

Cell Specification Sheet

产品规格书

Cell Model Number/电芯型号: HC85120GC1-20

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1 Scope/适用范围

This document is prepared to specify the specifications of the rechargeable semi-solid lithium battery cells, withHYLICreate Energy Technology's part number, supplied by HYLICreate Energy Technology Co.LTD to customers with their confirmation relevant to the cell products. For the avoidance of doubt, the specifications specified herein do not apply to any host device containing the cell products.

本规格书用于明确合源锂创（苏州）新能源科技有限公司所生产的锂离子电池的电芯产品规格，并需客户之承认。为避免产生疑虑，本规格书不适用于含有该电芯的主机设备。

2 Application/应用

无人机、3C、储能等 Drone, 3C, energy storage, etc

3 Model Number/型号

HC85120GC1-20

4 Standard Environmental Test Conditions/标准测试环境条件

1) Unless otherwise specified, all tests stated in this cell specification are conducted with below temperature and humidity conditions.

Temperature condition: $25 \pm 3^{\circ}\text{C}$ Humidity condition: $60 \pm 20\% \text{RH}$

除非特别说明，本电芯规格书中测试均按以下温度、湿度和环境大气压条件进行：温度： $25 \pm 3^{\circ}\text{C}$

湿度： $60 \pm 20\% \text{RH}$

2) In this specification, items with superscript “*” mean these items are only applicable to unused fresh cells within 30 days after manufacture.

本规格书中，带有上标“*”的项目只适用于未经使用的新鲜电芯，且电芯生产时间在30天以内。

5 Cell Specifications/电芯规格

No.	Items/项目	Specifications/规格	Remark/备注
5.1	Charge Cut-off Voltage 充电截止电压	4.25V	CC/CV
5.2	Nominal Voltage 标称电压	3.58V	0.33C discharge, $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$, 2.8 V ~ 4.25 V 0.33C 放电, $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$, 2.8 V ~ 4.25 V
5.3	Discharge Cut-off Voltage 放电截止电压	2.8V	CC
5.4	*Rated Capacity *额定容量	20Ah	0.5C / 0.5C, $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$, 2.8V ~ 4.25V
5.5	Charge Current (Std.) 标准充电电流	0.5C	Operating Temperature: 0 ~ 45°C 工作温度范围: 0 ~ 45°C

5.7	Max Charge Current 最大充电电流	1C	Operating Temperature: 15 ~ 45°C 工作温度: 15 ~ 45°C
5.6	Discharge Current (Std.) 标准放电电流	0.5C	Operating Temperature: -30 ~ 55°C 工作温度范围: -30 ~ 55°C
5.8	持续最大放电电流	5C	Operating Temperature: 15 ~ 45°C 工作温度: 15 ~ 45°C
	Max. Momentary Discharge Current 瞬间最大放电电流 (10S)	7C	Operating Temperature: 15 ~ 45°C 工作温度: 15 ~ 45°C
5.9	Charge/Discharge 充电/放电	Environment Temp. 环境温度	Current and Voltage 电流和电压
	Charge/充电	0 ~ 5°C	Charging at CC and CV mode with current ≤0.2C until voltage is up to 4.25V. End -off current: 0.05 C. 0.2C (最大值) 恒流充电至4.25V, 然后恒压充电至0.05C截止电流。
		5 ~ 15°C	Charging at CC and CV mode with current ≤0.5C until voltage is up to 4.25V. End -off current: 0.05 C. 0.5C (最大值) 恒流充电至4.25V, 然后恒压充电至0.05C截止电流。
		15 ~ 45°C	Charging at CC and CV mode with current ≤1C until voltage is up to 4.25V. End -off current: 0.05 C. 1C (最大值) 恒流充电至4.25V, 然后恒压充电至0.05C截止电流。
	Discharge/放电	-30 ~ 0°C	Discharging at CC mode with current ≤1C until voltage is down to 2.8V. 1C (最大值) 恒流放电至2.8V。
		0 ~ 55°C	Discharging at CC mode with current ≤3C until voltage is down to 2.8V. 3C (最大值) 恒流放电至2.8V。
5.10	Operating Temperature 工作温度	Charge Operating Temperature: 0 ~ 45°C 充电工作温度: 0 ~ 45°C Discharge Operating Temperature: -30 ~ 55°C 放电工作温度: -30 ~ 55°C	

5.11	Storage Temperature / 储存温度	≤ 2 month: $-20 \sim 45^{\circ}\text{C}$ $-20^{\circ}\text{C} \sim 45^{\circ}\text{C}$ 下保存 ≤ 2 个月 ≤ 6 months: $10 \sim 35^{\circ}\text{C}$ $10^{\circ}\text{C} \sim 35^{\circ}\text{C}$ 下保存 ≤ 6 个月
5.12	Cell Weight / 电芯重量	210 \pm 5g
5.13	Shipping Voltage / 出货电压	3.7~3.8V
5.14	Initial Impedance / 初始内阻	$\leq 2.5\text{m}\Omega$

6 Cell Performances and Criteria/电芯性能及标准

Standard Charge : A cell is charged at 0.5C constant current to 4.25V at $25\pm 3^{\circ}\text{C}$. Then it is charged at constant voltage. Charging shall be terminated when the charging current has tapered to 0.05C. The longest charging time shall not be longer than 3 hours.

标准充电：在环境温度 $25\pm 3^{\circ}\text{C}$ 条件下，对电芯以 0.5C 恒流充电至 4.25V，然后以 4.25V 恒压充电至充电电流小于等于 0.05C，最长充电时间不大于 3h，停止充电。

6.1 Electrical Performances/电性能

No.	Items/项目	Test Method and Condition/测试方法及条件	Criteria/标准
6.1.1	* Discharge Performance * 放电性能	A cell is stored for 0.5h~1h after standard charge. It is discharge at a constant current of 0.5C or 3C to ending voltage of 2.8V at $25\pm 3^{\circ}\text{C}$. 电芯标准充电后，搁置0.5h~ 1h，在 $25\pm 3^{\circ}\text{C}$ 的环境温度下分别以0.5C、3C恒流放电至截止电压2.8V。	$\geq 100\% * C @ 0.5C$ $\geq 90\% * C @ 3C$ $\geq 85\% * C @ 5C$
6.1.2	* RT Cycle Life 1 * 室温循环寿命1	A cell is cycled at $25\pm 3^{\circ}\text{C}$ as follows: Charge: 1.0C CC to 4.18V, CV to 0.05C; Discharge: 3C CC to 2.8V; Charge and discharge suspended between 30 min; Use standard charge and discharge for the every 100th cycle; Carry out 800 cycles. 在 $25\pm 3^{\circ}\text{C}$ 环境温度下，按照如下步骤进行循环实验：充电：1.0C恒流恒压充电至4.18V，截止电流0.05C；放电：1C放电至2.8V；充放电之间搁置30min；每100th循环进行一次标准充放电；共进行800次循环。	Discharge Capacity (800th cycle) $\geq 80\% * C$ 第 800 周 放 电 容 量 $\geq 80\% * C$

6.1.3	* RT Cycle Life 2 *室温循环寿命2	A cell is cycled at room temperature as follows: Charge:0.5C CC to 4.18V, CV to 0.05C; Discharge: 1C CC to 2.8V;Charge and discharge suspended between 30 min; Use standard charge and discharge for the every 100th cycle;Carry out 1000 cycles. 在室温下, 按照如下步骤进行循环实验: 充电: 0.5C恒流恒压充电至4.18V, 截止电流0.05C; 放电: 1C放电至2.8V; 充放电之间搁置30 min; 每100th循环进行一次标准充放电; 共进行800次循环。	Discharge Capacity (1000th cycle) ≥ 80%*C 第1000周放电容量 ≥80%*C
6.1.4	Temperature Characteristics 温度特性	After standard charge, a cell is stored in 55°C for 2 hours, then discharged to cut-off voltage 2.8V with a constant current of 0.5C. Alternatively ,a cell is stored in -30°C for 2 hours, then discharged to cut-off voltage 2.24V with a constant current of 0.5C. 电芯在经过标准充电后, 储存在55°C的环境中2h, 然后以0.5C恒流放电至截止电压2.8V, 储存在-30°C的环境中2h, 然后以0.5C恒流放电至截止电压2.24V。	Discharging Capacity (55°C) ≥ 98%*C 55°C放电容量≥98%*C Discharging Capacity (-30°C)≥85%*C -30°C放电容量≥85%*C
6.1.5	Charge (Capacity) Retention 荷电保持能力	A cell is stored at 25±3°C for 28 days after standard charge. After storage, place the cell at 25±3°C, measured the residual capacity with 0.5C till 2.8V. Measure the recovery capacity with 0.5C till 2.8V after standard charged the cell again. 电芯在经过标准充电后, 于25±3°C的环境温度下搁置 28 天后, 25±3°C的环境温度下, 进行0.5C标准放电到2.8V测试残余容量, 再进行一次标准充放电测试恢复容量。	Residual Capacity ≥93%*C 残余容量≥93%*C Recovery Capacity ≥95%*C 恢复容量≥95%*C

6.2 Mechanical Performances/机械性能

No.	Items/项目	Test Method and Condition/测试方法及条件	Criteria/标准
6.2.1	Low Pressure Test 低气压	After standard charging, place the battery in a vacuum box at 25 ± 2 °C, evacuate to 11.6Kpa, and observe for 1 hour after holding for 6 hours. 电池标准充电后, 搁置在25±2°C的真空箱中, 抽真空至11.6Kpa, 保持6h后观察1h。	No eakage No fire No explosion 不漏液 不起火 不爆炸

6.2.2	Vibration Test 振动测试	<p>A fully charged cell is to be subjected to simple harmonic motion with an amplitude of 0.8mm (0.03inch) [1.6mm(0.06inch) total maximum excursion]. The frequency is to be varied between 10 and 55 hertz, and return in not less than 90 nor more than 100 minutes. The cell is to be tested in three mutually perpendicular to each axis.</p> <p>电芯标准充电后，固定于振幅为0.8mm（总振程1.6mm）的简谐振动台，沿样品互相垂直的3个方向对电芯做振动测试，振动频率从10到55Hz 之间线性往复变化，振动时间大于90分钟小于100分钟。</p>	No fire No explosion 不起火 不爆炸
6.2.3	Flat Crush Test 平面挤压测试	<p>After standard charging of the battery, squeeze it in a direction perpendicular to the direction of the battery cell electrode plate; Squeezing plate form: a semi cylindrical body with a radius of 75mm, the length (L) of which is greater than the size of the battery cell being squeezed, and the size of the squeezed surface of the battery; Squeezing speed: not exceeding 2mm/s; Squeezing degree: Stop squeezing when the voltage reaches 0V, the deformation reaches 15%, the squeezing force reaches 100KN, or 1000 times the weight of the test object; Maintain for 10 minutes. After completing the above experimental steps, observe for 1 hour at the test environment temperature.</p> <p>电池标准充电后，进行挤压，挤压方向：垂直于电池单体极板方向施；挤压板形式：半径75mm的半圆柱体，半圆柱体长度（L）大于被挤压电池单体的尺寸电池被挤压面尺寸；挤压速度：不大于2mm/s；挤压程度：当电压达到0V或变形量达到15%或挤压力达100KN或1000倍试验对象重量后停止挤压；保持10min。完成上述试验步骤后，在试验环境温度下观察1h。</p>	No fire No explosion 不起火 不爆炸

6.3 Safety Performances/安全性能

No.	Items/项目	Test Method and Condition/测试方法及条件	Criteria/标准
6.3.1	*External Short Test *外短路测试	<p>After standard charging of the battery, short-circuit the positive and negative poles of the battery externally for 10 minutes (the external line resistance should be less than 5m Ω), and observe for 1 hour.</p> <p>电池标准充电后，将电池正、负极经外部短路10min(外部线路电阻应小于5mΩ)，观察1h。</p>	No fire No explosion 不起火 不爆炸
6.3.2	*Over Discharge Test *过放测试	<p>After standard charging of the battery, discharge it at 1C constant current for 90 minutes and observe for 1 hour.</p> <p>电池标准充电后，以1C恒流放电90min，观察1h。</p>	No fire No explosion 不起火 不爆炸

6.3.3	*Over Charge Test *过充测试	Charge the battery cell to the charging cut-off voltage and let it stand for 5 minutes, then charge it to 4.6V at 1C and stop charging. Observe for 1 hour at the test ambient temperature. 电芯常规充电至充电截止电压并静置5分钟，然后以1C充电至4.6V后停止充电，在试验环境温度下观察1h。	No fire No explosion 不起火 不爆炸
6.3.4	Temperature Cycling Test 温度循环测试	After standard charging of the battery, place it in a temperature box, and place the individual cells in the temperature box. Adjust the temperature of the temperature box according to Table 1 and Figure 1 of GB 38031-2020 8.1.6, cycle 5 times, and observe for 1 hour. 电池标准充电后，放入温度箱中，单体电芯放入温度箱中，温度箱温度按照GB 38031-2020 8.1.6 表1 和图1进行调节，循环次数5次，观察1h。	No leakage No fire No explosion 不漏液 不起火 不爆炸
6.3.5	heating test 加热测试	After standard charging of the battery, place it in an explosion-proof temperature chamber. The temperature chamber should be heated from room temperature to 130°C±2°C at a rate of 5°C/min and maintained at this temperature for 30 minutes before stopping heating and observing for 1 hour. 电池标准充电后，将电池放入防爆温度箱中，温度箱按照5°C/min的速率由室温升至130°C±2°C，并保持此温度30min后停止加热，观察1h。	No leakage No fire No explosion 不漏液 不起火 不爆炸

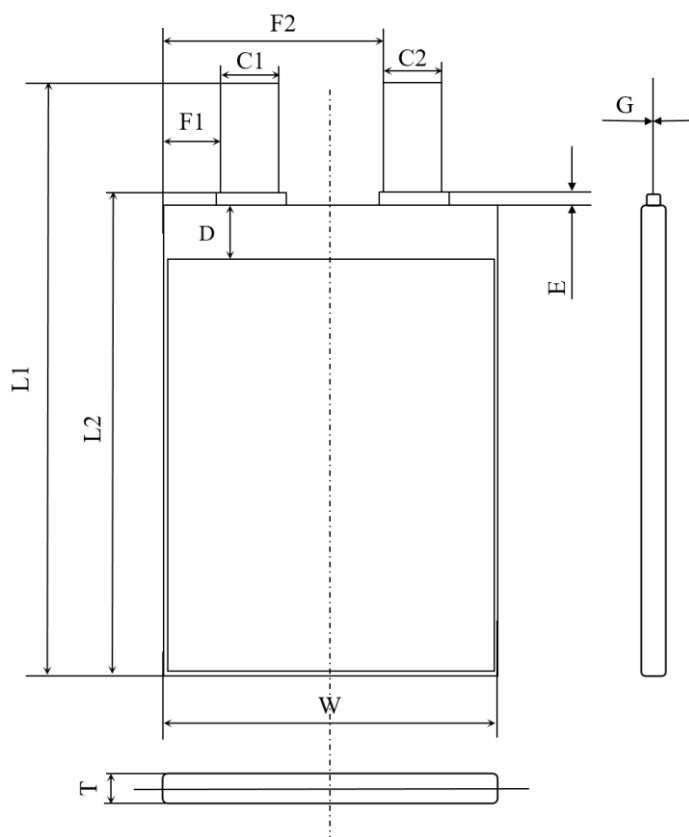
6.4 Visual Inspection/外观

There shall be no defects such as deformation, scratch, corrosion and leakage, which may jeopardize the performance of cell.

电芯外表应无变形、刮擦、腐蚀和漏液等会危及电芯性能的不良现象。

6.5 Guarantee Period of Quality/质量保质期

Guarantee period of quality of cell is 12 months after sold. 电芯保质期为出厂后12个月内。

7 Cell Drawing/电芯绘图


Items/项目	Description/描述	Dimension/尺寸	公差	
T	50% SOC Cell Thickness/50% SOC电芯厚度	10.1 (Test by 2000gf PPG)	± 0.2	mm
W	Cell Width/电芯宽度	85	± 1	mm
L1	Cell Length/电芯总长度	151	± 2	mm
L2	Modal Length/电芯主体长度	120	± 2	mm
C1/C2	Tab Width/极耳宽度	15	± 0.5	mm
D	Top Sealing Width/顶封宽度	13.5	± 0.5	mm
E	Sealant Length/极耳胶长	1.5	± 1	mm
F1	+ Distance from Cathode Tab to Left Side/ 正极耳左边距	12	± 2	mm
F2	- Distance from Anode Tab to Left Side/ 负极耳左边距	56	± 2	mm
G	Tab Thickness/极耳厚度	正极耳: 0.4	± 0.02	mm
		负极耳: 0.3		
	Folding Method/折边方式	Bifolded Edges/双折边		
	Bar Code Face/喷码面	Front (deep pit)/正面(深坑面)		

8 Technical and Safety Requirements/技术和安全要求

Statement 1) Customers are required to apply the cells under the conditions described in this cell specification. Otherwise, customers are requested to consult HYLICreate Energy Technology Co.,Ltd to evaluate the risk to use the cells in other application conditions.

声明1) : 用户需在本电芯规格书规定的使用环境下使用电芯。如需在规定之外的环境下使用, 用户需向合源锂创(苏州)新能源科技有限公司咨询评估风险。

Statement 2) HYLICreate Energy Technology Co.,Ltd will take no responsibility for any accident when the cell is used under other conditions than those described in this cell specification.

声明2) : 在本规格书规定环境之外使用电芯发生的意外, 本公司不承担责任。

8.1 Charge/充电

8.1.1 Charge Current /充电电流

Charge current for a single cell should be less than the maximum charge current specified in this cell specification.

单电芯的充电电流应该小于本规格书所标明的最大充电电流。

8.1.2 Charge Voltage /充电电压

Charge voltage for a single cell shall be less than that specified in this cell specification. Higher charge voltage must be strictly prohibited. The charger and protection circuit of battery pack shall be designed to comply with this voltage limitation.

单电芯的充电电压必须低于本规格书所标明的充电截止电压。超过规定充电电压必须被严格禁止。充电器和电池pack的设计也必须严格遵守充电电压的限制。

8.1.3 Charge Temperature/充电温度

Cells shall be charged according to the temperature condition specified in this cell specification. Charging at temperature lower or higher than the specified temperature windows shall be prohibited.

电芯的充电温度必须严格遵守本规格书规定之温度, 在高于或低于规定的温度区间充电都必须禁止。

8.1.4 Prohibition of Reverse Charge /禁止反向充电

Reverse charge is prohibited. Reverse charge will damage the cells' chemical system, and may lead to gassing, over-heat, fast capacity degradation, and even catching fire.

禁止反向充电。反向充电会破坏电芯的化学体系, 并可能导致产气、过热、快速容量衰减甚至着火。

8.1.5 Prohibition of Charge to 0V Cells /禁止0V充电

Cell is prohibited to be charged when its voltage is 0V.

当电芯电压降至0V时, 禁止对电芯充电。

8.2 Discharge/放电

8.2.1 Discharge Current/放电电流

Discharge current shall be not over the maximum discharge current specified in this cell specification. Higher discharging current may cause cell over-heat and fast capacity degradation.

放电电流不能超过本规格书规定的最大放电电流。过大的放电电流会导致电芯过热和快速容量衰减。

8.2.2 Discharge Temperature/放电温度

Cells shall be discharged according to the temperature condition specified in this cell specification.

电芯放电温度必须遵守本规格书所规定的电芯放电温度条件。

8.2.3 Over Discharge/过放

Cells could be in an over-discharge status due to self-discharge in long time storage. So cells shall be charged periodically to keep the voltage above 2.8V to prevent over-discharge. Over-discharge may cause fast capacity degradation and gassing.

由于电芯的自放电，长期储存的电芯可能会处于过放电状态。因此长期储存的电芯应定期充电，保证电压处于2.8V以上，防止电芯过放电。过放电会导致电芯产气以及快速容量衰减。

8.3 Protection Functions for Batteries and Host Devices/电池和主机的保护功能

Below protection functions are required for battery packs and host devices to keep the cells under safe usage conditions: over charge protection, over discharge protection, over current protection, over heat protection, and short circuit protection.

电池pack或主机应具备以下保护功能，以保证电芯处于安全的使用环境：过充保护、过放保护、过流保护、过热保护以及短路保护。

8.3.1 Over Charge Protection/过充保护

Over-charge protection shall be triggered and stop charging if the cell voltage reaches charge cut-off voltage. The host devices and battery pack shall be designed to indefinitely withstand the maximum voltage from the adapter, under a single fault condition, to prevent a cascading failure through the system to the battery pack and/or cell.

当电芯电压达到充电截止电压时，过充保护功能可以触发并停止充电。电池pack和主机应能承受来自充电器的最大电压以防止因系统连锁故障而导致电池pack或电芯失效。

8.3.2 Over Discharge Protection/过放保护

Over-discharge protection shall be triggered and stop discharging if the cell voltage is lower than the threshold of over-discharge cut-off voltage.

当电芯电压低于过放截止电压的阈值时，过放保护功能可以触发并停止充电。

8.3.3 Over Current Protection/过流保护

Over current protection shall be triggered and stop discharging when the charge current is higher than the specified current limitation. The battery pack shall have at least one over current protection circuit or device designed to prevent the cell to be charged with higher current than the specified charge current.

当充电电流高于规定的充电上限电流时，过流保护能可以触发并停止充电。电池pack或主机至少具备一重过流保护功能。

8.3.4 Over Heat Protection /过热保护

At least one thermal protection device or mechanism is required for the battery pack or host device. For a thermistor type temperature protection circuit, all packs of the same model shall have the same voltage to temperature translation (acceptable tolerance no more than $\pm 10\%$), with consideration for any temperature lag over time.

电池pack或主机至少具备一种热保护装置或机制。对于热敏电阻类温度保护电路，所有的pack应该具有相同的电压温度转换系数，可以接受的公差范围为 $\pm 10\%$ ，同时应考虑温度的时间滞后效应。

During charge and discharge, the temperature of the cell shall be monitored. When temperature limitations are exceeded, action shall be taken to mitigate hazards. Action should include shutdown, or disabling of charging, or other protective action. The action may be taken by the battery pack and/or host.

在充放电过程中，应监测电池的温度。当超过温度限制时，应采取措施减轻危害。行动应包括关机，或禁用充电，或其他保护行动。该动作可由电池组和/或主机执行。

8.3.5 The Limitation of Charge Time/充电时间限制

In order to prevent abnormal cells or battery packs, charge time shall be limited. When time limitation is reached, the host device or the battery pack should stop charging.

为防止异常电芯或pack，应设定充电上限时间。当充电时间达到上限时间时，主机或pack应停止充电。

8.3.6 Pre-Charge Function/预充电功能

The system shall not initiate normal charging if the battery voltage is below the over-discharge protection voltage. In this case, the system may support a pre-charging function to increase the battery voltage above the specified threshold. The pre-charge method is shown below:

Cell is charged with a small current ($\leq 0.02C$) for approximately 30 minutes. When the voltage reaches 2.8V, cell can be charged with normal current. In case the (individual) cell voltage cannot rise to 2.8V within the pre-charging time, then the charger shall have functions to stop further charging and display the cell/pack is at abnormal state.

如果电池电压低于过放保护电压，系统应该禁止常规充电，而启动预充电模式。预充电模式下，用小电流 ($\leq 0.02C$) 充电，当电压达到2.8V时，启动常规充电方式。如果(个别)电池在预充电时间内电压不能上升到2.8V，则充电器应具有停止继续充电并显示电池/电池组处于异常状态的功能。

8.4 Notice for Battery Pack Design/电池 pack 设计建议

8.4.1 Tab Welding/极耳焊接

1) Ultrasonic welding, laser welding or spot welding is recommended to connect cells with PCM or other parts.

1) 建议使用超声焊接、激光焊接以及点焊方法来焊接电芯和PCM或其它部件。

8.4.2 Cell Fixing/电芯固定

1) Cells are not allowed to be movable in the battery pack.

1) 电芯在pack中不允许有移动现象。

2) Short circuit of cell in a battery pack or host device are not allowed. Insulation layers between wiring and the cell are required to prevent short circuit. The battery pack or host device shall be structured without any potential short circuit.

2) 禁止电芯在电池pack或主机中出现短路，电芯和线路间要有绝缘层防止短路，电池pack和主机要从结构上做防短路设计。

9 Handling Precautions and User's Guidelines/操作注意和用户指引

9.1 Storage of Cells/电芯储存

Cells shall be stored at the temperature condition and the humidity condition specified in this cell specification always. The voltage for long time storage shall be between 3.2V and 3.6V .

电芯应在本规格书规定的温度和湿度条件下储存。长期储存的电芯电压应保持在3.0V和3.6V之间。

9.2 Handling of Cells/电芯操作

1)The aluminum-polymer packing foil can be damaged by sharp stuffs such as Ni-tabs, pins and needles or other tooling and fixtures.

铝塑包装膜易受尖锐物（如Ni极耳、大头针或其它工装夹具）损伤。

2)Do not bend or fold the top sealing section. It will damage the top sealing and cause leakage.

请勿弯折电芯顶封处，易造成顶封破损漏液。

3) Don't unfold the side sealing edge. Or the aluminum layer of the packing foil will be damaged, which will lead to leakage.

请勿展开侧封边，否则铝塑包装膜中铝层会受损并引起漏液。

4) Don't fold or bend cell tabs. Tabs are fragile and may be broken after folding or bending.

请勿弯折电芯极耳，极耳较脆弱，弯折极耳易造成损伤。

5) Do not drop or bend cell.

请勿弯折或跌落电芯。

9.3 User's Guidelines/用户指引

9.3.1 Below user's guidelines shall be made available to the battery users with the cell inside through one or more of the following methods properly: printed on the battery label, printed on the host device label, printed in the user's manual, or posted in a help file or Internet website:

以下用户指引应通过电池标签、主机标签、印刷用户手册、帮助文件或网站等形式提供给用户：

1) Do not disassemble or open, crush, bend or deform, puncture, or shred cells, which may cause cell internal short circuit and lead to firing.

1) 请勿拆解或打开、挤压、弯折或扭曲或剪切电芯。上述行为会导致电芯内短路并导致起火。

2) Do not modify or remanufacture, attempt to insert foreign objects into the battery cell,

2) 不要改变或改造电芯，不要尝试把异物插入电芯。

3) Do not immerse or expose to water or other liquids, or expose to fire, explosion, or other hazard.

3) 不要置电芯于水或其它液体中，或暴露在火、爆炸或其它危险环境中。

4) Only use the battery for the system for which it was designed.

4) 只在为其所设计的体系中使用该电芯。

5) Only use the battery with a charging system that has been qualified with the system per standard. Use of an unqualified battery or charger may present a risk of fire, explosion, leakage, or other hazards.

5) 只使用经过认证合格的充电系统充电，使用未经认证的充电器会导致起火、爆炸、漏液等危险。

6) Do not short circuit a battery or allow metallic or conductive objects to contact the battery terminals.

6) 请勿短路电池或允许导电金属物接触电池的正负极端子。

7) Replace the battery only with another battery that has been qualified with the system. Use of an unqualified battery may have a risk of fire, explosion, leakage, or other hazards.

7) 使用经过系统认证合格的电池取代现有电池，使用未经认证的电池会有起火、爆炸、漏液等危险。

8) Promptly dispose of used batteries in accordance with applicable local regulations.

8) 合理处置废旧电池或遵照本地规范处置。

9) Battery usage by children should be supervised.

9) 儿童应在大人监管下使用电池。

10) Improper battery use may result in a fire, explosion, or other hazard.

10) 不合理地使用电池有导致起火、爆炸等危险。

11) In the event of a battery leak, do not allow the liquid to come in contact with the skin or eyes. If contact has been made, wash the affected area with large amounts of water and seek medical advice.

11) 电池发生泄漏时，请勿让电池液体接触到皮肤或眼睛。如不幸发生，应立即用大量水冲洗，并寻求医生帮助。

12) Seek medical advice immediately if a battery has been swallowed.

12) 如发生吞咽电池，应立即寻求医生帮助。

9.3.2 The following indications, notifications, and dialogue/messages, at the system level, or an equivalent statement, may be displayed along with recommended actions as appropriate:

以下提示、告知、对话或信息应在系统层面或相似的声明并结合建议措施一同展示出来：

- 1) Abnormal battery temperature alert. 电池温度异常警告。
- 2) Abnormal host device and/or battery DC input voltage alert. 主机和/或电池输入直流电压警告。
- 3) Abnormal current draw alert.
3) 放电电流异常警告。
- 4) Battery communication fail/time-out alert.
4) 电池通讯失效或超时警告。
- 5) Incompatible battery alert.
5) 不兼容电池警告。
- 6) Alert for other malfunctions that may lead to hazards.
6) 其它可能导致危险的功能异常警告。

9.4 Others/其它事项

- 1) Never incinerate nor dispose the cell in fire. It may cause cell explosion.

请勿焚烧电池或置电池于火中，可能会导致爆炸。

- 2) Never try to replace the battery. The battery replacement can only be done by the technicians with professional training.

请勿尝试置换电池。电池置换只能由经过专业培训的人员进行。

- 3) Prohibition to Use Damaged Cells

The cells might be damaged during shipping. If any abnormal phenomenon is found, such as deformation of the cell package, smelling of electrolyte, electrolyte leakage and others, the cells shall never be used any more.

禁止使用破损电芯

电芯在运输过程中可能会受到损伤，如电芯发现任何异常现象，如电芯包装变形，闻到电解液气味，电解液泄漏等，电芯应立即报废不得使用。