

Powered by NFPP Built for Reliable Energy



Heat tolerant.
Cold resilient.



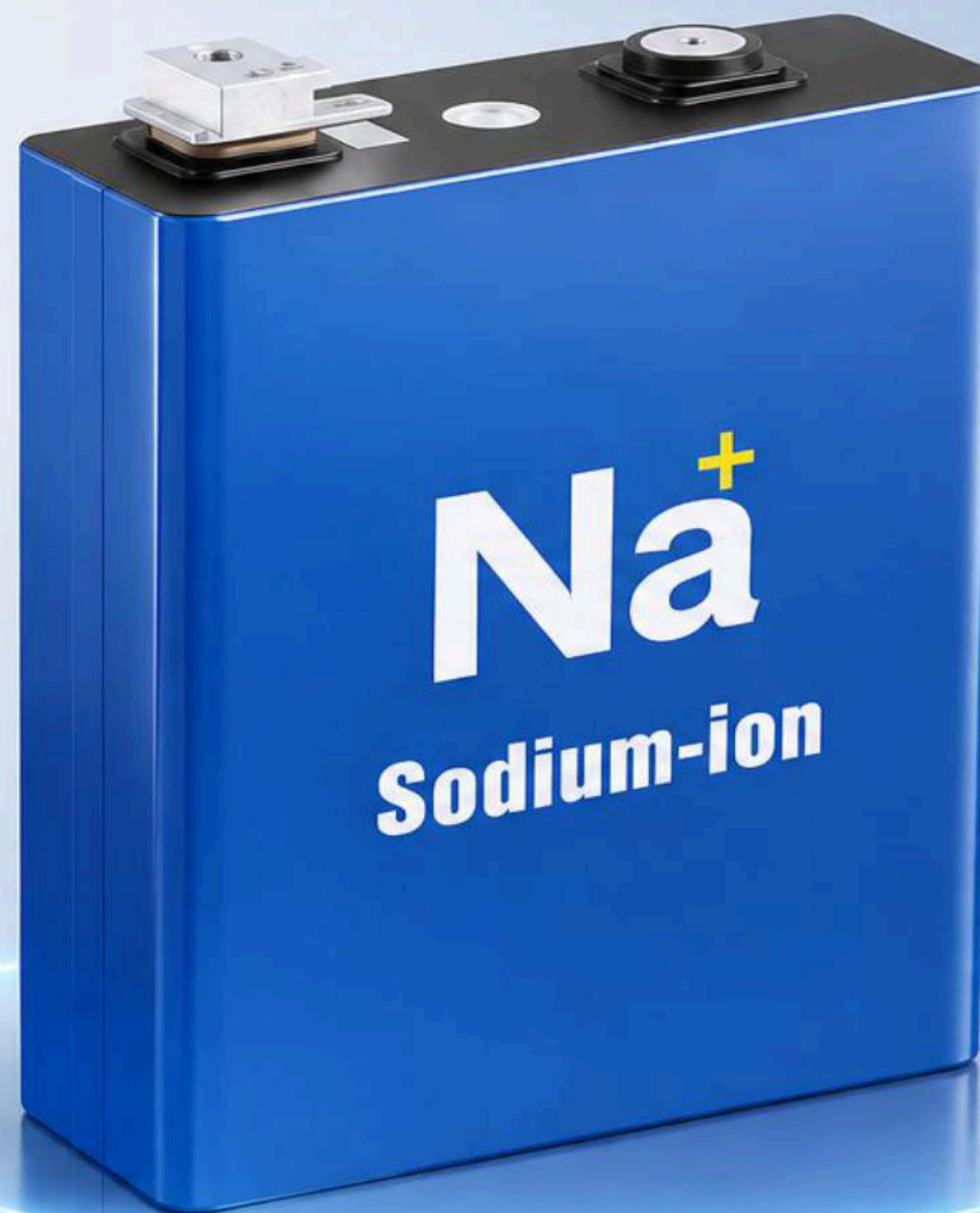
More Safe.



Long life.



Consistent
performance.



Wide Temperature
-40°C ~ 70°C



High Safety
No Thermal Runaway



Long Cycle Life
4000+ Cycles

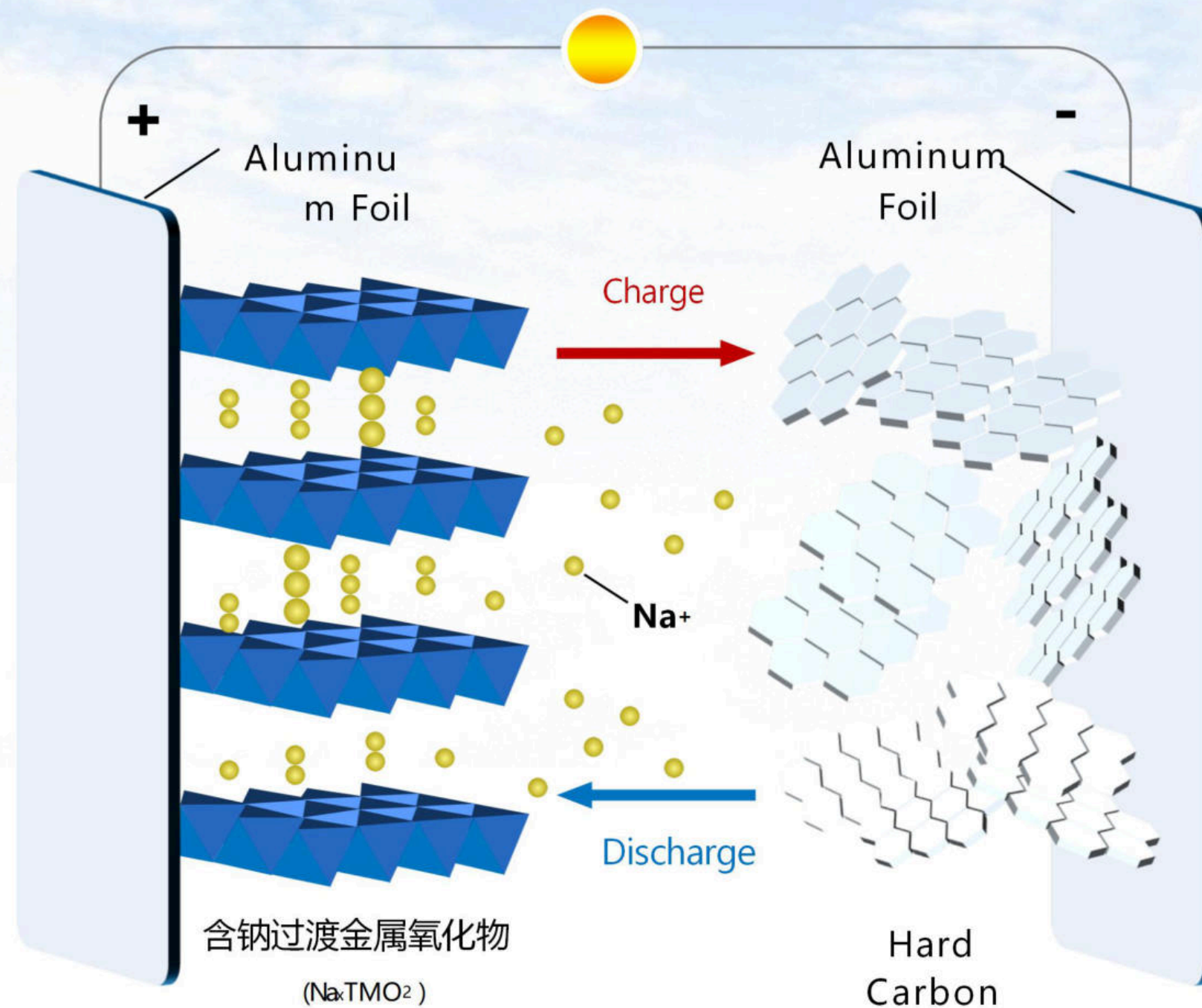


Stable Output
Heavy-load Ready



Eco-friendly
Sustainable Choice

High Compatibility



Same working principle



Similar production process



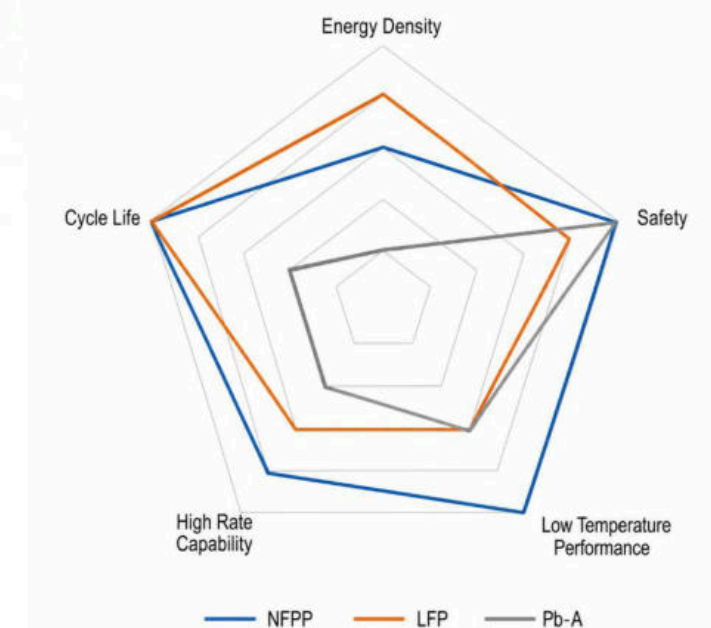
Directly replaced in terms of cathode, anode and electrolytes

comparison of Different cells

Item	Lead-Acid	LFP	NMC/NCA	TMO	NFPP
Energy Density (Wh/kg)	30~50	120~180	220~280	120~160	100~120
Cycle Life	300~500	> 6000	> 800	> 3000	≥8000
-20°C Capacity Remaining	< 60%	< 70%	> 70%	>90%	>90%
-40°C Capacity Remaining	< 0%	< 0%	< 0%	> 80%	> 85%
Energy Efficiency	/	95%	/	93%	97%
High Temp	Middle	Good	Middle	Good	Better
Over-discharge	Bad	Bad	Bad	Good	Better
Safety	Good	Good	Bad	Middle	Better (pass nail penetration)
Eco-friendly	Bad	Good	Good	Good	Better
Rate		> 5C	> 5C	> 10C	≥10C

➤ When Compared to LFP

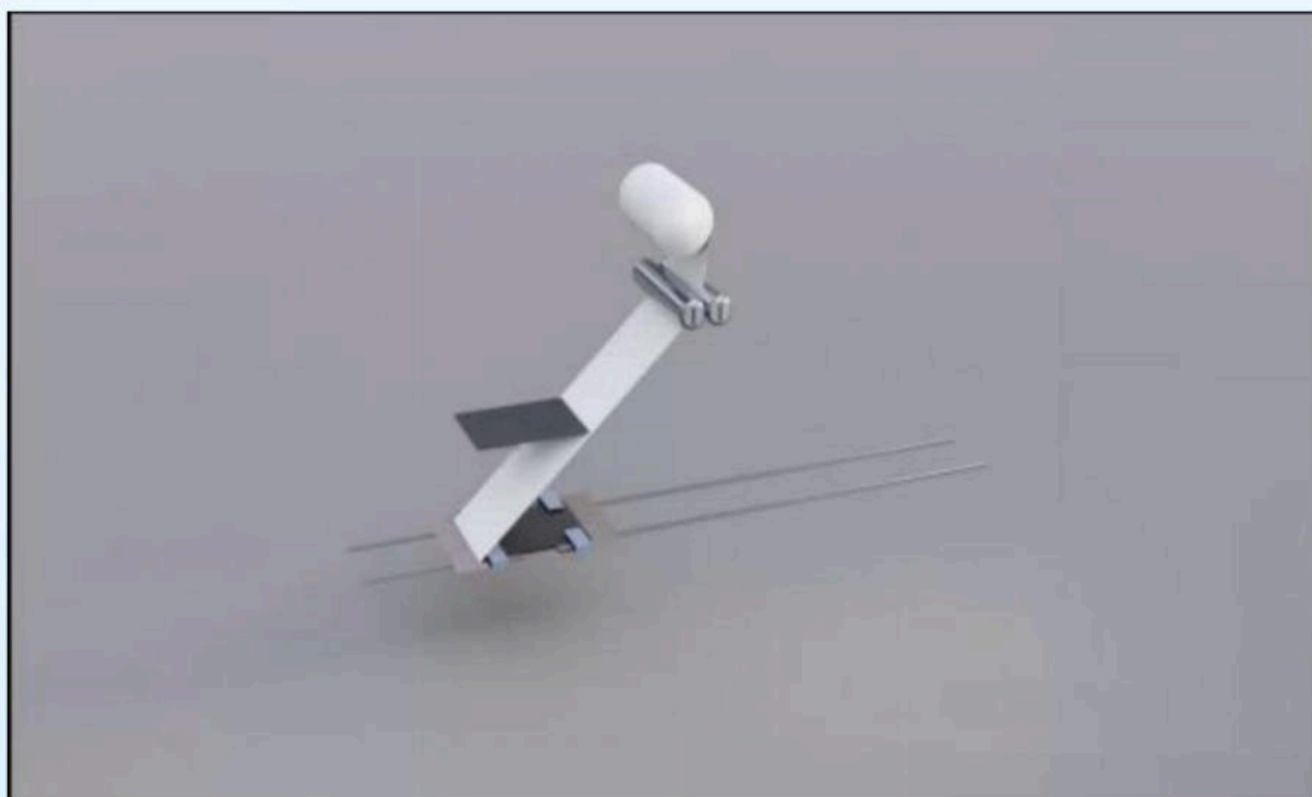
- a) Higher energy conversion efficiency
0.25P (≥97%)
- b) High thermal runaway tolerance and less heat generation, pass nail penetration
- c) Excellent rate performance
- d) Zero volt storage and transportation
- e) Resource and policy advantages





Production Process

The prismatic cells adopt stacking technology, which has higher space utilization, high energy density, low impedance, low heat production and high efficiency.



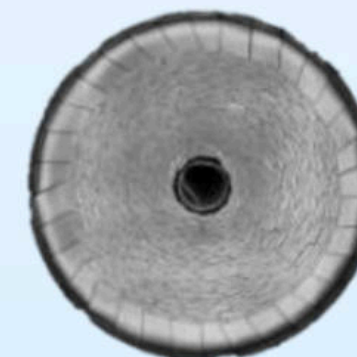
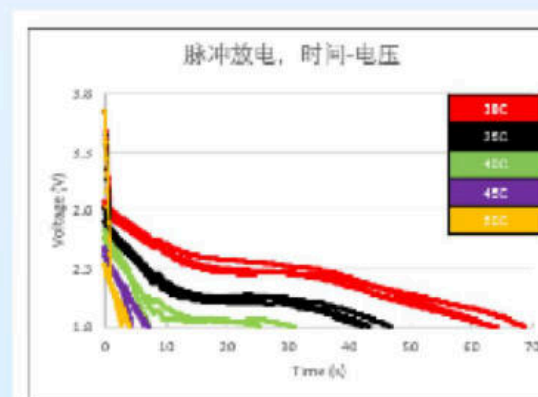
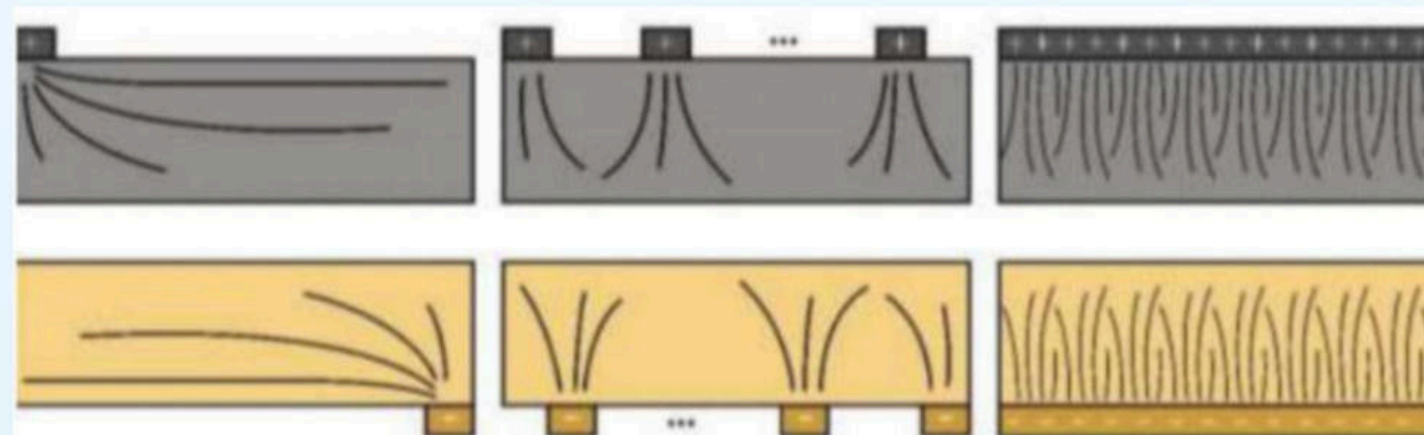
Stacking Process

Cylindrical cells adopt tab-less design with low temperature rise, internal resistance and optimized heat dissipation performance.

Single-tab

Multi-tab

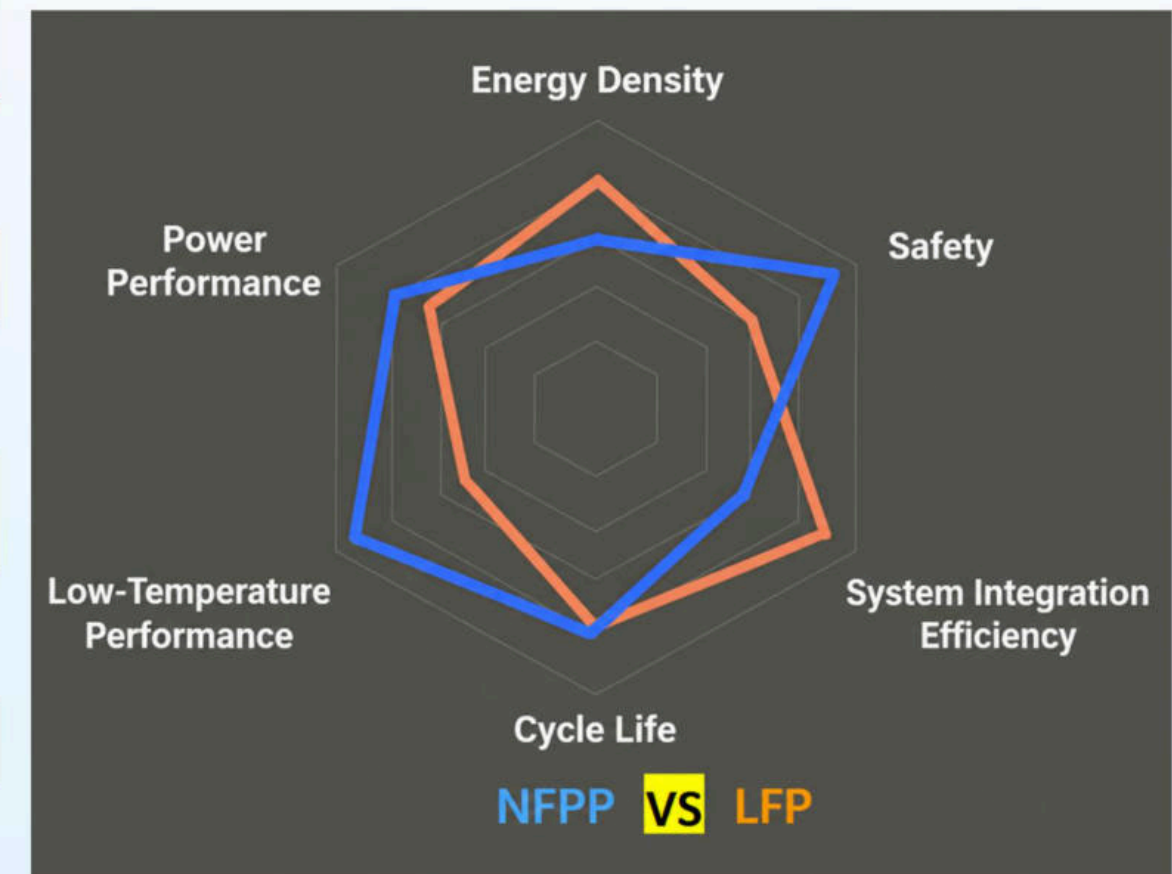
Tab-less



Tab-less design supports at least 50C pulse discharge

Performance Comparison

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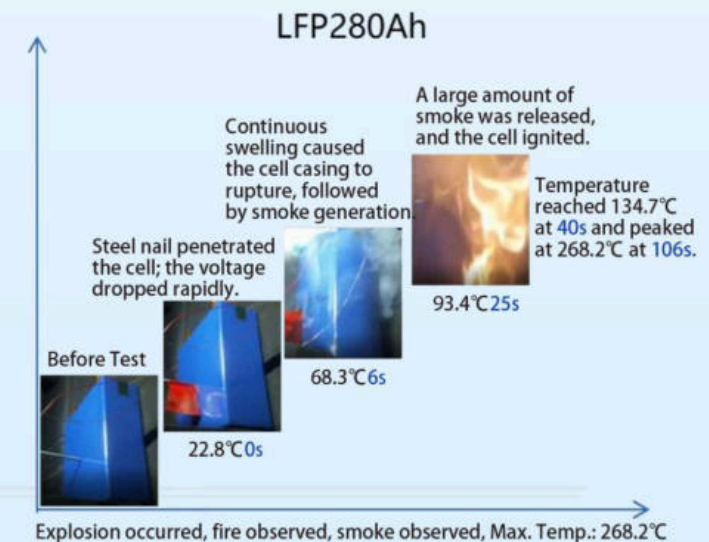
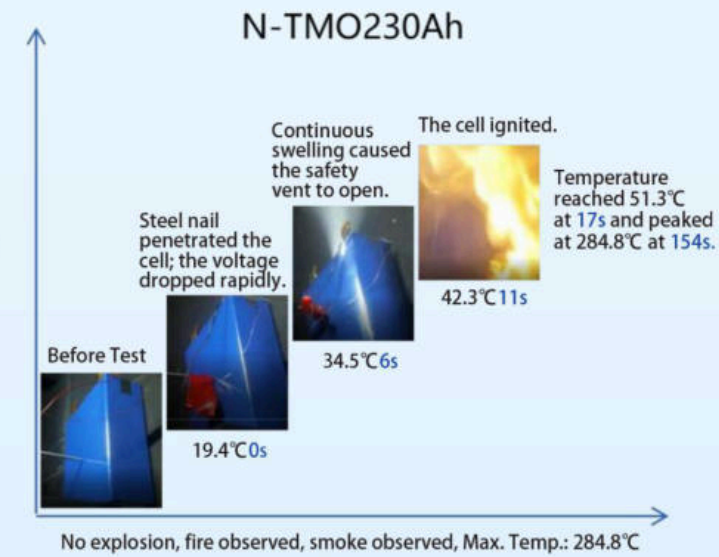
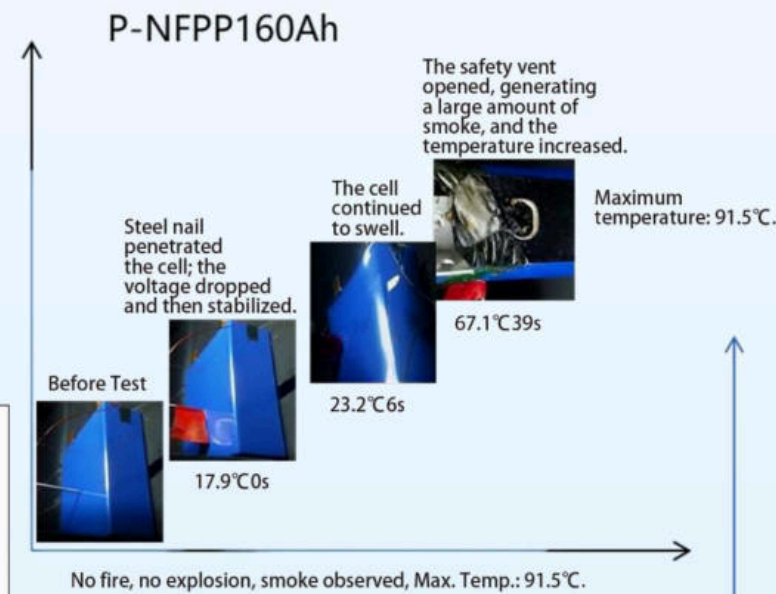
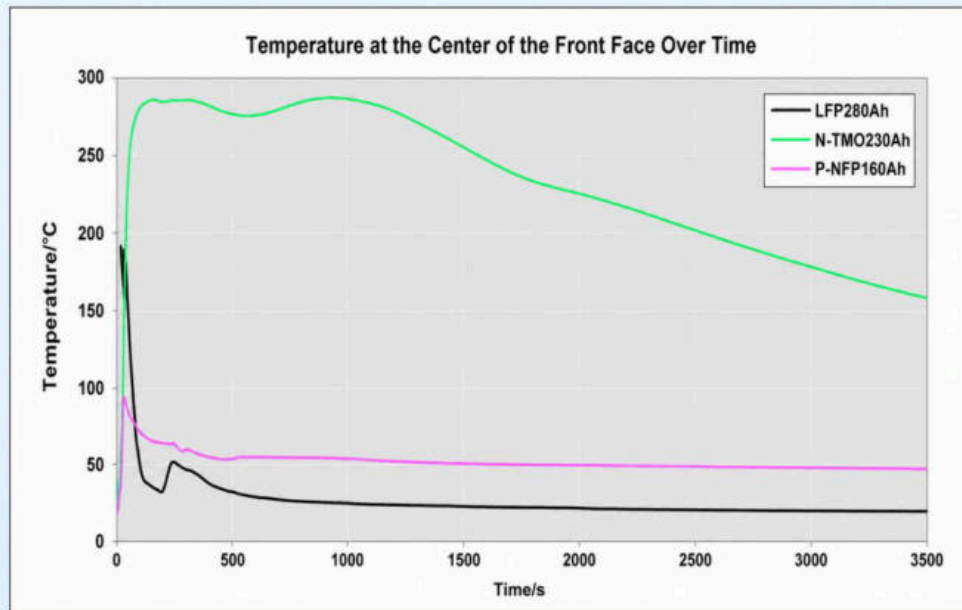


NFPP-Safety Test (Nail Penetration)

Prismatic SIB(NFPP) could pass **Nail Penetration** of GB 43854-2024 Standard

25°C fully charged state, $\phi 5\text{mm}$ steel needle with $(25\pm 5)\text{mm/s}$, through the geometric center of the battery, the steel needle stays in the battery, and observe 1h.

Requirements: no fire, no explosion.



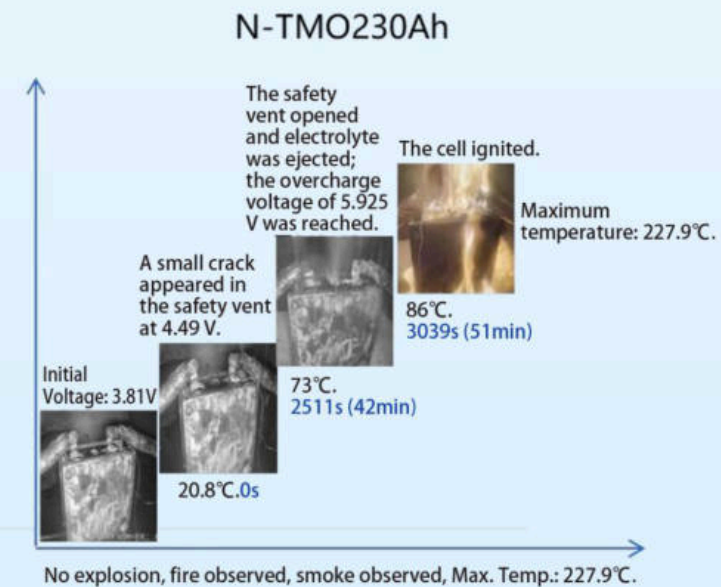
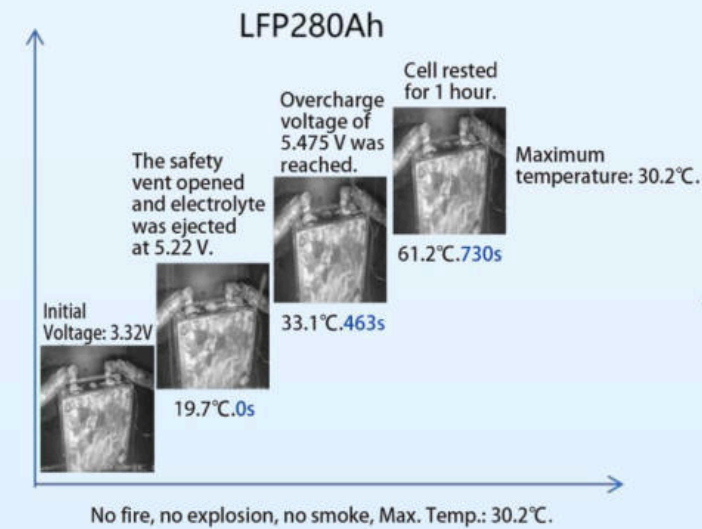
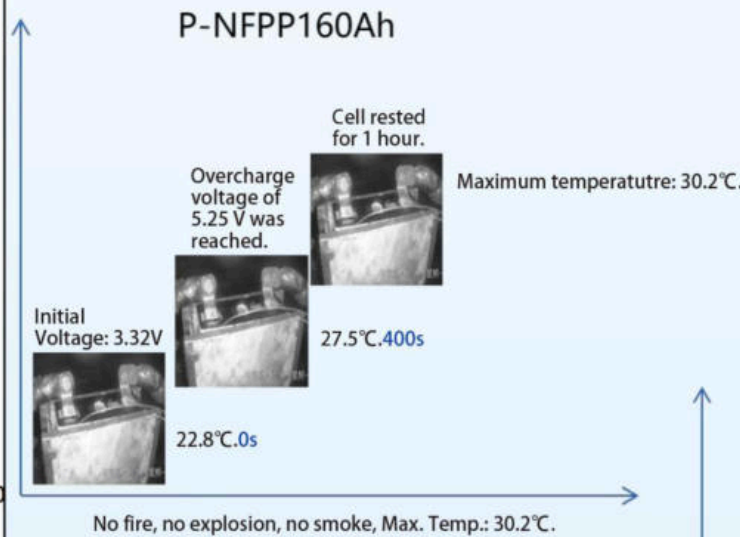
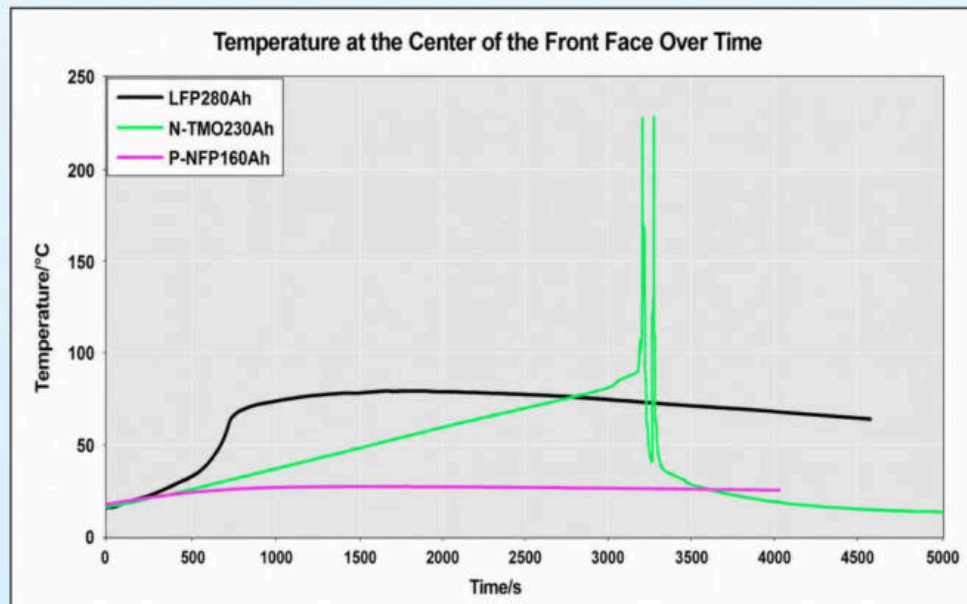
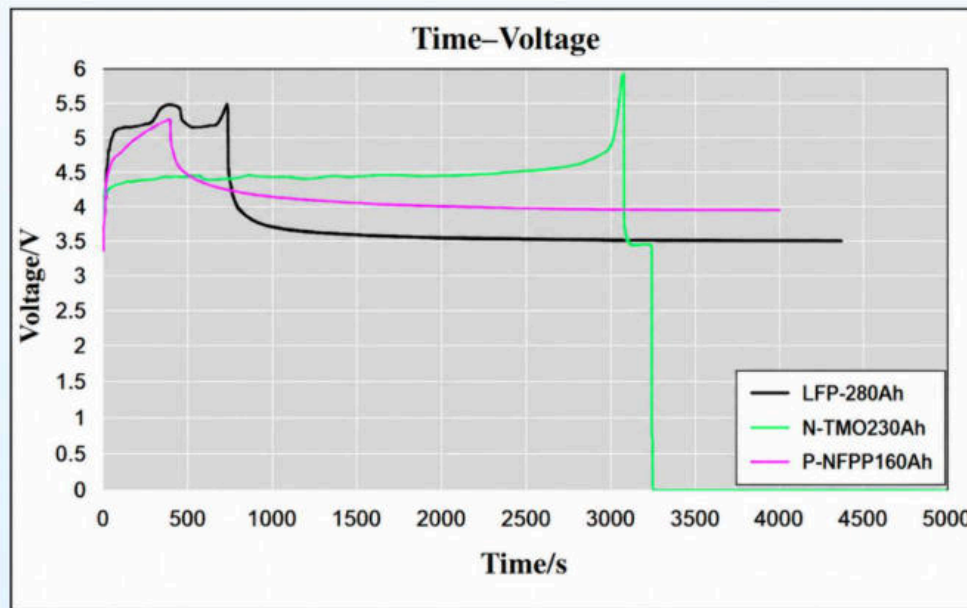
SAFETY

NFPP-Safety Test (Over-Charge)

Prismatic SIB(NFPP) could pass **Over-charge** of GB 44265-2024 Standard

25°C fully charged state, charging with 1C to 1.5 times of the cut-off voltage or time up to 1h , observe 1h.

Requirements: no fire, no explosion, no broken.



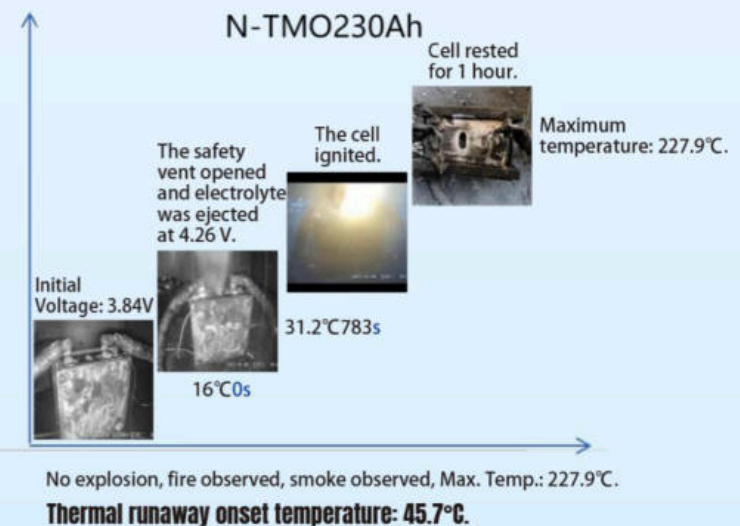
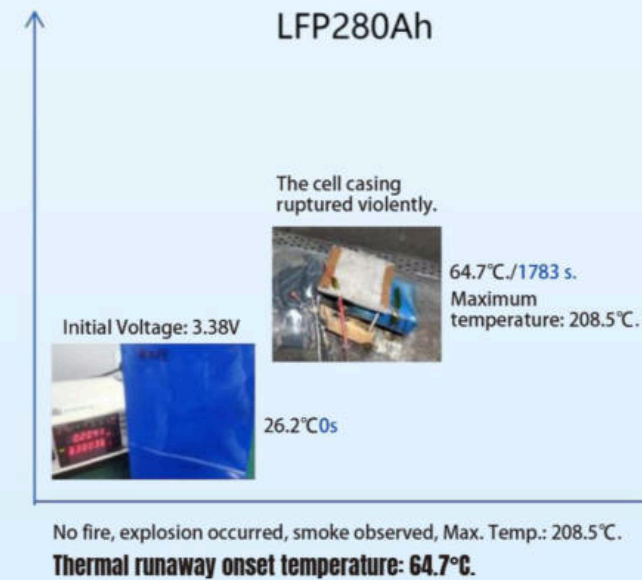
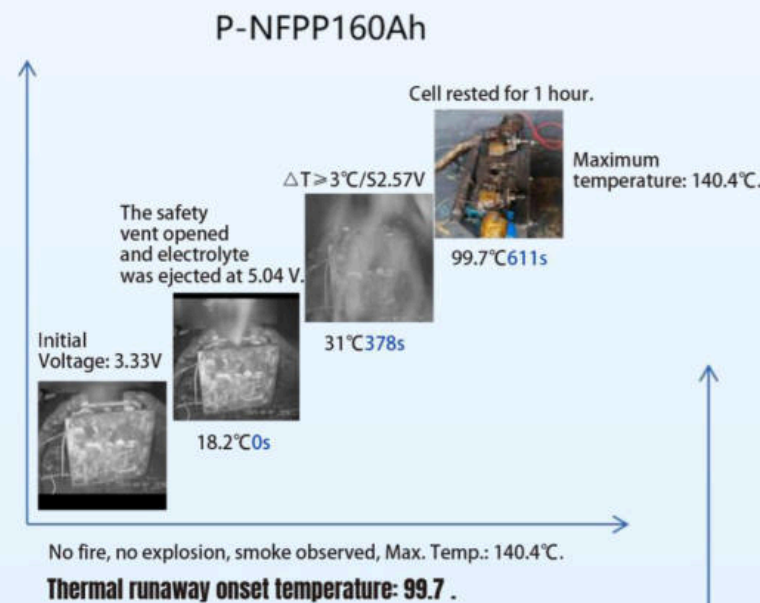
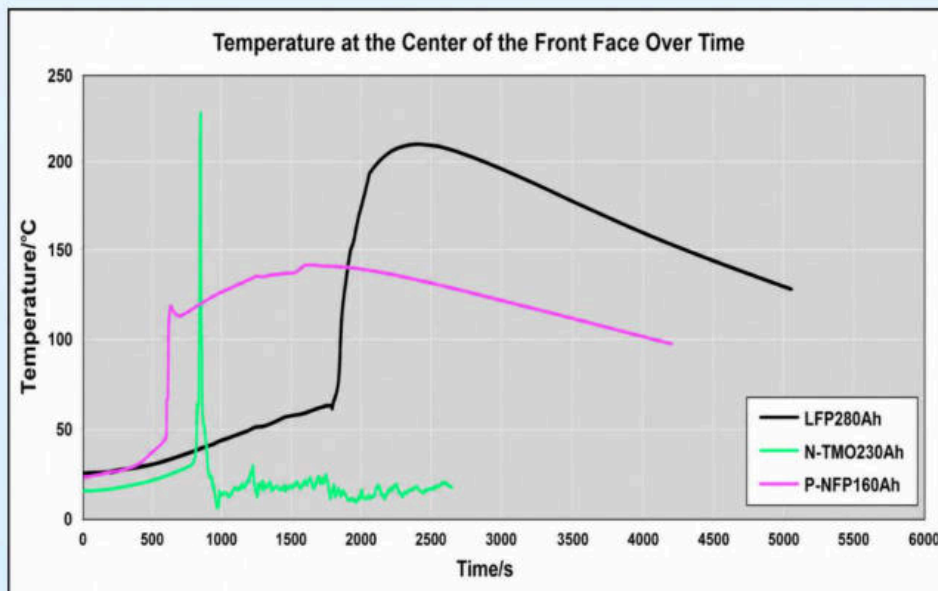
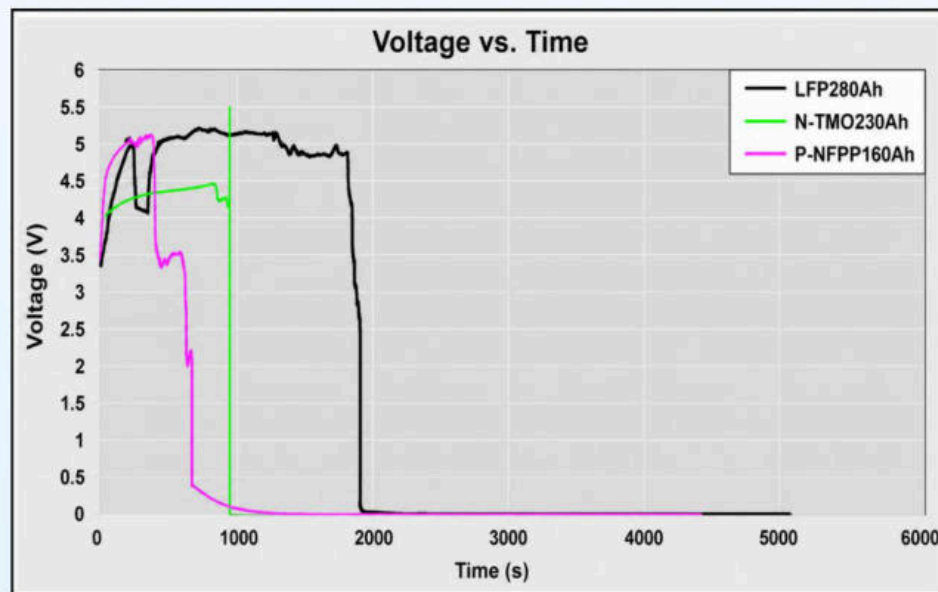
SAFETY

NFPP - Safety Test (Thermal Control)

Prismatic SIB could pass **Thermal Control** of GB/T 44265-2024 Standard

25°C full charge state, charge with 1C constant current and start heating until the cell is out of thermal control or the temperature reaches 300°C, or the test time reaches 4h.

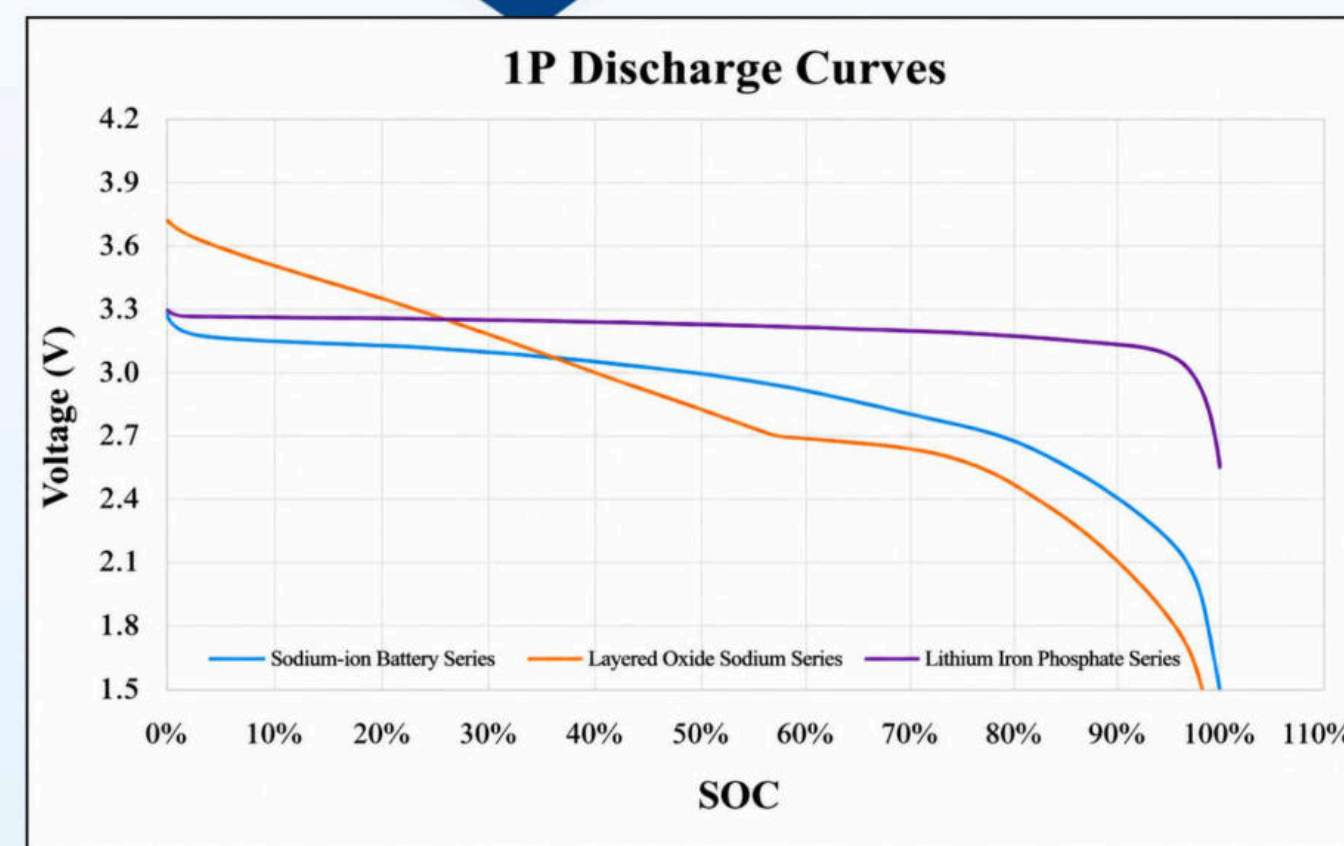
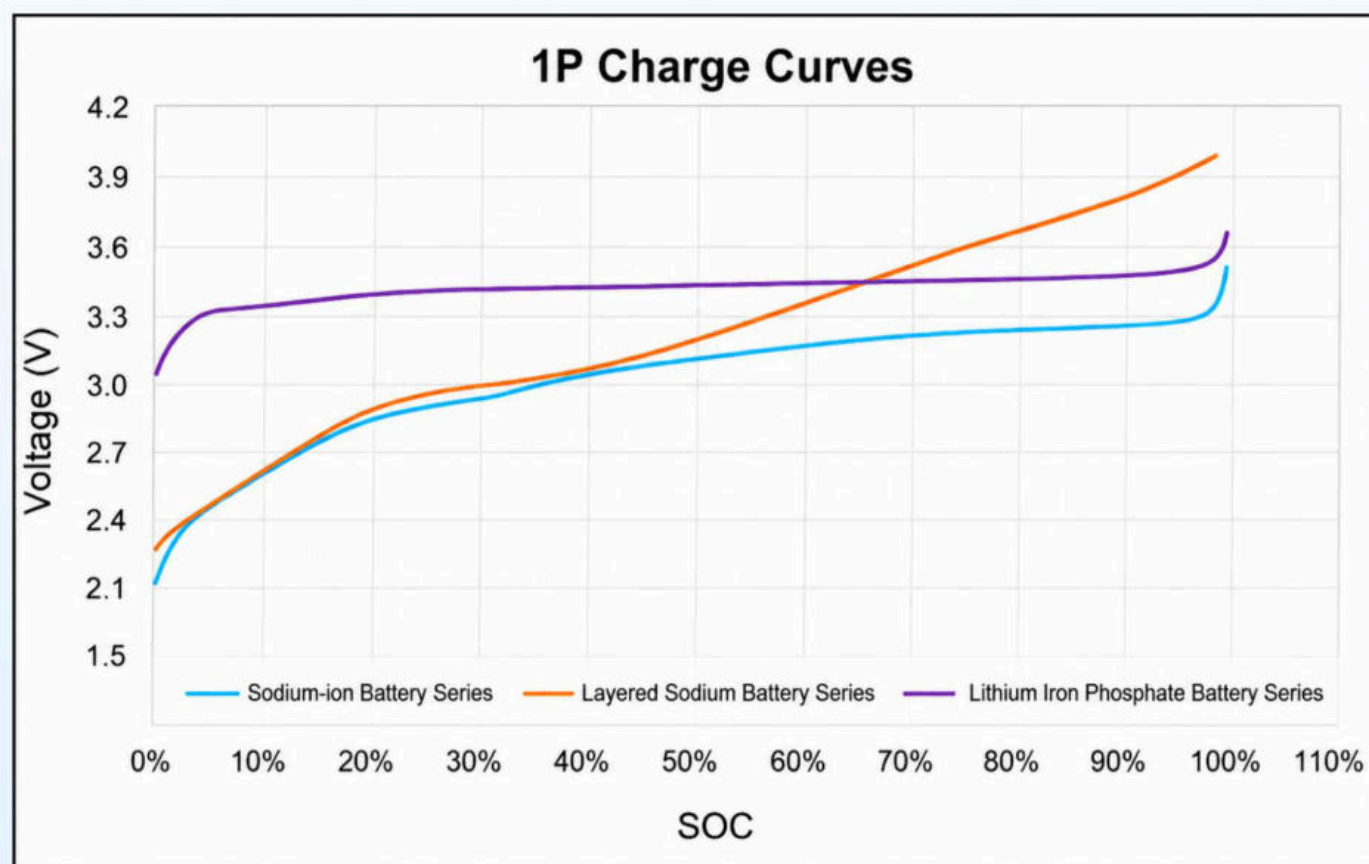
Requirements: no fire, no explosion, no broken.



SAFETY



SIB Introduction-SOC/OCV

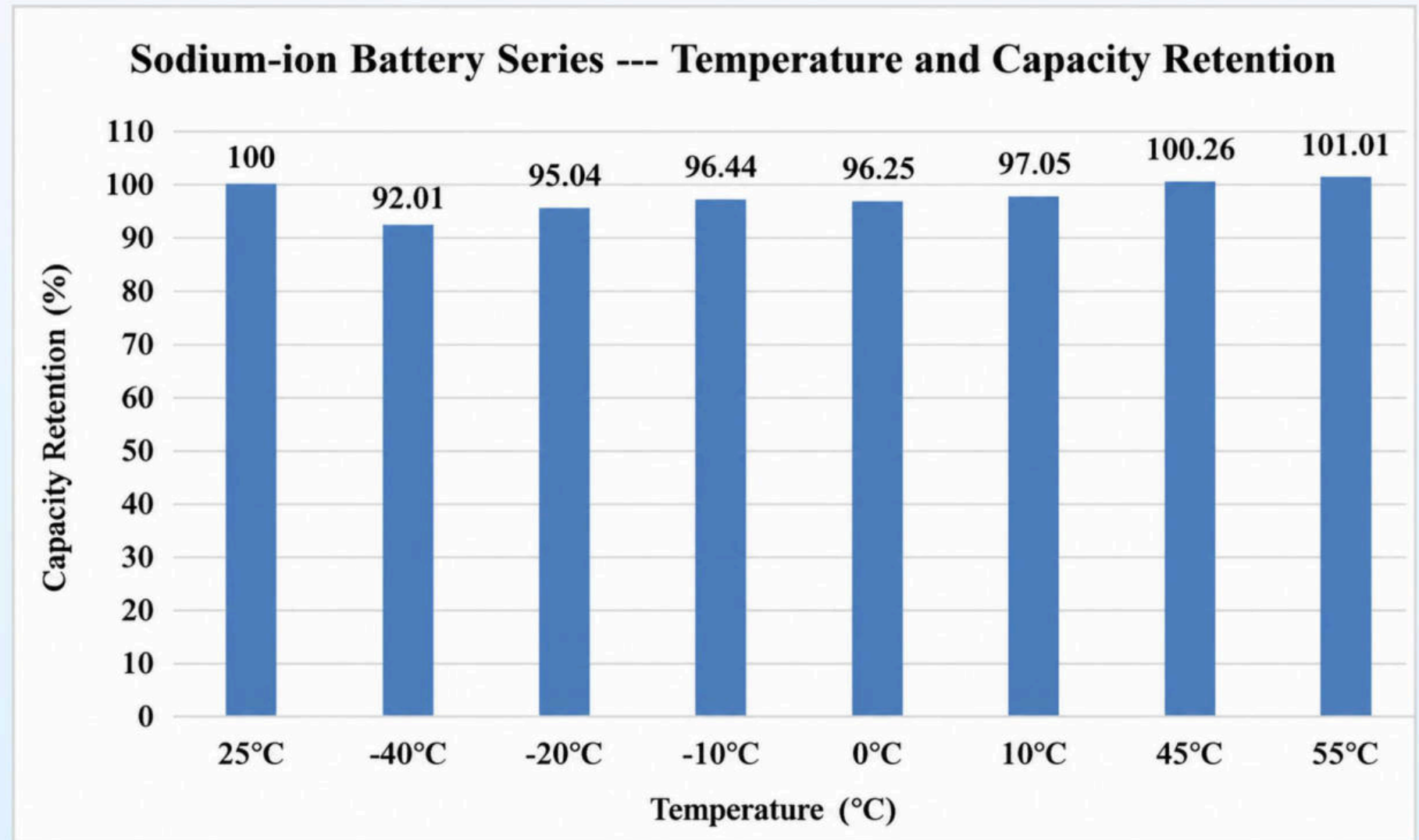
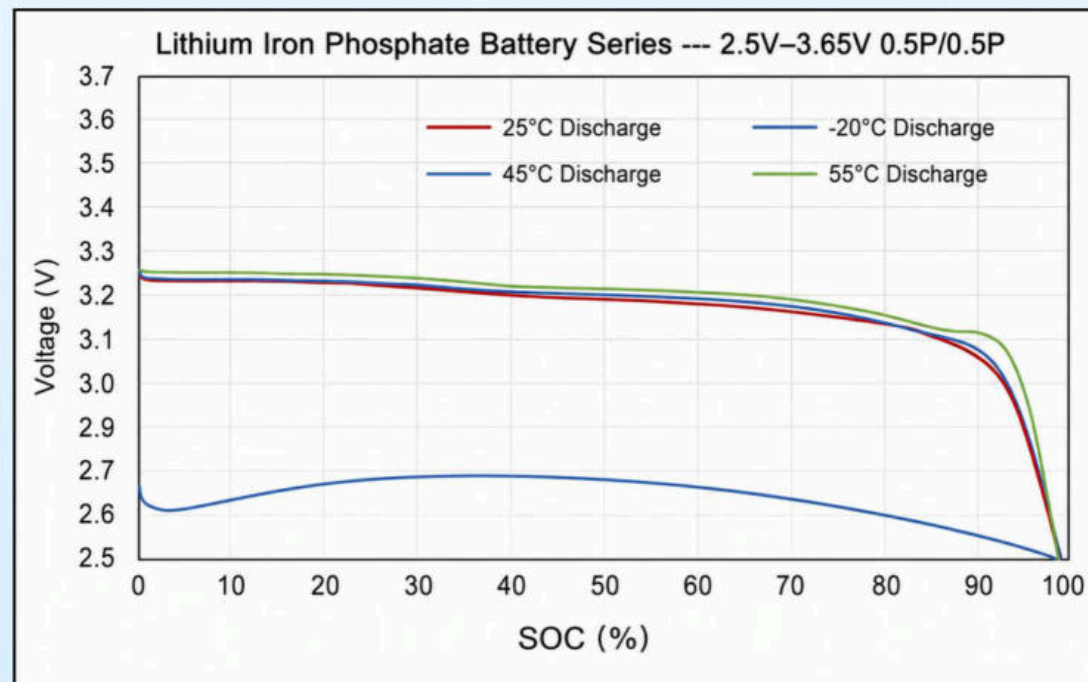
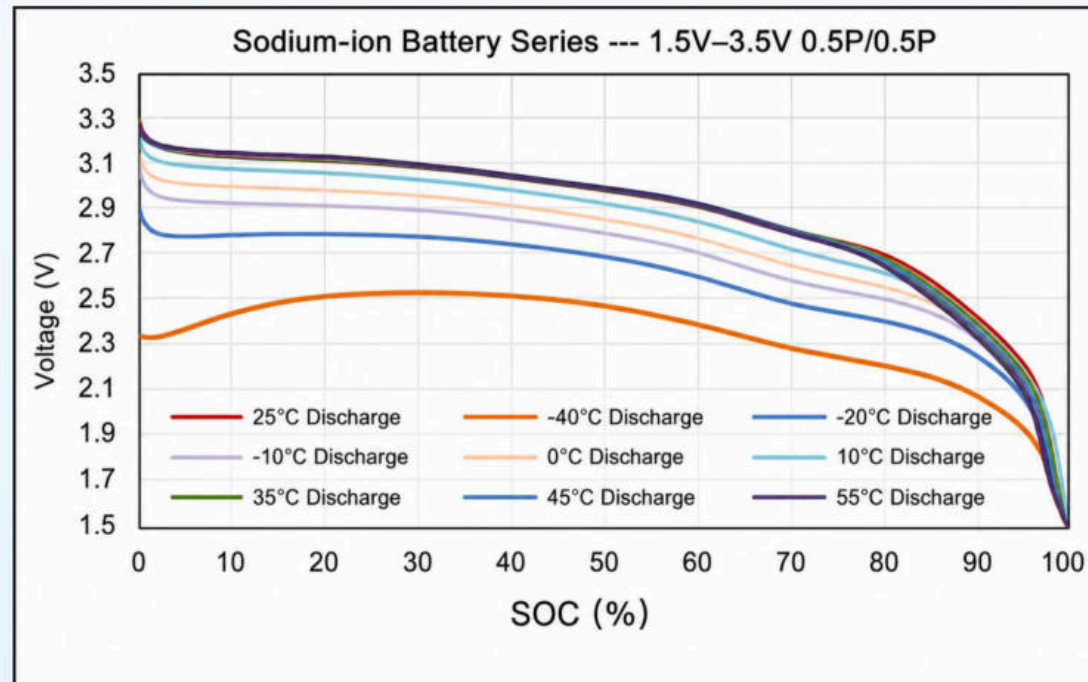


Charge Rate	Capacity Retention		
	NFPP	TMO	LFP
0.25P	100.0%	100.0%	100.0%
0.50P	100.2%	99.6%	100.3%
1.00P	98.9%	96.3%	99.0%

Discharge Rate	Capacity Retention		
	NFPP	TMO	LFP
0.25P	100.0%	100.0%	100.0%
0.50P	99.1%	98.1%	99.4%
1.00P	98.3%	95.1%	99.1%

NFPP-Temp Performance

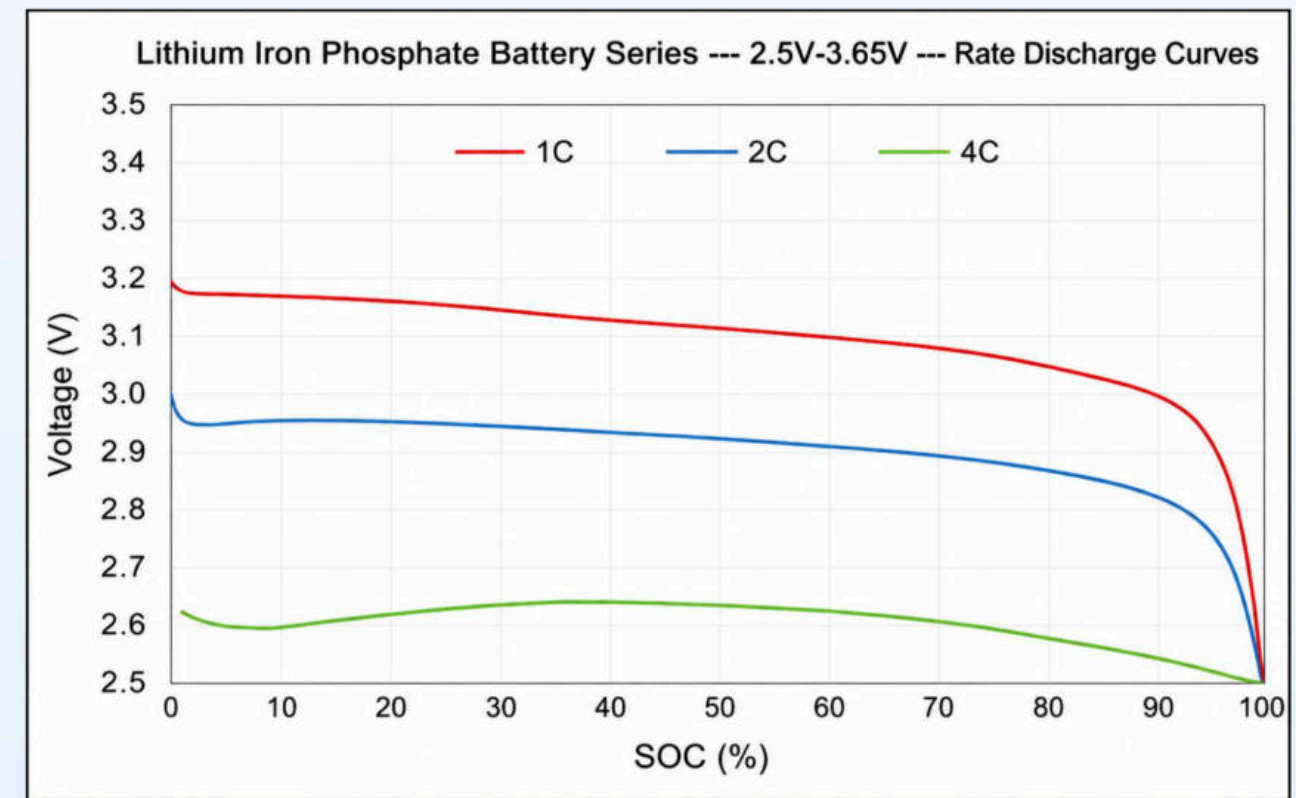
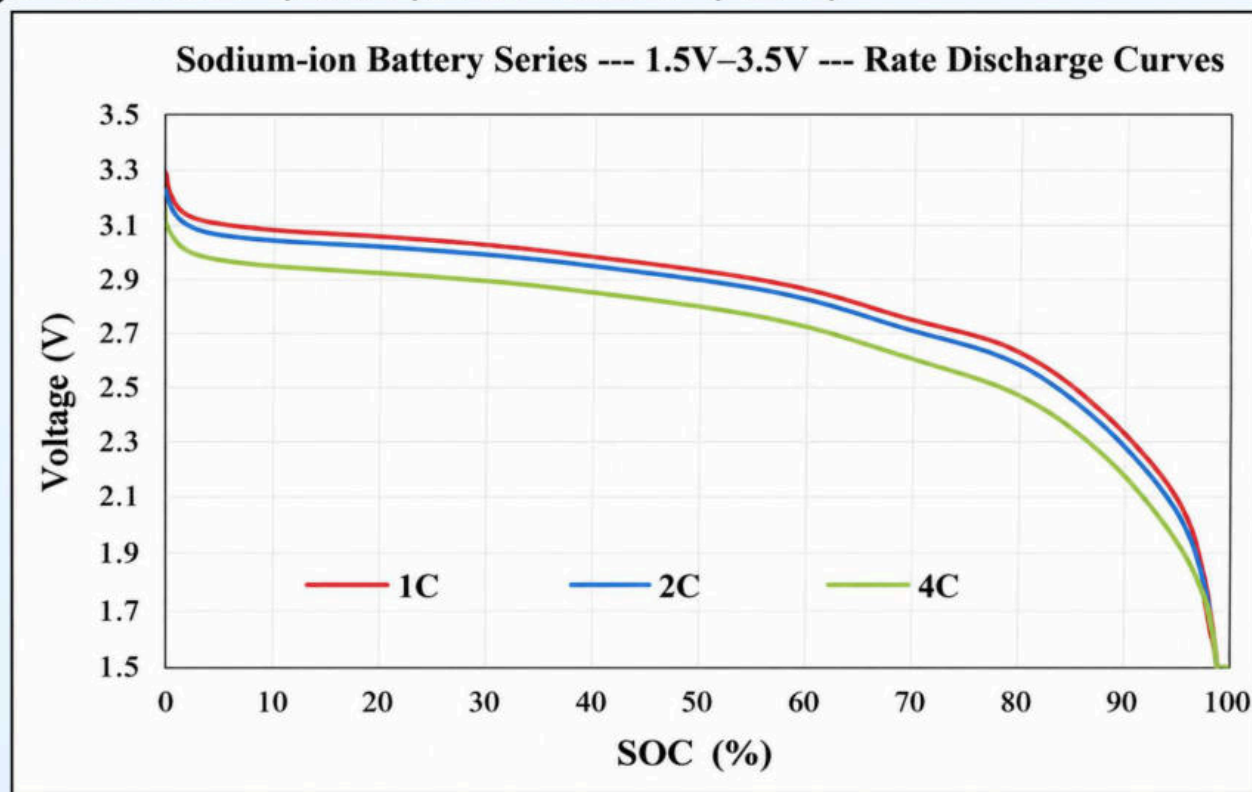
Charge to 3.5V with 0.5P power, set aside for 10min, and then discharge test at different temperature.



Capacity Retention of 95.04% at -20°C.
NFPP-**95.04%**
LFP-**67.8%**

NFPP - Rate Performance

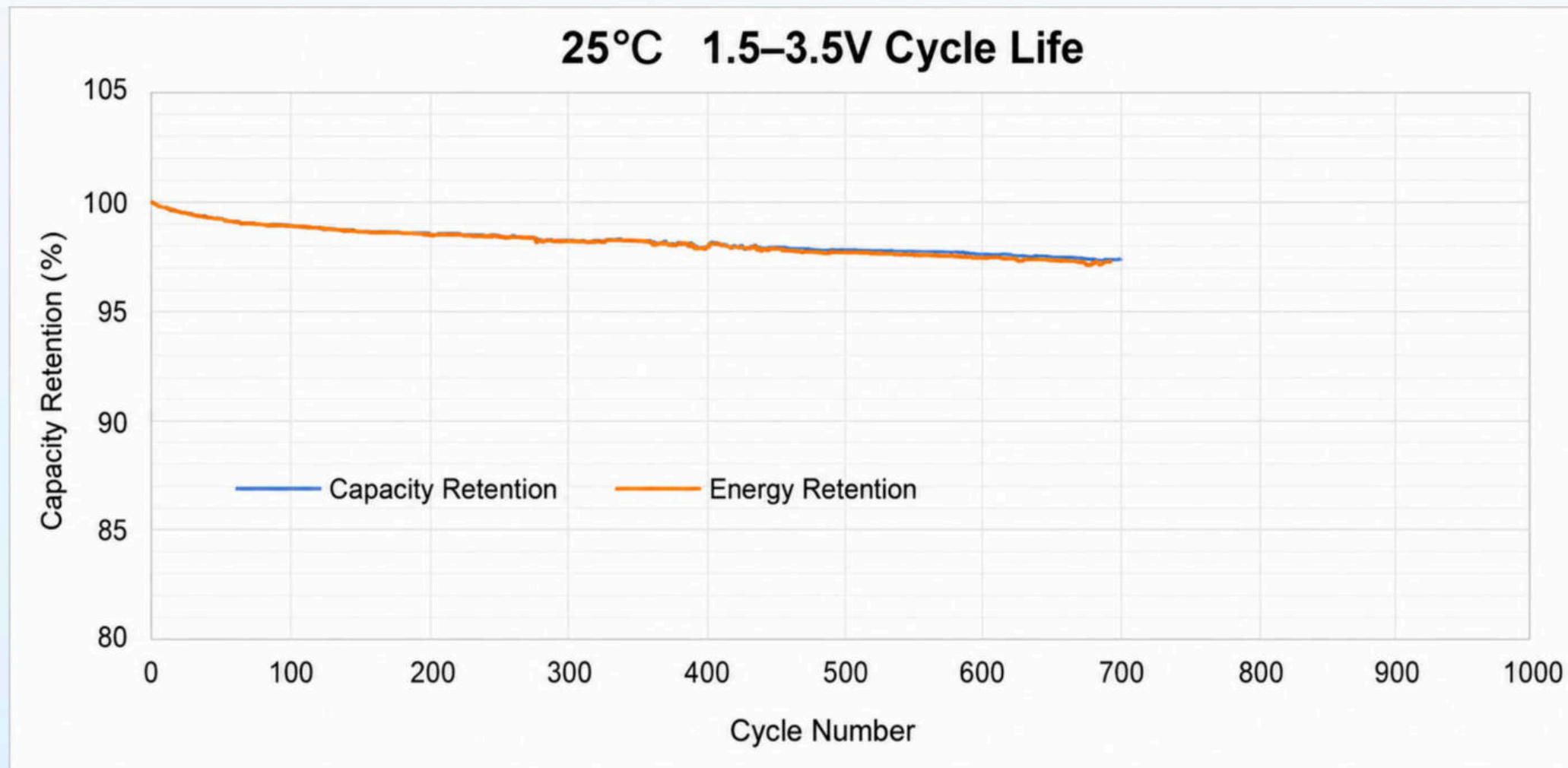
25±3°C, charge with 0.5C current, set aside for 10min, then rate discharge test with 1C/2C/4C current respectively, voltage range 1.5-3.5V (NFPP), 2.5-3.65V (LFPP)



Discharge Rate	Capacity Retention		Nominal Voltage (V)		Max Temp Rise (°C)	
	NFPP	LFP	NFPP	LFP	NFPP	LFP
1C	100%	100%	2.85	3.08	3.5	4.2
2C	99.4%	95.9%	2.83	2.89	5.8	9.7
4C	98.2%	82.8%	2.72	2.61	15.5	22.1

NFPP Performance-Cycle Life

25°C, cycle life with 0.5P/0.5P charge & discharge (100% DOD)



- 0.5P room temperature: cycle life 700 times until now, capacity retention 97.42%, energy retention 97.27%
- Estimated cycle life > 8000 times.



NFPP-Safety Criteria

No.	Test Item	Reference Standard	Test Result	Verdict
1	Over-charge	GB/T 44265-2024	Expansion, no liquid leakage, no fire	Pass
2	Short-circuit	GB/T 44265-2024	No change in appearance	Pass
3	Nail-penetration	T/CIAPS0031—2023	CID open, smoke, no explosion, no fire	Pass
4	Crush	GB/T 44265-2024	no liquid leakage, no fire	Pass
5	Oven Test	GB/T 36276-2018	Expansion, no liquid leakage, no fire	Pass
6	Thermal Control	GB/T 44265-2024	CID open, smoke, no explosion, no fire	Pass



NFPP Cells-Certificate

NTEK 北测 Test Report

Report No.: 2023030125446 Date: January 6, 2023 Page 1/1

Applicant: NANCHANG JIANGSU DEVELOPMENT CO., LTD.
Address: NO. 898, JIANGSU AVENUE, ECONOMIC DEVELOPMENT ZONE, JIANGSU DISTRICT, NANCHANG CITY, JIANGSU PROVINCE

The following member(s) were submitted and identified by the client as:
Sample Name: Rechargeable sodium-ion battery
Model No.: 72173207-MFPF-170Ah

The following information was confirmed by the laboratory:
Testing Period: From December 15, 2022 to December 17, 2022
Test Results: Please refer to test page(s)

Summary of test results:

Test Result	Conclusion
1. In accordance with GB 31246-2022 and GB 31247-2022, the battery is classified as a Class II battery. The battery is classified as a Class II battery. The battery is classified as a Class II battery.	PASS

Testing method: Please refer to test page.
Test Results: Please refer to test page(s).

Test Location: Test Place: Building 11, No. 88, Changshu Road, Changshu District, Suzhou City, Jiangsu Province, China

Signed for and on behalf of: Jiangsu NTEK Testing Service Co., Ltd.

Tested by: [Signature] Reviewed by: [Signature]
Approved by: [Signature] January 6, 2023

NTEK Testing Service Co., Ltd.
Address: Building 11, No. 88, Changshu Road, Changshu District, Suzhou City, Jiangsu Province, China
Tel: +86 512 5201010 Fax: +86 512 5201011 Email: ntekt@ntek.com.cn

RoHs

NTEK 北测 第2页 共2页 Report No.: 2023030125446 Page 2 of 2

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION
化学产品及企业信息

Name of Product 产品名称	Rechargeable sodium-ion battery 可充电钠离子电池
Model/Type 型号	72173207-MFPF-170Ah
Rating 额定容量	2.85V 170Ah 484.5Wh
Applicant 委托单位	NANCHANG JIANGSU DEVELOPMENT CO., LTD. 南昌江蘇發展有限公司
Address of Applicant 委托单位地址	No. 898, Jiangsu Avenue, Economic Development Zone, Jiangsu District, Nanchang City, Jiangsu Province 江蘇省蘇州經濟開發區江蘇大道898號
Manufacturer 生产厂家	NANCHANG JIANGSU DEVELOPMENT CO., LTD. 南昌江蘇發展有限公司
Address of manufacturer 生产厂家地址	No. 898, Jiangsu Avenue, Economic Development Zone, Jiangsu District, Nanchang City, Jiangsu Province 江蘇省蘇州經濟開發區江蘇大道898號
Emergency telephone call 緊急電話	400-1885625/8
Prepared by 制表人	Jake Chen 張嘉南
Reviewed by 審核人	Bao Yu 王博
Approved by 批准人	Jesse Zhang 張志亮

MSDS

MCM 广州邦泰检测技术有限公司

MA CNAS 20180102027 20180102027 20180102027

检测报告

样品名称: 电力储能用钠离子电池单体 (可充电钠离子电池)

样品型号: 72173207-170Ah

样品规格: E55-55-POM-AC-110-170Ah-2.85V-242.20Wh-242.20Ah

委托单位: 南昌江蘇發展有限公司

检测类别: 型式试验 (已见检测报告)

报告日期: 2023-1-12

测试: [Signature] 审核: [Signature] 批准: [Signature]
测试工程师: [Signature] 报告批准人: [Signature]

广州邦泰检测技术有限公司
Guangzhou MCM Certification & Testing Co., Ltd.

41008 380-255 832 474@mcmtest.com www.mcmtest.com

GB/T 44265-2024

CSA GROUP Laboratory Test Data - UL 9540A

Master Contract: 812
Report: 20231114
Project: 8025174
Test Date: 2023

Mr. Tiansheng Hu
Project Manager
For: FPP, Jiangsu Avenue
Project: 8025174
Nanchang, Jiangsu 238888
Client: Nanchang JIANGSU Development Co., Ltd.
Subject: Rechargeable Sodium-Ion Battery Cell Model: 72173207-MFPF-170Ah-2.85V-242.20Wh-242.20Ah

Dear Mr. Tiansheng Hu:

We are pleased to inform you that the testing of your product per UL 9540A has been completed. The results are contained in the report(s) provided as an attachment to this email. The results of the testing are as follows:

We are pleased to inform you that the testing of your product per UL 9540A has been completed. The results are contained in the report(s) provided as an attachment to this email. The results of the testing are as follows:

Note: This Test Report is not an Authorization to apply the CSA Mark to the product. The results contained in the report(s) provided as an attachment to this email are the results of the testing of the product. The results of the testing are as follows:

Please examine the enclosed documents and contact me if you have any questions or would like to make any changes.

On behalf of CSA, I would like to thank you for your business and for our services for your future needs.

Sincerely,
Harvey Peng
CSA-CSCA International Certification Co., Ltd. Executive Director
2101, Building 12, No. 1100, Xiangyin Road, Xiangyin Economic & Technical Development Zone, Xiangyin, Jiangsu, China 211001

Test Date: 2023-11-14

UL 9540A

IEC 62619 Test Report issued under the responsibility of: Solutions

TEST REPORT
IEC 62619
Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary lithium cells and batteries, for use in industrial applications

Report Number: A3-47679477-001
Date of Issue: 2023-04-07
Total number of pages: 21

Name of Testing Laboratory
preparing the Report: Shanghai Tianyi Testing Technology Co., Ltd.

Applicant's name: NANCHANG JIANGSU DEVELOPMENT CO., LTD.
Address: No. 898, Jiangsu Avenue, Economic Development Zone, Jiangsu District, Nanchang City, Jiangsu Province, China

Test specification: IEC 62619:2022
Test procedure: CR Scheme
Non-standard test method: N/A
TMR template used: IEC 62619-0004/1:2022, 5.1.1
Test Report Form No.: IEC62619
Test Report Form(s) Organization: IEC Solutions (China)

Report No.: 2023-04-07-01

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The test results presented in this report shall only be used for the report issued.

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IEC 62619

上海化工院检测有限公司
检测报告
Shanghai Institute of Chemical Industry
Testing Co., Ltd. Test Report

样品名称: 可充电钠离子电池单体 (可充电钠离子电池)

样品型号: 72173207-MFPF-170Ah

样品规格: E55-55-POM-AC-110-170Ah-2.85V-242.20Wh-242.20Ah

委托单位: 南昌江蘇發展有限公司

检测类别: 型式试验 (已见检测报告)

报告日期: 2023-1-12

测试: [Signature] 审核: [Signature] 批准: [Signature]
测试工程师: [Signature] 报告批准人: [Signature]

上海化工院检测有限公司
SHANGHAI INSTITUTE OF CHEMICAL INDUSTRY TESTING CO., LTD.

41008 380-255 832 474@mcmtest.com www.mcmtest.com

UN38.3检测报告

SNAS 货物运输条件鉴定书
Certification for Safe Transport of Chemical Goods

危险品

样品名称: 可充电钠离子电池单体 (可充电钠离子电池)

样品规格: E55-55-POM-AC-110-170Ah-2.85V-242.20Wh-242.20Ah

委托单位: 南昌江蘇發展有限公司

生产单位: 南昌江蘇發展有限公司

鉴定日期: 2023-1-12

鉴定人: [Signature] 审核人: [Signature] 批准人: [Signature]

上海化工院检测有限公司
SHANGHAI INSTITUTE OF CHEMICAL INDUSTRY TESTING CO., LTD.

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海运鉴定书

SNAS 货物运输条件鉴定书
Certification for Safe Transport of Chemical Goods

危险品

样品名称: 可充电钠离子电池单体 (可充电钠离子电池)

样品规格: E55-55-POM-AC-110-170Ah-2.85V-242.20Wh-242.20Ah

委托单位: 南昌江蘇發展有限公司

生产单位: 南昌江蘇發展有限公司

鉴定日期: 2023-1-12

鉴定人: [Signature] 审核人: [Signature] 批准人: [Signature]

上海化工院检测有限公司
SHANGHAI INSTITUTE OF CHEMICAL INDUSTRY TESTING CO., LTD.

41008 380-255 832 474@mcmtest.com www.mcmtest.com

空运鉴定书

ROADMAP-Prismatic(NFPP)

