

# **TEST REPORT**

报告编号 WTS18S04108207B Reference No.

申请商 深圳市泰量电子有限公司

Applicant ..... Shenzhen Tenerg Electronic Co., Ltd.

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Room 638, Hengrun building, No.58, Minzhi Road, Longhua Town, Baoan Address .....

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制造商 东莞市海量能源科技有限公司 Manufacturer ..... DongGuan Hilion Battery CO., LTD.

制造商地址 东莞市塘厦镇科苑城康乙路 A16 号 C13

Address ..... C13 LuYi RodA 16, Ke Yuan City TangXia Town, DongGuan GuangDong

China.

产品名称 锂离子可充电电池

Name of product..... Li-ion Rechargeable Battery

产品型号 26650

总共页数

16 pages

Total pages.....

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 依据标准

Section 38.3 of the Sixth revised edition of Recommendations on the Standards .....

Transport of Dangerous Goods, Manual of Test and Criteria

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

发布日期 2018-04-17

Date of Issue ..... 测试结果 所提供的样品符合以上测试标准

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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批准 Approved b

钟明 Philo Zhong / 总经理 Manager



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产品一般信息 General product information:	X LEK TEK TEK SLIEK MITER MITER MITER
产品分类 /Classification	锂离子可充电电池 Li-ion Rechargeable Battery
型号 /Model:	26650
额定值/Ratings	3.7V 5000mAh 18.5Wh
商标/Trade mark	to June me in the text to
最大充电电压/Max. charge voltage:	4.2V 4.2V
最大充电电流/Max. charge current	5000mA
标准充电电流/Standard charge current:	1000mA
最大放电电流/Max. discharge current:	5000mA
标准放电电流/Standard discharge current:	1000mA
放电截止电压/Discharge cut-off voltage:	3.0V
尺寸/Dimension	Ф26.6mm×72.1mm
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:	MULTINALL WAS MADE WAS THE WAY
样品接受日期 Date of receipt of test item	2018-03-20
测试日期 Date(s) of performance of test	2018-03-21 to 2018-04-09
测试结论 Test Conclusion:	THE WAY THE THE THE THE

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	WATER WATER WA	I BY WALL WALL WALLEST THE STIFF WITHER	
T2.温度试验 Thermal test	LIEX WALTER WALT		
T3.振动 Vibration	B01#-B10#	一次循环充放电完全充电状态 At first cycle, in fully charged state	
T4.冲击 Shock	My M	TEX NITER UNITER WHITER WHITER WHITE WHITE	
T5. 外部短路 External short circuit	Muric Muric A	of the lies outes intest mutes whites	
T.6 撞击/挤压 Impact / Crush	C01#-C05#	一次充电放电周期 50%设计标定电容量状态 At first cycle at 50% of the design rated capacity	
T.7 过充	B11#-B14#	一次循环充放电完全充电状态 At first cycle, in fully charged state	
Overcharge	B15#-B18#	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#	五十个充电放电周期后完全放电状态 After fifty cycles 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 °C-25 °C, ambient humidity 45%-75%

Subcontracted test condition: N/A



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LIFE	ST/SG/AC	.10/11Rev.6 Section 38.3	et tet tet s	ER OLIFE
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	Murit Maria Mint	Р
LIER MULLER	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 WALTER WALTER	MITES W
WALTE V	试验 6 和 8 应使用未另外试验过 and T.8 shall be conducted using cells or batteries.		TEX WHITE WHITE W	Puri
White Wh	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 Tes purposes of testing on cycled b	using undamaged sts T.1 to T.5 for	TEX LIEX NITE	N/A
质量损失 Mass loss	用以下测试步骤 Following procedure is provided	with white white	We the text	Р
whitek whi	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*100 Where M1 is the mass before the mass after the test. When mass the values in below table, it sha mass loss"	2 是试验后的质量。如果 强,即为"无质量损失" 0 he test and M2 is the s loss does not exceed	TEX WHITEX WHITEX WHITE	iex mili iex mili huvitex
	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	ovnire w
38.3.4.1		: Altitude Simulation	at all set s	P
38.3.4.1.1	目的/Purpose	Charles Marie Mari	MIT, MIT, MIL	P
n <sup>1</sup>	本试验模拟在低压条件下的空运 transport under low-pressure co		TE MITEL MILIE	MILIEK.
38.3.4.1.2	试验程序/Test procedure	oriditions.	L at	P
MULT	存储气压/Stored at a pressure	- TEX	11.6 kPa	14:5 - M
t et	环境温度/Ambient temperature	(20 ± 5°C)	23.0℃	1et x
write of	存储时间/Stored times( ≥ 6 ho	urs)	6 hours	-411-
38.3.4.1.3	要求/Requirement	the way		+ Park
NITEK WILTER	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 requiremer not applicable to test cells and discharged states.	中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 V



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LIEL	ST/SG/AC.10/11Rev.6 Section 38.	3 ct let let	IET NIT
条款 Clause	测试要求 Requirement-Test	结果评判 Result-Remark	结论 Verdict
38.3.4.2	试验 2 温度试验/ Test T.2: Thermal Test	Mr. I Mil Mul	Р
38.3.4.2.1	目的/Purpose	at the text	JEH.
EK WATEK	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.	unit will water we	irek <sub>J</sub> ori
38.3.4.2.2	试验程序/Test procedure	E. WILL MULL MULL	Р
INLIEK WALLE	试验温度和存储时间/ Test temperature and stored hours	1) 72±2°C, ≥6h 2) -40±2°C, ≥6h	WITEK.
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.	nliek-wi
WALTER W	测试时间/ Test times	重复 10 次/Repeated 10 times	ie. Anii
WALLEK 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 22.9℃	k walitek
NITER WHITE	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	THE WILL MUST AN	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	EK WALTE WALTEK WALTEK W
38.3.4.3	试验 3 振动 /Test T.3: Vibration	C. "10. "11. "10.	Р
38.3.4.3.1	目的/ Purpose	H LIET WIFE MIN	Р
LIEK LIE	本试验模拟运输过程中的振动/This test simulates vibration during transport.	Et LET LET	LITEN .
38.3.4.3.2	测试程序/ Test procedure	Whit Mut Mu	Р
rek whitek	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.	NIFE WATER WATER W	RLIFET MAN



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条款	测试要求	结果评判	结论
Clause	Requirement-Test	Result-Remark	Verdic
inch and	We will be a second of the sec	the state of the souls	ALL.
	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.	multer multer multer	INLIER P
whitek whitek	从 7HZ 开始保持 1 g <sub>n</sub> 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 <sub>n</sub> (频率约为 50HZ)。将最大加速度保持在 8 g <sub>n</sub> 直到频率增加到 200HZ /From 7 Hz to a peak acceleration of 1 g <sub>n</sub> 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 <sub>n</sub> occurs (approximately 50 Hz). A peak acceleration of 8 g <sub>n</sub> is then maintained until the frequency is increased to 200 Hz	EX WALTER WALTER WALTER WALTER WALTER WALTER WALTER	et white white we have the second sec
while was	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 WAITER WALTER WALTE	P E
38.3.4.3.3	要求/ Requirement	MUT ME ME	Р
Whitek on Nitek on Tek on tek	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	LIE VIN
38.3.4.4	试验 4 冲击/ Test T.4: Shock	TE WILL MILL M	P
38.3.4.4.1	目的/ Purpose	at the state of	P
LIEK MITE	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	TEX TEX TEX	MITS.
38.3.4.4.2	测试程序 /Test procedure	Mr. Mr. All	Р
WALIER	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	NITER WHITE WHITE V	NITE W

batteries shall be secured to the testing machine by means of a rigid mount which will support all mounting surfaces of each test battery.



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条款	测试要求	7 / /k		结果评判	结论	
Clause	Requireme	nt-Test		Result-Remark	Verdic	
	, Nr J	La Angel An	at A	× 167		
	电芯经受峰	值加速度 150 gn和脉冲持续时	间 6ms 的半	Mr. Mr. Mr.		
		/Each cell shall be subjected to		A EX LEX	P	
		eak acceleration of 150 g <sub>n</sub> and	pulse	WITE WILL WALL	in !	
_ <del>/</del>		6milliseconds.	- H-1-7-3-4-4	1/1 /2	<b>∠</b> €	
	4 6 611	受峰值加速度 50 gn和脉冲持续		TEX STEX STEEL OF	11. II	
		冲击/Alternatively, large cells r o a half-sine shock of peak acc		ir, we me m	N/A	
		ulse duration of 11 millisecond		at at at a	X	
me m		经受半正弦波冲击的峰值加速原		C WILL AVE AVE	The same	
	的质量。小	型电池的脉冲持续时间为6ms,	大型电池为	72,		
	11ms。以7	下提供的公式用来计算适合的最	小峰值加速	TEX TEX WITE		
		ttery shall be subjected to a ha		Mr. Mr. M.	N1/A	
		eleration depending on the ma		at let let	N/A	
		e pulse duration shall be 6 milli ries and 11 milliseconds for lar		WILL AVILLANDIN A	V. 11	
		as below are provide to calcula			1	
الم المثالي		minimum peak accelerations.	×-	TEX LIER SLIE IN		
	Battery	Minimum peak acceleration	Pulse	in in in		
			duration	t set set se	LIFE	
	Small	150 g <sub>n</sub> or result of formula	d mil	White whi whi	2012	
	batteries	Acceleration( $g_n$ )= $(\frac{1}{2})$	6ms	+ +	a Ext	
	Dationog	Whichever is smaller	LEY TE	LIER WITE WITE	N/A	
	A 10	50 g <sub>n</sub> or result of formula		24. 24. 25.	L	
	Large	2000	11ms	LET LET LET	LIER	
	batteries	Acceleration( $g_n$ )= $(\frac{1}{m_{max}})$	Tillis	it, were me in	. 70.	
	ST SEE	Whichever is smaller	10,		et d	
		电池须在三个互相垂直的电芯等		ex write write war	MUL	
		次冲击,接着反方向经受三次次		10 10	t	
		告/Each cell or battery shall be s in the positive direction and		TEN LIFE ALTER	Р	
		ne negative direction in each o		My My	70.	
		erpendicular mounting positions		A LEK LEK	TEX	
NU	or battery for	or a total of 18 shocks.	TEN		10, 1	
38.3.4.4.3	要求/Requi	rement	711		P	
الم المالان		排气、无解体、无破裂和无起力		TEX SITE WITE OF	3 10	
		电池在试验后的开路电压不小一			,	
		压的 90%, 电压的要求不适用		体、无破裂和无起火,		
		芯和电池/No leakage, no venti		数据见表 4 /No	ZII.	
		y, no rupture and no fire and the ge of each test cell or battery a		leakage, no venting,	PL	
		in 90% of its voltage immediate		no disassembly, no	WILL	
	this proced	ure. The requirement relating t	o voltage is	rupture and no fire. The data see Table 4		
		ble to test cells and batteries a	t fully	THO data doo Table 4	VIIE.	
7/1,	discharged	states.	1E. 11.11.	Wir Aug M	, 7,	
38.3.4.5	试验 5 外部	/短路 /Test T.5: External Sho	rt Circuit	at at all o	P	
-1/12		***************************************	100	the state of the s	3/11/	

38.3.4.5	试验 5 外部短路 /Test T.5: External Short Circuit	cet itet altet al	P
38.3.4.5.1	目的/ Purpose	m, m, m	Р
INLIE WITH	本试验模拟外部短路/This test simulates an external	e tek tiek alie	11/2/6



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	ST/SG/AC.10/11Rev.6 Section 38.	3 pt set set s	
条款 Clause	测试要求 Requirement-Test	结果评判 Result-Remark	结论 Verdict
	Mr. M. M. A. A. C. C. C.	A THE OTHER WITH	
	short circuit.	m. n	
38.3.4.5.2	试验程序 /Test procedure	TEX LIEX NITER	P
EX WHITEX WHITE WAS AND WHITE	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.	TEK WHITEK WHITEK WE WHITEK WHITEK WHITEK WHITEK WHITEK WHITEK WHITEK WHITEK	LITER WAL
MALTEX N	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	PALT
WAL WALTER WALTER WALTER	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 white white white w	WILLEX WI
38.3.4.5.3	要求/ Requirement	MUT MU MILL	Р
untiek watek	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.	WALTER MITER WALT

38.3.4.6	试验 6 撞击/挤压 Test T.6: Impact / Crush	WALL WALL WALL	₹,b
38.3.4.6.1	目的 /Purpose	A ST ST	Р
TEK WALTER	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 while while w	wr w
38.3.4.6.2	<b>试验程序-撞击</b> (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)	IEK WALTEK WALTER WAL	PLIE
WILL WALL	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 ±	- LIEK NIFEK MITE	PEL

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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
Clause	Requirement-Test  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	Result-Remark  The state of the	Verdict  Note of the second se
Whitek white	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.	ALL MALLER WALLER WALLER	MITEK MITEK MITEK MI
38.3.4.6.3	<b>试验程序-挤压</b> (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)	er miler morter mor	N/A
White Whitek	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 WITEK WITEK	N/A
LITEK IN	施加的力量达到 13 kN ± 0.78kN The applied force reaches 13 kN ± 0.78 kN;	☐Reach this condition	N/A
The state of	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
Wr. 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.	NITEX WALTER WALTER O	N/A
White W	试验样品需观察 6 小时/The test samples shall be observed for a further 6h	JEK WILLY WILLEY MA	N/A
ALTEK OL	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	- tet ite	N/A



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ال الماني	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 Verdic
Vr. Mr.	component cells that have not previously been	TE VITE NATIONALIA	4/1/
	subjected to other tests.	111 11	
38.3.4.6.4	要求/ Requirement	LIE SITE OLIV	ГР
t whitek whi	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	TEK W F Pr Whi
38.3.4.7	计及 7 计序文中 /Toot T 7: Overshaves	The Mr. Mr.	- D
	试验 7 过度充电 /Test T.7: Overcharge		Р
38.3.4.7.1	目的 /Purpose	Vr. Mr. M. A	Р
	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.	TEX WITEK MUTEK MU	15. 15. 15. 15. 15. 15. 15. 15. 15. 15.
88.3.4.7.2	试验程序/Test procedure	t et et se	Р
LEK WILEN	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.	5000*2=10000mA	P
t ist	试验的最小电压如下: /The minimum voltage of the test shall be as follows:	me me m	Р
	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.	8.4V	Et P
EX WILLEX	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.	TEX WALLEY	N/A
WITE OF	试验环境温度/ Ambient temperature.	23.0℃	7611
4	试验的进行时间/ The duration of the test.	24h	
8.3.4.7.3	要求 /Requirement	ex tex tex ti	Р
TEK WALTER	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	MALTEK LITE P

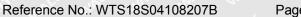
Table 7



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F LIER O	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	Mr. I Mr. Mus.	Р	
38.3.4.8.1	目的 Purpose	EX TEX TEX	ΛP	
EX MUTER A	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.	TEK MITER MUTER ON	riex-Mri	
38.3.4.8.2	试验程序 Test procedure	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	P	
Whitek white	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.	White white white	WALER WA	
	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	EK WILLIS	
38.3.4.8.3	要求/Requirement	at at all	Р	
untiek un	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	ex united P	







# 表 1: 高空模拟/ Table1: Altitude simulation

M		质量/Mass(g)	et jet	MITEL MILE			
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#	99.912	99.911	0.001	4.185	4.184	99.98	A P
B02#	99.812	99.810	0.002	4.194	4.190	99.90	Р
B03#	99.616	99.615	0.001	4.195	4.191	99.90	Р
B04#	99.610	99.608	0.002	4.194	4.190	99.90	n Pn
B05#	99.825	99.824	0.001	4.192	4.188	99.90	LP A
B06#	99.889	99.888	0.001	4.195	4.191	99.90	P
B07#	99.913	99.912	0.001	4.191	4.187	99.90	Р
B08#	99.528	99.527	0.001	4.188	4.186	99.95	+ P.+
B09#	99.875	99.874	0.001	4.192	4.190	99.95	Р
B10#	100.027	100.026	0.001	4.187	4.186	99.98	Р

# 表 2: 温度测试/ Table 2: Thermal test

12: 11	III/Q (A) I ADIC	2. 1110111141 to	,,				
编号/		质量/Mass(g)		电	statistic and		
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
EX.	M1	M2	(%)	OCV1	OCV2	(%)	et let
B01#	99.911	99.907	0.004	4.184	4.127	98.64	Р
B02#	99.810	99.808	0.002	4.190	4.131	98.59	Р
B03#	99.615	99.612	0.003	4.191	4.131	98.57	P
B04#	99.608	99.602	0.006	4.190	4.130	98.57	MP M
B05#	99.824	99.820	0.004	4.188	4.133	98.69	Р
B06#	99.888	99.885	0.003	4.191	4.133	98.62	P
B07#	99.912	99.908	0.004	4.187	4.133	98.71	W P W
B08#	99.527	99.521	0.006	4.186	4.130	98.66	Р
B09#	99.874	99.872	0.002	4.190	4.129	98.54	P
B10#	100.026	100.023	0.003	4.186	4.128	98.61	P.

#### 表 3 振动/ Table 3: Vibration

表 3 派列 Table 3: Vibration										
, M	质	质量/Mass(g)		近 加拉 电	4, 4					
编号 /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	OCV2/OC V1	判定 /Verdict			
	M1	M2	(%)	OCV1	test OCV2	(%)	A 10			
B01#	99.907	99.906	0.001	4.127	4.126	99.98	Р			
B02#	99.808	99.807	0.001	4.131	4.131	100.00	b P			
B03#	99.612	99.611	0.001	4.131	4.130	99.98	L P			
B04#	99.602	99.602	0.000	4.130	4.130	100.00	P			
B05#	99.820	99.820	0.000	4.133	4.132	99.98	Р			
B06#	99.885	99.884	0.001	4.133	4.132	99.98	+ P			
B07#	99.908	99.907	0.001	4.133	4.133	100.00	P			
B08#	99.521	99.520	0.001	4.130	4.130	100.00	Р			
B09#	99.872	99.871	0.001	4.129	4.129	100.00	Р			
B10#	100.023	100.022	0.001	4.128	4.127	99.98	P			







### 表 4 冲击/ Table 4: Shock

Me	711. 71.	质量/Mass(g)	TEX TEX	INLIER WILLE			
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#	99.906	99.906	0.000	4.126	4.125	99.98	A P
B02#	99.807	99.806	0.001	4.131	4.130	99.98	Р
B03#	99.611	99.610	0.001	4.130	4.130	100.00	P
B04#	99.602	99.601	0.001	4.130	4.129	99.98	w Pw
B05#	99.820	99.820	0.000	4.132	4.131	99.98	LP A
B06#	99.884	99.883	0.001	4.132	4.131	99.98	P
B07#	99.907	99.906	0.001	4.133	4.132	99.98	Р
B08#	99.520	99.519	0.001	4.130	4.130	100.00	A PA
B09#	99.871	99.870	0.001	4.129	4.129	100.00	P
B10#	100.022	100.021	0.001	4.127	4.127	100.00	Р

#### 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#	56.1	in B. W
B02#	55.9	Р
B03#	56.2	A PET CIT
B04#	56.0	THE MIT WITH
B05#	56.0	Р
B06#	56.1	AP JV
B07#	56.2	W. A. B. M. A.
B08#	56.2	Р
B09#	56.1	AT A THE ALL
B10#	56.0	By 20

## 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#	23.2	70 P
C02#	23.1	P
C03#	23.0	The Purk No
C04#	23.2	P
C05#	23.1	P CF CF

# 表 7 过度充电 / Table 7: Overcharge

编号/ No.	B11#	B12#	B13#	B14#	B15#	B16#	B17#	B18#
判定/ Verdict	P	P	TEX PAIRE	WIN P. WI	LIE PALIT	Alub A	P	Р

### 表 8 强制放电/ Table 8:Forced discharge

编号/ No.	C06#	C07#	C08#	C09#	C10#	C11#	C12#	C13#	C14#	C15#
判定 /Verdict	P A	P	P	P P	Pier	NA PER	In P	nii P w	Puni	Р
编号/ No.	C16#	C17#	C18#	C19#	C20#	C21#	C22#	C23#	C24#	C25#
判定 /Verdict	P	P	Prek	PEX	IN P	ALTE W	Puni	Pint	Р	Р



#### **Photos**

3.7V 5000mAh 18.5Wh Ultra High Capacity Li-ion Rechargeable Battery 26650

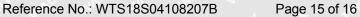
Photo 1



Photo 2



Photo 3





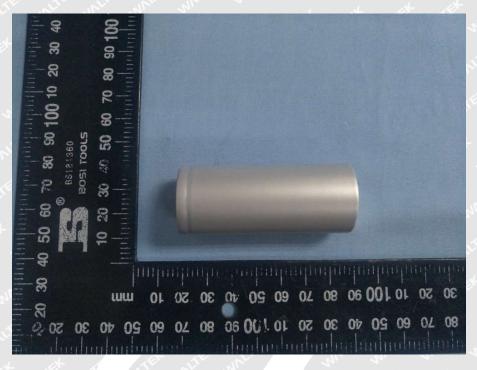


Photo 4



Photo 5







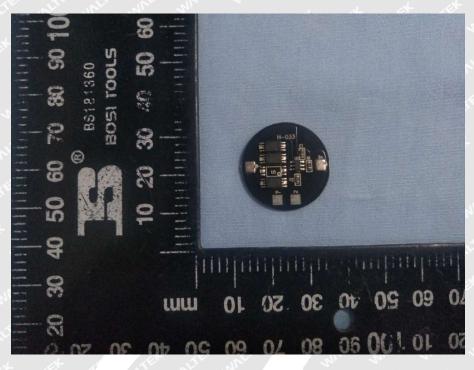


Photo 6

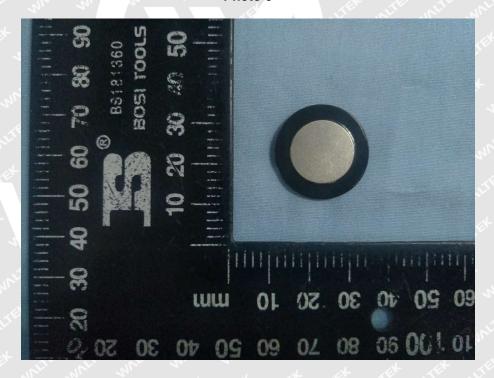


Photo 7

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