



中国认可
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检测
TESTING
CNAS L0095

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No.: RZUN012025-0419

检测报告

TEST REPORT

UN38.3

NAME OF SAMPLE:

Rechargeable Li-ion Battery Pack

产品名称:

可充式锂离子电池组

CLIENT:

Brightway Innovation Intelligent Technology
(Suzhou) Co., Ltd.

委托单位:

坦途创新智能科技（苏州）有限公司

CLASSIFICATION OF TEST:

Commission Test

检测类别:

委托测试

威凯检测技术有限公司
CVC Testing Technology Co., Ltd.

检测报告

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Name of samples: Rechargeable Li-ion Battery Pack 样品名称:可充式锂离子电池组	Type/Model: 型号规格: T2504-B61A 21,6V 2,55Ah 55,08Wh
Color: Blue 样品颜色:蓝色	Physical shape:Prismatic 样品形状:棱柱形
Commissioned by: Brightway Innovation Intelligent Technology (Suzhou) Co., Ltd. 委托单位: 坦途创新智能科技(苏州)有限公司	Commissioner address: Building A2, Shangjinwan Headquarters Economic Park, No.2288, Wuzhong Avenue, Wuzhong Economic Development Zone, Suzhou Jiangsu P.R. China 委托单位地址: 苏州吴中经济开发区吴中大道 2288 号尚金湾总部经济园 A2 幢
Manufacturer: Yiyang Corun Battery Co.,Ltd. 制造商: 益阳科力远电池有限责任公司	Manufacturer address:No.189 YuXingShan Road, YiYang City, Hunan Province, China 制造商地址: 湖南省益阳市鱼形山路 189 号
Factory: Yiyang Corun Battery Co.,Ltd. 生产厂: 益阳科力远电池有限责任公司	Factory address: No.189 YuXingShan Road, YiYang City, Hunan Province, China 生产厂地址: 湖南省益阳市鱼形山路 189 号
Classification of test: Commission Test 检测类别: 委托测试	Quantity of sample: 8 battery packs, 30 cells 样品数量: 8 个电池组, 30 个电芯
Tested according to: 测试标准: ST/SG/AC.10/11/Rev.8/ Section 38.3	Sample identification: 样品标识序号:b1#~b8#, c1#~c30#
Receiving date: 接样日期: 2025-06-02	Means of receiving: Submitted by commissioner 接样方式: 委托单位送样
Completing date: 完成日期: 2025-06-30	Test item: 8 items 测试项目: 8 项
Test conclusion: 检测结论: The Rechargeable Li-ion Battery Packs submitted by Brightway Innovation Intelligent Technology (Suzhou) Co., Ltd. are tested according to Section 38.3 of the Eighth revised edition of the Manual of Tests and Criteria (ST/SG/AC.10/11/Rev.8/Section 38.3). The test items are full items. The test results comply with the relevant requirements of the standard. 由坦途创新智能科技(苏州)有限公司送检送检的可充式锂离子电池组, 依据联合国《试验和标准手册》第八修订版第 38.3 节进行检测, 试验为全项目, 试验结果符合标准相关要求。 Seal of CVC CVC 盖章 Date of issue: 签发日期: 2025-07-02	

Title: Manager
批准人职务: 经理

Approved by: Zhang Siyao Reviewed by: Zheng Feida Tested by: Deng Junzhao

批 准: Zhang siyao 审 核: Zheng Feida 检 测: Deng Junzhao

Description and illustration of the sample:

样品说明及描述:

The sample's status is good

样品状况良好。

The battery (T2504-B61A) is composed of cells (INR18650-26E), and the connection mode is: 6S1P
 电池组 (T2504-B61A) 由电芯 (INR18650-26E) 组成, 连接方式为: 6S1P

Cell Dimensions/电芯尺寸: $\phi 18\text{mm} \times 65\text{mm}$

Watt-hour rating of each battery/ 单个电池组的瓦时数: 55,08Wh

Test item 试验项目	Sample No. 样品编号	State 状态	Remark 备注
T.1~T.5	b1#~b4#	at first cycle, in fully charged states 第一个交替充电放电周期完全充电状态	-
	b5#~b8#	after 25 cycles ending in fully charged states 第 25 个交替充电放电周期完全充电状态	-
T.6	c1#~c5#	at first cycle at 50% of the design rated capacity 第一个交替充电放电周期充电到设计额定容量的 50%	-
	c6#~c10#	after 25 cycles ending at 50% of the design rated capacity 第 25 个交替充电放电周期充电到设计额定容量的 50%	
T.7	b1#~b4#	at first cycle, in fully charged states 第一个交替充电放电周期完全充电状态	using undamaged samples previously used in tests T.1 to T.5 使用试验 T.1 至 T.5 未损坏的样品
	b5#~b8#	after 25 cycles ending in fully charged states 第 25 个交替充电放电周期完全充电状态	
T.8	c11#~c20#	at first cycle, in fully discharged states 第一个交替充电放电周期完全放电状态	-
	c21#~c30#	after 25 cycles ending in fully discharged states 第 25 个交替充电放电周期完全放电状态	-

The test objects of T.1~T.5 and T.7 are battery packs, and the sample numbers are b1#~b8#

T.1~T.5、T.7 的测试对象为电池组, 样品编号为 b1#~b8#。

The test objects of T.6 and T.8 are component cells, and the sample numbers are c1#~c30#

T.6、T.8 的测试对象为组成电芯, 样品编号为 c1#~c30#。

Description of the sampling procedure:

取样程序的说明:

/

Description of the deviation from the standard, if any:

试验结果不符合标准项的说明:

/

Remarks:

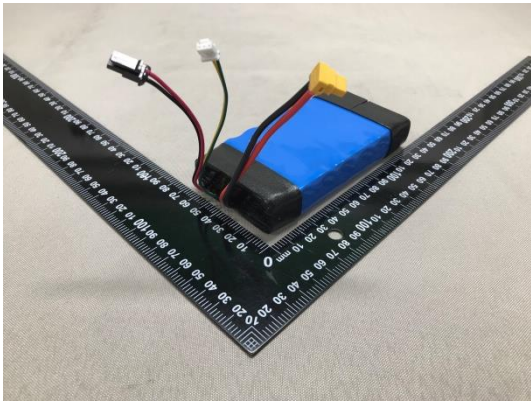
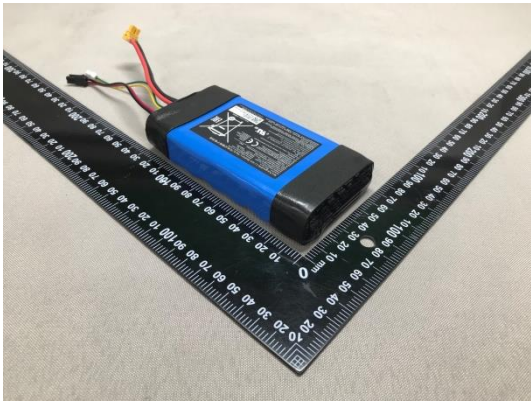
备注:

Throughout this report a comma is used as the decimal separator.

本报告中以逗号代替小数点。

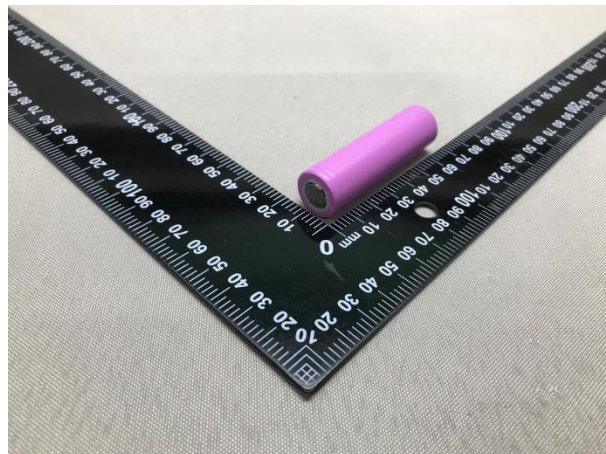
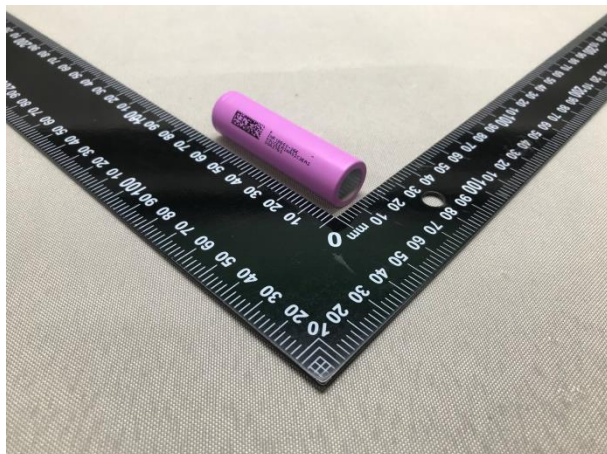
Photos of Samples and Labels/样品照片及标识

Battery/电池 (T2504-B61A 21,6V 2,55Ah 55,08Wh)



Photos of Samples and Labels/样品照片及标识

Component Cell/内部电芯 (INR18650-26E 3,65V 2,6Ah 9,49Wh)



ST/SG/AC.10/11/Rev.8/ Section 38.3			
Clause 章节	Requirements 标准要求	Result 测试结果	Verdict 判定
38.3.4.4	Test T.4: Shock/试验 T.4: 冲击		P
	1 Test cells and batteries shall be secured to the testing machine/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。 2 Each cell shall be subjected to a half-sine shock of peak acceleration of 150 g_n and pulse duration of 6 milliseconds. Large cells may be subjected to a half-sine shock of peak acceleration of 50 g_n and pulse duration of 11 milliseconds. / 对每个电芯以峰值为 150g_n 的半正弦的加速度撞击，脉冲持续 6 毫秒，大型电芯须经受最大加速度 50g_n 和脉冲持续时间 11 毫秒的半正弦波冲击。 Small batteries shall be subjected to a half-sine shock of peak acceleration of 150 g_n (or Acceleration(g_n)=$\sqrt{\left(\frac{100850}{mass}\right)}$, which is smaller) and pulse duration of 6 milliseconds, large batteries shall be subjected to a half-sine of peak acceleration of 50 g_n (or Acceleration(g_n)=$\sqrt{\left(\frac{30000}{mass}\right)}$, which is smaller) and pulse duration of 11 milliseconds/对每个电池以峰值为 150g_n（或与$\sqrt{\left(\frac{100850}{mass}\right)}$中的较小值）的半正弦的加速度撞击，脉冲持续 6 毫秒，大型电池须经受最大加速度 50g_n（或与$\sqrt{\left(\frac{30000}{mass}\right)}$中的较小值）和脉冲持续时间 11 毫秒的半正弦波冲击。 3 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/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。		
	Requirements/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		

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ST/SG/AC.10/11/Rev.8/ Section 38.3			
Clause 章节	Requirements 标准要求	Result 测试结果	Verdict 判定
38.3.4.7	Test T.7: Overcharge/试验 T.7: 过度充电		P
	1 The charge current shall be twice the manufacturer's recommended maximum continuous charge current/以 2 倍制造厂推荐的最大持续充电电流对样品充电 2 The minimum voltage of the test shall be as follows/本试验最小电压见下文		
	a) 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/ 如果厂家推荐的充电电压不超过 18V, 本试验的最小充电电压应是厂家标定最大充电电压的两倍或者是 22V 之中的较小者。 b) When the manufacturer's recommended charge voltage is more than 18V, the minimum voltage of the test shall be 1,2 times the maximum charge voltage/ 如果厂家推荐的充电电压超过 18V, 本试验的最小充电电压应是厂家标定最大充电电压的 1,2 倍。 3 Tests are to be conducted at ambient temperature 20±5℃, The duration of the test shall be 24 hours/20±5℃的环境温度下, 试验持续 24 小时。	The voltage of the test is 30,24V, and the current is 2,6A 试验的电压为 30,24V, 电流为 2,6A	
	Requirements/标准要求: No disassembly and no fire within seven days of this test 试验样品在试验中和试验后 7 天内, 应无解体和无着火现象发生。	The samples b1#~b8# : no disassembly and no fire/编号为 b1#~b8#的样品: 无解体、无着火现象 For voltage data before test, see table 3. / 试验前电压见表 3	
	Test T.8: Forced discharge/试验 T.8: 强制放电		
38.3.4.8	Each cell shall be forced discharged at ambient temperature by connecting it in series with a 12 V D.C. power supply at an initial current equal to the maximum discharge current specified by the manufacturer, 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, 此直流电源提供给每个电芯初始电流为制造厂指定的最大放电电流。		P
	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) 指定的放电电流通过串联在试验电芯上的合适大小和功率的负载来获得, 每个电芯的强制放电时间(小时)为额定容量除以初始电流(安培)。		
	Requirements/标准要求: No disassembly and no fire within seven days of this test 试验样品在试验中和试验后 7 天内, 应无解体和无着火现象发生。	The samples c11#~c30#: no disassembly and no fire/编号为 c11#~c30#的样品: 无解体、无着火现象 The data is shown in Table 4./数据见表 4	

Table1: T1~T5 / 表 1. 试验 1~试验 5

Sample No. 样品号	Mass prior to test / 试验前质量(g)	OCV prior to test / 试验前电压(V)	Test T.1: Altitude simulation/ 试验 T.1: 高度模拟		Test T.2: Thermal test/ 试验 T.2: 温度试验		Test T.3: Vibration/ 试验 T.3: 振动		Test T.4: Shock/ 试验 T.4: 冲击		Test T.5: External Short Circuit/ 试验 T.5 外部短路
			Mass Loss(%) 质量损失(%)	OCV Retention Ratio(%) 电压保留比(%)	Mass Loss(%) 质量损失(%)	OCV Retention Ratio(%) 电压保留比(%)	Mass Loss(%) 质量损失(%)	OCV Retention Ratio(%) 电压保留比(%)	Mass Loss(%) 质量损失(%)	OCV Retention Ratio(%) 电压保留比(%)	Temp. (°C) 温度 (°C)
b1#	347,38	25,054	0,000	100,00	0,057	98,95	0,000	100,00	0,000	100,00	57,1
b2#	346,76	25,058	0,002	100,00	0,049	98,95	0,000	100,00	0,000	100,00	57,2
b3#	348,32	25,058	0,000	99,99	0,043	98,95	0,000	100,00	0,000	100,00	57,0
b4#	346,63	25,038	0,002	100,00	0,066	99,02	0,000	100,00	0,000	100,00	57,2
b5#	346,86	25,057	0,002	100,00	0,057	98,97	0,000	100,00	0,000	100,00	56,9
b6#	347,37	25,053	0,000	99,99	0,051	98,95	0,000	100,00	0,000	100,00	57,0
b7#	346,79	25,042	0,000	99,99	0,060	99,01	0,000	100,00	0,000	100,00	57,1
b8#	347,31	25,058	0,000	99,99	0,031	98,96	0,000	100,00	0,000	100,00	57,2

Table2: Impact / 表 2: 撞击											
Test T.6: Impact/试验 T.6: 撞击	Sample No. 样品号	c1#	c2#	c3#	c4#	c5#	c6#	c7#	c8#	c9#	c10#
	OCV prior to test / 试验前电压 (V)	3,688	3,689	3,688	3,689	3,688	3,687	3,688	3,690	3,688	3,688
	Temp. (°C) 温度 (°C)	27,2	28,8	28,2	108,8	26,4	29,6	29,4	26,7	28,8	28,9

Table3: Overcharge Test of batteries/ 表 3 过度充电									
Test T.7: Overcharge / 试验 T.7: 过度 充电	Sample No. 样品号	b1#	b2#	b3#	b4#	b5#	b6#	b7#	b8#
	OCV prior to test /试验前电压 (V)	25,058	25,056	25,057	25,057	25,058	25,054	25,057	25,056

Table 4: Forced discharge / 表 4. 强制放电											
Test T.8: Forced discharge / 试验 T.8: 强制放电	Sample No. 样品号	c11#	c12#	c13#	c14#	c15#	c16#	c17#	c18#	c19#	c20#
	OCV prior to test / 试验前电压(V)	3,435	3,436	3,435	3,436	3,437	3,431	3,435	3,435	3,436	3,436
	Sample No. 样品号	c21#	c22#	c23#	c24#	c25#	c26#	c27#	c28#	c29#	c30#
	OCV prior to test / 试验前电压(V)	3,434	3,437	3,435	3,435	3,436	3,437	3,434	3,435	3,436	3,435

注 意 事 项 Important

1. 报告无检测单位印章无效。
The test report is invalid without the seal of CVC.
2. 未经本试验室书面同意，不得部分地复制本报告。
Nobody is allowed to photocopy or partly photocopy this test report without written permission of CVC.
3. 本报告无批准人、审核人及检测人签名无效。
The test report is invalid without the signatures of Ratifier, Reviewer and Testing engineer.
4. 本报告涂改无效。
The test report is invalid if altered,
5. 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。
Objections to the test report must be submitted to CVC within 15 days.
6. 本报告仅对送检样品负责。
The test report is valid for the tested samples only.
7. 判定栏中“-”表示“不需要判定”，“P”表示“通过”，“F”表示“不通过”，“N/A”表示“不适用”。
As for the Verdict, “-” means “no need for judgement”, “P” means “pass”, “F” means “fail” and “N/A” means “not applicable”.

****报告中未加 CMA 标志时，检测数据和结果仅供科研、教学或内部质量控制之用。****
The test data and test results given in this test report should only be used for purposes of scientific research, teaching and internal quality control when the CMA symbol is not presented.

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