr. Mr. Mr.	Р
38.3.4.2.1	目的/Purpose	TEX TEX LITER	
ik mritek a	本试验评估电芯和电池的密封完善性和内部电连接,试验是利用迅速和极端的温度变化进行/This test assesses cell and battery seal integrity and internal electrical connections. The test is conducted using rapid and extreme temperature changes.	TEX MUTER MUTER M	itek _T ori k te
38.3.4.2.2	试验程序/Test procedure	e with white whi	P
NLTEK WALTE	试验温度和存储时间/ Test temperature and stored hours	1) 72±2°C, ≥6h 2) -40±2°C, ≥6h	MITEH.
TEX WALTER	两个极端试验温度的最大间隔时间/The maximum time interval	极端温度之间间隔时间 ≤30min /Between test temperature extremes is ≤30 minutes.	WILEX M
WALLE W	测试时间/ Test times	重复 10 次/Repeated 10 times	ie. ^M Vr
WALTER WAL	所有电芯或电池在环境温度(20±5℃)下存放 24 小/After which all test cells and batteries are to be stored for 24 hours at ambient temperature (20±5℃).	环境温度/Amnient temperature 24.0℃	VNU TIEN
lifek milie ek ifek	对于大型电芯或电池,暴露于极端试验温度的时间至少应为 12 小时/For large cells and batteries the duration of exposure to the test temperature extremes should be at least 12 hours	小型电池/ Small battery	N/A
38.3.4.2.3	要求/Requirement	Lite Wall Will W	P
Whitek whitek	无渗漏、无排气、无解体、无破裂和无起火,并且每个试验电芯或电池在试验后的开路电压不小于其在进行这一试验前电压的 90%,电压的要求不适用与完全放电状态的试验电芯和电池 / No leakage, no venting, no disassembly, no rupture and no fire and the open circuit voltage of each test cell or battery after testing is not less than 90% of its voltage immediately prior to this procedure. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states.	无渗漏、无排气、无解体、无破裂和无起火;数据见表 2/ No leakage, no venting, no disassembly, no rupture and no fire. The data see Table 2	White was a second
38.3.4.3	试验 3 振动 /Test T.3: Vibration	r mr m	Р
38.3.4.3.1	目的/ Purpose	I LIE' SLIET NLI	Р
TEK TE	本试验模拟运输过程中的振动/This test simulates vibration during transport.		T-X
38.3.4.3.2	测试程序/ Test procedure	White White	Р
IEK WILLER	电芯和电池以不使电芯变形且能正确地传播振动的方式 紧固在振动机平面上/ Cells and batteries are firmly secured to the platform of the vibration machine without distorting the cells in such a manner as to faithfully transmit the vibration.	NITER WHITER WHITER W	ALTER WA



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	ST/SG/AC.10/11Rev.6 Section 38.	3 It TEX TEX	
条款 Clause	测试要求 Requirement-Test	结果评判 Result-Remark	结论 Verdict
itex white	振动应以正弦波形振动,频率在 7Hz 和 200Hz 之间摆动再回到 7Hz 的对数扫频为时 15min/ The vibration shall be a sinusoidal waveform with a logarithmic sweep between 7Hz and 200Hz and back to 7Hz traversed in 15minutes.	white white white	mility P
whitek whitek	从 7HZ 开始保持 1 g _n 的最大加速度直到频率达到 18HZ,然后将振幅保持在 0.8mm(总偏移 1.6mm)并增加 频率直到最大加速度达到 8 g _n (频率约为 50HZ)。将最 大加速度保持在 8 g _n 直到频率增加到 200HZ /From 7 Hz to a peak acceleration of 1 g _n is maintained until 18Hz is reached. The amplitude is then maintained at 0.8mm (1.6mm total excursion) and the frequency increased until a peak acceleration of 8 g _n occurs (approximately 50 Hz). A peak acceleration of 8 g _n is then maintained until the frequency is increased to 200 Hz	EX WALTER WALTER WALTER	yn i P ^X
whitek and	振动须对三个互相垂直的电池安装方位的每一方向都重复进行 12 次,总共 3 小时。其中一个方向必须与端面垂直/This cycle shall be repeated 12 times for a total of 3 hours for each of three mutually perpendicular mounting positions of the cell. One of the directions of vibration must be perpendicular to the terminal face.	TEK WATER WATER WATE	Р
38.3.4.3.3	要求/ Requirement	wer we me	Р
ET WHITE WAS	试验中和试验后无渗漏、无排气、无解体、无破裂和无起火,并且每个试验电芯或电池在第三个垂直安装方位上的试验后的立即测得开路电压不小于其在进行这一试验前电压的 90%,电压的要求不适用与完全放电状态的试验电芯和电池/No leakage, no venting, no disassembly, no rupture and no fire during the test and after the test and the open circuit voltage of each test cell or battery directly after testing in its third perpendicular mounting position is not less than 90% of its voltage immediately prior to this procedure. The requirement relating to voltage is not applicable to test cells and batteries at fully discharged states.	无渗漏、无排气、无解体、无破裂和无起火,数据见表 3/ No leakage, no venting, no disassembly, no rupture and no fire during the test .The data see Table 3	P. A.
38.3.4.4	试验 4 冲击/ Test T.4: Shock	in mi mi m	Р
38.3.4.4.1	目的/ Purpose	et tex tex ti	Р
ALTER ANTE	本试验评估电池和电芯抵抗累计冲击的稳健性/This test assesses the robustness of cells and batteries against cumulative shocks	The street with	MITH
38.3.4.4.2	测试程序 /Test procedure	m m m	Р
WALTER	试验电芯和电池用坚硬的支架固定在试验装置上,支架 支撑着每个试验电池的所有安装面;/Test cells and batteries shall be secured to the testing machine by means of a rigid mount which will support all mounting surfaces of each test battery.	TEK WITTER WITTER	EX P



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alter or	Life while	ST/SG/AC.10/11Rev	.6 Section 38.		ie ni
条款 Clause	测试要求	nt Toot		结果评判 Result-Remark	结论 Verdic
Clause	Requireme	nt-Test	* *	Result-Remark	verdic
TEK MUTER	正弦波冲击 shock of pe	值加速度 150 g _n 和脉冲持续时 /Each cell shall be subjected to eak acceleration of 150 g _n and 6milliseconds.	a half-sine	WHILE MALLER MALLER	N/A
MULLER OF	的半正弦波 subjected to 50 g _n and p	受峰值加速度 50 g _n 和脉冲持续冲击/Alternatively, large cells no a half-sine shock of peak accoulse duration of 11 millisecond	nay be celeration of s.	itek writek writek w	N/A
WITEX WALTEX	的质量。小 11ms。以T 度/Each ba of peak acc battery. The small batter The formula	经受半正弦波冲击的峰值加速度型电池的脉冲持续时间为 6ms, 型电池的脉冲持续时间为 6ms, 提供的公式用来计算适合的最ttery shall be subjected to a haseleration depending on the mase pulse duration shall be 6 milling ries and 11 milliseconds for larges below are provide to calculate minimum peak accelerations.	大型电池为 小峰值加速 If-sine shock ass of the seconds for ge batteries.	Small battery, pulse duration 6ms	MILIER MILIEP MILIEP MILIEP MILIER
JUNITER WILL	Small batteries	Minimum peak acceleration 150 g _n or result of formula Acceleration(g_n)= $\sqrt{\frac{180850}{mes^2}}$ Whichever is smaller	Pulse duration 6ms	t whitek whitek whitek	white white
	Large batteries	50 g _n or result of formula Acceleration(g_n)= $\sqrt{\frac{19999}{19999}}$ Whichever is smaller	11ms	ittek mutek mutek m	THE ON
riek mrtiek	方向经受三 受 18 次冲式 three shock shocks in th mutually pe	电池须在三个互相垂直的电芯多次冲击,接着反方向经受三次冲击/接着反方向经受三次冲击/Each cell or battery shall be as in the positive direction and the negative direction in each of prendicular mounting positions or a total of 18 shocks.	中击,总共经 subjected to to three f three	TEX WITER	WALER O
38.3.4.4.3	要求/Requi		in the	71 10	μP
whitek whi ex whitek	试验电芯或 一试验前电 态的试验电 disassembl circuit volta not less tha this proced	排气、无解体、无破裂和无起生电池在试验后的开路电压不小玩压的 90%,电压的要求不适用压的电池/No leakage, no ventiy, no rupture and no fire and the ge of each test cell or battery as in 90% of its voltage immediate ure. The requirement relating to ble to test cells and batteries as states.	F其在进行这 与完全放电状 ng, no ne open after testing is ely prior to o voltage is	无渗漏、无排气、无解体、无破裂和无起火,数据见表 4 /No leakage, no venting, no disassembly, no rupture and no fire. The data see Table 4	
20 2 4 F	÷PiΔ E H ÷n	佐成 /Tost T.F. Evternal Char	t Circuit		
38.3.4.5		短路 /Test T.5: External Shor	Circuit	TE WITE WILL VIN	P
38.3.4.5.1	目的/ Purpo		111, 11,		Р

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本试验模拟外部短路/This test simulates an external



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LIET	ST/SG/AC.10/11Rev.6 Section 38.3			
条款 Clause	测试要求 Requirement-Test	结果评判 Result-Remark	结论 Verdict	
mer in	short circuit.	Marie Maria Mula	11/2	
38.3.4.5.2	试验程序 /Test procedure	TEX TEX TEX	NI P	
TEK WHITEK	电芯或电池须加热一段时间并且外壳稳定在温度 57± 4℃下后开始测试。根据电芯或电池的尺寸,评估和记录加热时间。如果此评估值不可行,小型电芯或电池需至少 6h,大电芯或电池需 12h//The cell or battery to be tested shall be heated for a period of time necessary to reach a homogeneous stabilized temperature 57±4℃, measured on the external case. This period of time depends on the size and design of the cell or battery and should be assessed and documented. If this assessment is not feasible, the exposure time shall be at least 6 hours for small cells and small batteries, and 12 hours for large cells and large batteries.	LIEK WALTER WALT	TEK WALTER WALTER WALTER	
A MULLER M	在 57±4℃温度下,电芯或电池需经受外部电阻 0.1ohm 的短路试验/Then the cell or battery at 57±4℃ shall be subjected to one short circuit condition with a total external resistance of less than 0.1 ohm.	0.086 ohm	P	
aint white Rifex white fex whitex nifex w	电芯或电池外部壳体温度恢复到 57±4℃后,短路需持续至少 1 小时,或大型电池,壳体温度值下降测试中最大温升的一半,并且保持在这个值以下/This short circuit condition is continued for at least one hour after the cell or battery external case temperature has returned to 57±4℃, or in the case of the large batteries, has decreased by half of the maximum temperature increase observed during the test and remains below that value.	White whitek whi	WALTER WALTER	
38.3.4.5.3	要求/ Requirement	MUT MU MI	Р	
oniter on the state of the stat	外壳温度不超过 170℃,并且在试验过程中及试验后 6 小时内无解体、无破裂、无起火 Cells and batteries external temperature does not exceed 170℃ and there is no disassembly, no rupture and no fire during the test and within six hours after this test.	试验过程中及试验后 6 小时内无解体、无破 裂、无起火,数据见 表 5/No disassembly, no fire during the test and within six hours after this test. The data see Table 5.	WALTE WALTE	

38.3.4.6	试验 6 撞击/挤压 Test T.6: Impact / Crush	White White white	△,b
38.3.4.6.1	目的 /Purpose	A ST SET	Р
LEK MUTEK	本试验模拟撞击或挤压等可能造成内部短路的机械性破坏/These tests simulate mechanical abuse from an impact or crush that may result in an internal short circuit.	White white whitek w	WATER WAL
38.3.4.6.2	试验程序-撞击 (适用于直径不小于18毫米的圆柱形电芯)/Test procedure – Impact (applicable to cylindrical cells not less than 18.0 mm in diameter)	TEX WATER WATER WAT	N/A
NALTEK NALT	将式样电池或元件电芯放在平坦光滑的表面上。一根 316 型不锈钢棒横放在试样中心,钢棒直径 15.8 mm ±	- citek outek mute	N/A

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ST/SG/AC.10/11Rev.6 Section 38.3			
条款 Clause	测试要求 Requirement-Test	结果评判 Result-Remark	结论 Verdict
WALL WALTER WALT WALTER WALT WALTER W	0.1mm,长度至少 6cm,或电池最长端的尺度,取二者之长者。将一块 9.1 kg ±0.1kg 的重锤从 61 ± 2.5cm 高处跌落到钢棒和试样交叉处,使用一个几乎没有摩擦的,对落体重锤阻力最小的垂直轨道或管道加以控制。垂直管道或管道用于引导落锤沿与水平支撑表面呈 90°落下/The test sample cell or component cell is to be placed on a flat smooth surface. A 15.8 mm ± 0.1mm 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	Whitek wh	UNLIEK UNLIEK WILLEK WI
Whitek Whitek	surface. 接受撞击的试样,纵轴应与平坦表面平行并与横放在试样中心的直径 15.8 mm ± 0.1mm 弯曲表面的纵轴垂直;每一个试样只经受一次撞击/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 ± 0.1mm diameter curved surface lying across the centre of the test sample. Each sample is to be subjected to only a single impact.	Whitek whitek whitek	N/A
38.3.4.6.3	试验程序-挤压 (适用于棱柱形、袋装、硬币/纽扣电芯和直径小于18mm的圆柱形电芯)/Test Procedure – Crush (applicable to prismatic, pouch, coin/button cells and cylindrical cells less than 18.0 mm in diameter)	EX MULTEX MULTER MUL	EX PLIE
anciek was Ciek waciek Anciek	将电池或元件电芯放在两个平面之间挤压,挤压力度逐渐加大,在第一个接触点上的速度大约 1.5cm/s。挤压持续进行,直到出现三种情况之一: /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.	TEK OLIEK OLIEK	WALTER MITER TER WALTE
LIEK 10	施加的力量达到 13 kN ± 0.78kN The applied force reaches 13 kN ± 0.78 kN;	⊠Reach this condition	Pier
Till I'	电池的电压下降至少 100mV The voltage of the cell drops by at least 100 mV;	☐Reach this condition	N/A
ivr. Mur.	电池变形达原始厚度的 50%或以上/The cell is deformed by 50% or more of its original thickness.	Reach this condition	N/A
TEK WALTER	每个测试的电池或元件电芯只做一次挤压试验/Each test cell or component cell is to be subjected to one crush only.	NITEK WHITEK WHITEK W	Puli
WALTER	试验样品需观察 6 小时/The test samples shall be observed for a further 6h	IEK INLIEK MALIEK MAY	PLIT
LIEK O	试验应使用之前未做过其他试验的电池或元件电芯进行/The test shall be conducted using test cells or	- let let le	PET



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	ST/SG/AC.10/11Rev.6 Section 38.	3 the let of	
条款 Clause	测试要求 Requirement-Test	结果评判 Result-Remark	结论 Verdict
	component cells that have not previously been subjected to other tests.	Must miss must	- Cit
38.3.4.6.4	要求/ Requirement	ALTER WITE WALLE	υ [©] Ρ ν
MULIER AND	外壳温度不超过 170 °C,并且在试验过程中及试验后 6 小时内无解体、无破裂、无起火/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.	在试验过程中及试验后 6 小时内无解体、无破 裂、无起火;数据见表 6 /No disassembly and no fire during the test and within six hours after this test. The data see Table 6	LTEK WA
38.3.4.7	试验 7 过度充电 /Test T.7: Overcharge	t it it	P
38.3.4.7.1	目的 /Purpose	alle with wall of	PW

38.3.4.7	试验 7 过度充电 /Test T.7: Overcharge	at at at	P
38.3.4.7.1	目的 /Purpose	Will My A	Р
MULIEK	本试验评估可充电电池承受过度充电状况的能力/This test evaluates the ability of a rechargeable battery to withstand an overcharge condition.	TEK MUTEK MUTEK MU	Ex 201
38.3.4.7.2	试验程序/Test procedure	t at alt de	Р
niek "Ville	充电电流必须是制造商建议的最大持续充电电流的两倍 The charge current shall be twice the manufacturer's recommended maximum continuous charge current.	1500*2=3000mA	P
it it	试验的最小电压如下: /The minimum voltage of the test shall be as follows:	mr mr m	Р
WALTEX WA	a)制造商建议的充电电压不大于 18V 时,试验的最小电压是电池最大充电电压的两倍或 22V 两者中的较小者 /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 battery or 22V.	16.8V	P
LEK MUTER	b) 制造商建议的充电电压大于 18V 时,试验的最小电压应为最大充电电压的 1.2 倍/When the manufacturer's recommended charge voltage is not more than 18V,the minimum voltage of the test shall be 1.2 times the maximum charge voltage.	I VIII WILLER	N/A
	试验环境温度/ Ambient temperature.	22.9℃	16. <u>-1</u> 1
	试验的进行时间/ The duration of the test.	24h	
38.3.4.7.3	要求 /Requirement	It I TEN STEEL STEEL	Р
nitek waite Ek waitek	充电电池在试验过程中和试验后 7 天内无解体,无起火/Rechargeable battery is no disassembly and no fire during the test and within seven days after the test.	试验过程中和试验后 7 天内无解体,无起火; 数据见表 7/No disassembly and no fire during the test within seven days after the test. The data see Table 7	MALITER LITER P



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	ST/SG/AC.10/11Rev.6 Section 38.3				
条款 Clause	测试要求 Requirement-Test	结果评判 Result-Remark	结论 Verdict		
38.3.4.8	试验 8 强制放电 Test 8: Forced discharge	Muss my mar	Р		
38.3.4.8.1	目的 Purpose	TEX TEX TEX	P		
ex Mariex	本试验评估原电池或充电电池承受强制放电状况的能力 /This test evaluates the ability of a primary or a rechargeable cell to withstand a forced discharge condition.	riek mriek mviek m	riek ni		
38.3.4.8.2	试验程序 Test procedure	1 1 1 1 1	P		
Whitek Murik	每个电池应在环境温度下与 12V 直流电电源串联和起始电流等于制造商给定的最大放电电流的条件强制放 /Each cell shall be forced discharged at ambient temperature by connecting it in series with a 12 V DC, power supply at an initial current equal to the maximum discharge current specified by the manufacturer.	whitek whitek whitek	MALTER WA		
K WALTEK WALTER WALTER WALTER	将适当大小和额定值的电阻负荷与试验电池串联,计算得给定的放电电流。对每个电池进行强制放电,放电时间(小时)应等于其额定容量除以初始试验电流(安培)/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).	TEK WALTER WALTER WALTER	SEK WALTE WARTEK WALTEK		
38.3.4.8.3	要求/Requirement	at at let	Р		
whitek wh	原电池或充电电池在试验过程中和试验后 7 天内无解体,无起火/Primary or rechargeable cells is no disassembly and no fire during the test within seven days after the test.	试验过程中和试验后 7 天内无解体,无起火; 数据见表 8/There is no disassembly and no fire during the test within seven days after the test. The data see Table 8	et mite Pet mitet		







表 1: 高空模拟/ Table1: Altitude simulation

"In	质	质量/Mass(g)	et jet	n. i e	n 24		
编号/ No.	试验前 M1 /Before test M1	试验后 M2 /After test M2	质量损失 /Mss loss (%)	试验前 OCV1 /Before test OCV1	试验后 OCV2 /After test OCV2	OCV2/OC V1 (%)	判定/ Verdict
B01#	75.762	75.758	0.005	8.364	8.360	99.95	<i>™</i> P <i>™</i>
B02#	75.745	75.743	0.003	8.365	8.361	99.95	Р
B03#	75.762	75.761	0.001	8.366	8.362	99.95	Р
B04#	75.742	75.740	0.003	8.368	8.365	99.96	n P
B05#	75.746	75.743	0.004	8.369	8.364	99.94	LP X
B06#	75.727	75.721	0.008	8.365	8.362	99.96	P
B07#	75.731	75.729	0.003	8.363	8.360	99.96	Р
B08#	75.729	75.727	0.003	8.367	8.363	99.95	+ P+

表 2: 温度测试/ Table 2: Thermal test

编号/		质量/Mass(g)	MUT. MI	电	م د اماد		
No.	试验前 M1 /Before test	试验后 M2 /After test	质量损失 /Mss loss	试验前 OCV1 /Before test	试验后 OCV2 /After test	OCV2/O CV1	判定 /Ve rdict
	M1	M2	(%)	OCV1	OCV2	(%)	inti ant
B01#	75.758	75.745	0.017	8.360	8.323	99.56	Р
B02#	75.743	75.738	0.007	8.361	8.304	99.32	P
B03#	75.761	75.746	0.020	8.362	8.313	99.41	Р
B04#	75.740	75.734	0.008	8.365	8.315	99.40	Р
B05#	75.743	75.727	0.021	8.364	8.320	99.47	P
B06#	75.721	75.716	0.007	8.362	8.310	99.38	WP W
B07#	75.729	75.721	0.011	8.360	8.317	99.49	Р
B08#	75.727	75.714	0.017	8.363	8.325	99.55	P

表 3 振动/ Table 3: Vibration

10 JK	y rable 3. Vibi	ation						
		质量/Mass(g)		电	NIET MALTE			
编号 /No.	试验前 M1 /Before test M1	试验后 M2 质量损失 /After test /Mss loss M2 (%)		试验前 OCV1 /Before test OCV1	试验后 OCV2 After test OCV2	OCV2/OC V1 (%)	判定 /Verdict	
B01#	75.745	75.742	0.004	8.323	8.322	99.99	P	
B02#	75.738	75.731	0.009	8.304	8.303	99.99	P	
B03#	75.746	75.744	0.003	8.313	8.313	100.00	An B	
B04#	75.734	75.734	0.000	8.315	8.314	99.99	Р	
B05#	75.727	75.724	0.004	8.320	8.320	100.00	LIT P NI	
B06#	75.716	75.715	0.001	8.310	8.308	99.98	v, b _v	
B07#	75.721	75.720	0.001	8.317	8.317	100.00	→ P	
B08#	75.714	75.712	0.003	8.325	8.325	100.00	P	



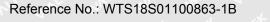




表 4 冲击/ Table 4: Shock

m.		质量/Mass(g)	TEX JEX	MITE WITH	in an		
编号/ No.	试验前 M1 /Before test M1	试验后 M2 /After test M2	质量损失 /Mss loss (%)	试验前 OCV1 /Before test OCV1	试验后 OCV2 /After test OCV2	OCV2/OC V1 (%)	判定/ Verdict
B01#	75.742	75.742	0.000	8.322	8.322	100.00	N P W
B02#	75.731	75.730	0.001	8.303	8.303	100.00	Р
B03#	75.744	75.744	0.000	8.313	8.313	100.00	Ρ
B04#	75.734	75.734	0.000	8.314	8.314	100.00	n Pr
B05#	75.724	75.723	0.001	8.320	8.320	100.00	LP +
B06#	75.715	75.715	0.000	8.308	8.308	100.00	P
B07#	75.720	75.719	0.001	8.317	8.317	100.00	Р
B08#	75.712	75.711	0.001	8.325	8.325	100.00	→ P→

表 5 外部短路/ Table 5:External short circuit

编号/ No.	壳体最高温度/ Maximum case temperature(°C)	判定/ Verdict		
B01#	55.3	Р		
B02#	55.2	A PAT S		
B03#	55.4	P W		
B04#	55.3	Р		
B05#	55.3	Per de		
B06#	55.2	IN ALL WATER		
B07#	55.3	Р		
B08#	55.3	P CP		

表 6 Table 6 🗌 撞击 Impact 🖂挤压 Crush

编号/ No.	壳体最高温度/ Maximum case temperature(°C)	判定/ Verdict
C01#	24.0	P. L.
C02#	23.9	n nb
C03#	25.0	Pt At
C04#	25.3	ALTE OF APLICATION
C05#	23.8	In D

表 7 过度充电 / Table 7: Overcharge

	编号/ No.	B09#	B10#	B11#	B12#	B13#	B14#	B15#	B16#
1	判定/ Verdict	INLIE WA	Р	Р	P E	ITP I	EK PITEK	WILL P WY	BALTE

表 8 强制放电/ Table 8:Forced discharge

编号/ N	o. C06#	C07#	C08#	C09#	C10#	C11#	C12#	C13#	C14#	C15#
判定 /Verdic	et P	WP	nn P	Р	Р	P	P	P	P	NITP N
编号/ N	o. C16#	C17#	C18#	C19#	C20#	C21#	C22#	C23#	C24#	C25#
判定 /Verdic		VII P M	Р	P	Р	P	P	ALT P	TER	Part



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Li Polymer Battery 7.4V1500mAh 11.1Wh

Model Name: 643463

Photo 1



Photo 2



Photo 3

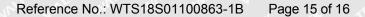






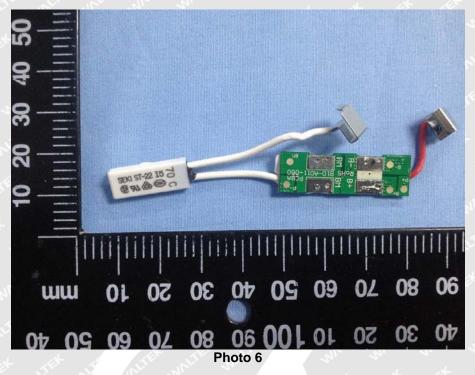
Photo 4

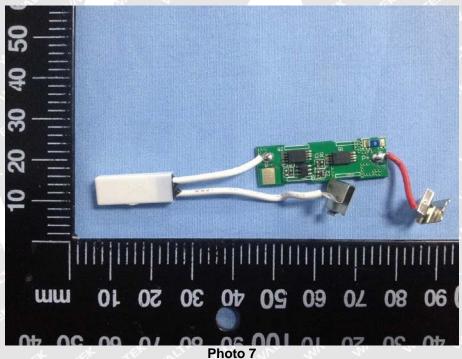


Photo 5









===== End of Report =====