

# MOLICEL®

## INR-21700-P45B 4.5Ah Power cell

### Characteristics

***Confidential***

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E-ONE MOLI ENERGY CORP.



**MOLICEL®**

# Introduction



- **MOLICEL® INR-21700-P45B 4.5Ah power cell**
- **Cell is capable of continuous cycling at high rates up to 45A**
- **Key Characteristics:**
  - Low cell impedance: <15mOhm DCR at 10s
  - 3C (13.5A) charge capability
  - -40°C discharge capability

# Product Data Sheet



LITHIUM-ION RECHARGEABLE BATTERY

PRODUCT DATA SHEET

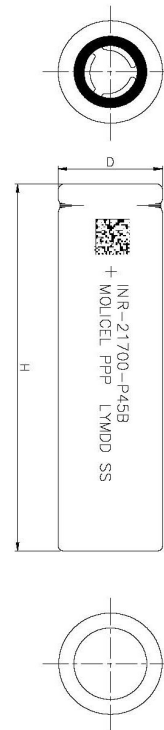
MODEL **INR-21700-P45B**

## Performance Characteristics

Capacity	Typical	4500 mAh 16.2 Wh
	Minimum	4300 mAh 15.5 Wh
Cell Voltage	Nominal	3.6 V
	Charge	4.2 V
	Discharge	2.5 V
Charge Current	Standard	4.5 A
	Maximum	13.5 A (60°C cut-off)
Charge Time	Standard	1.5 hr
Discharge Current	Continuous	45 A (80°C cut-off)
Temperature	Charge	0°C to 60°C
	Discharge	-40°C to 60°C
Energy Density	Volumetric	643 Wh/l
	Gravimetric	242 Wh/kg
Typical Impedance	AC (30%SOC)	7 mΩ
	DC (50%SOC)	13 mΩ

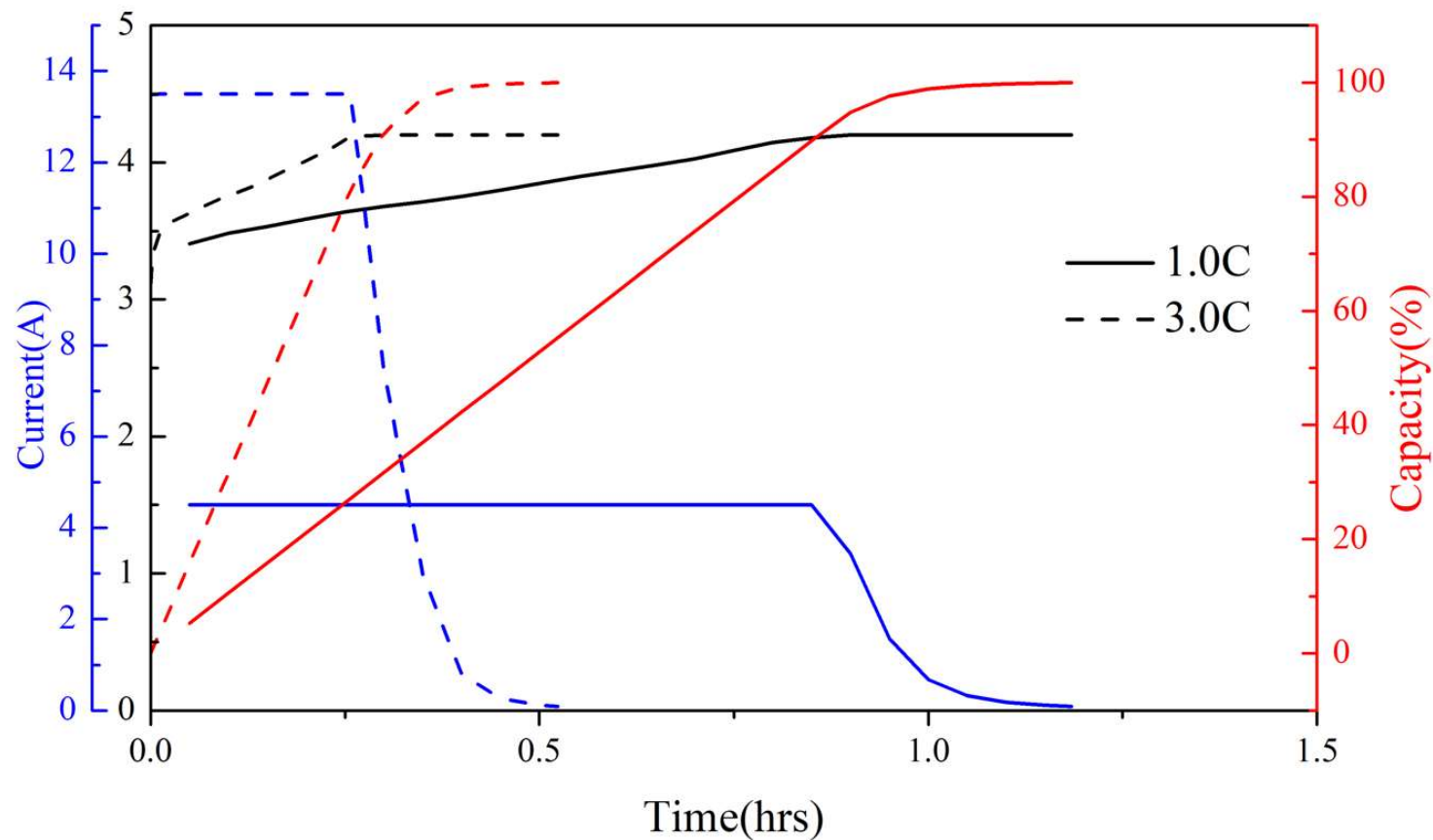
## Physical Characteristics

Shape	Cylindrical
Can	Steel
Diameter	21.55 mm (Max)
Height	70.15 mm (Max)
Weight	70 g (Typical)



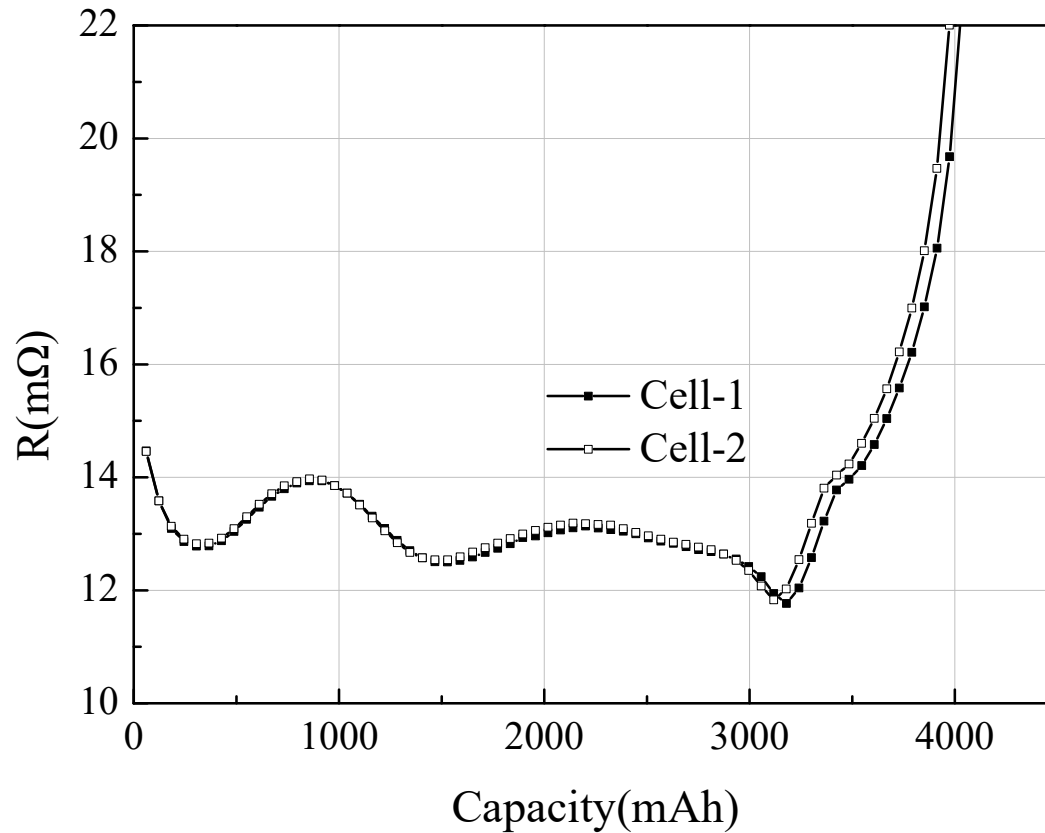
# **Charge / Discharge Characteristics**

# 23°C Charge Characteristics



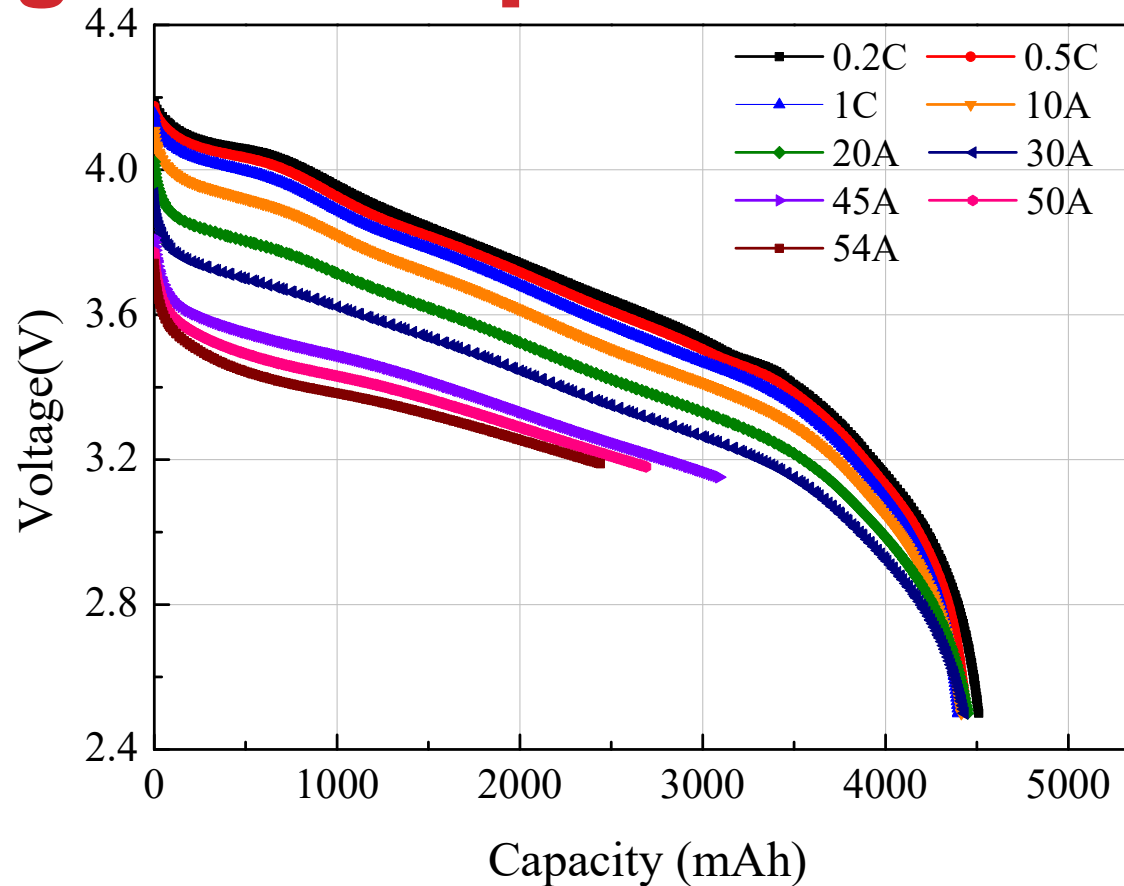
■ Cell is capable of 3C charge

# 1A/10A Pulse DCR



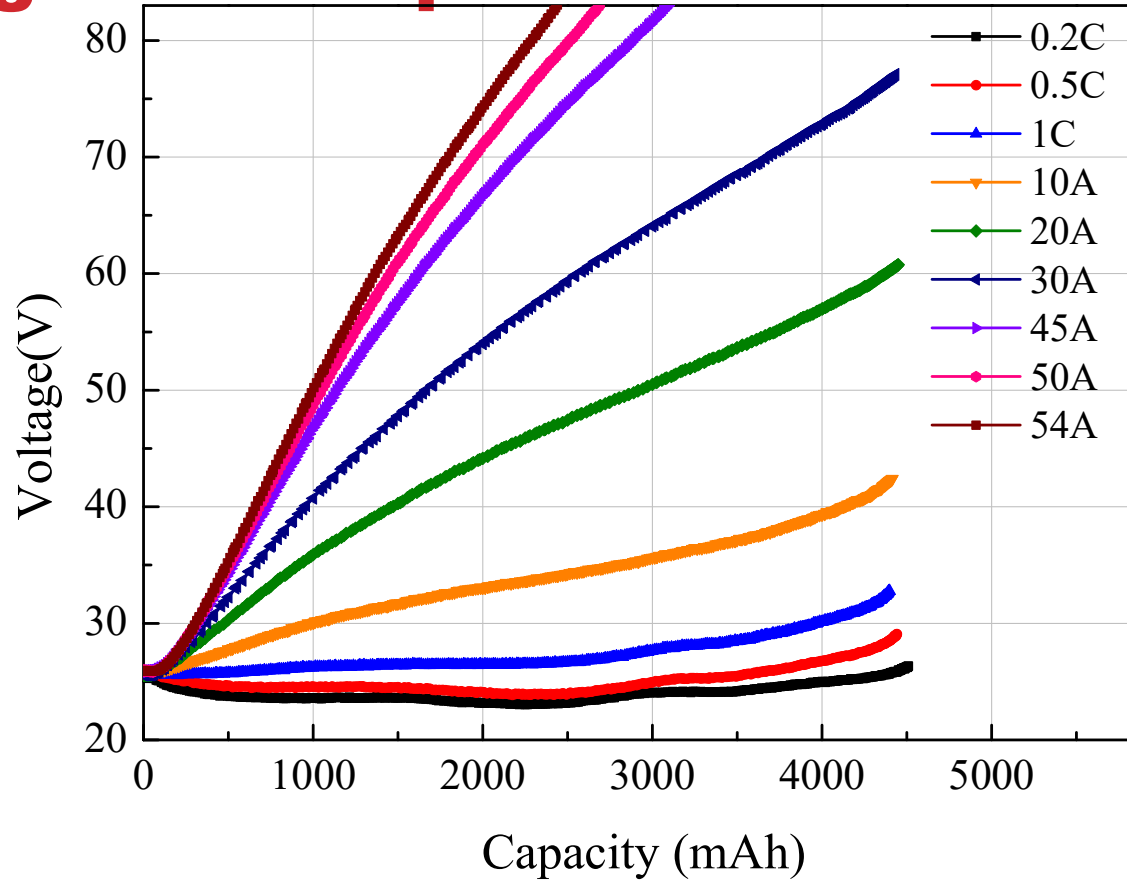
- Charge: CCCV 4.2A/4.2V (50mA current taper)
- Discharge: 1A/120s with 10A/10s pulses to 2.5V
- Ambient Temperature: 23 °C

# Discharge Rate map



- Charge: CCCV 4.2A/4.2V (50mA current taper)
- Discharge: Constant Current to 2.5V
- Ambient Temperature: 23 °C

# Discharge Rate map

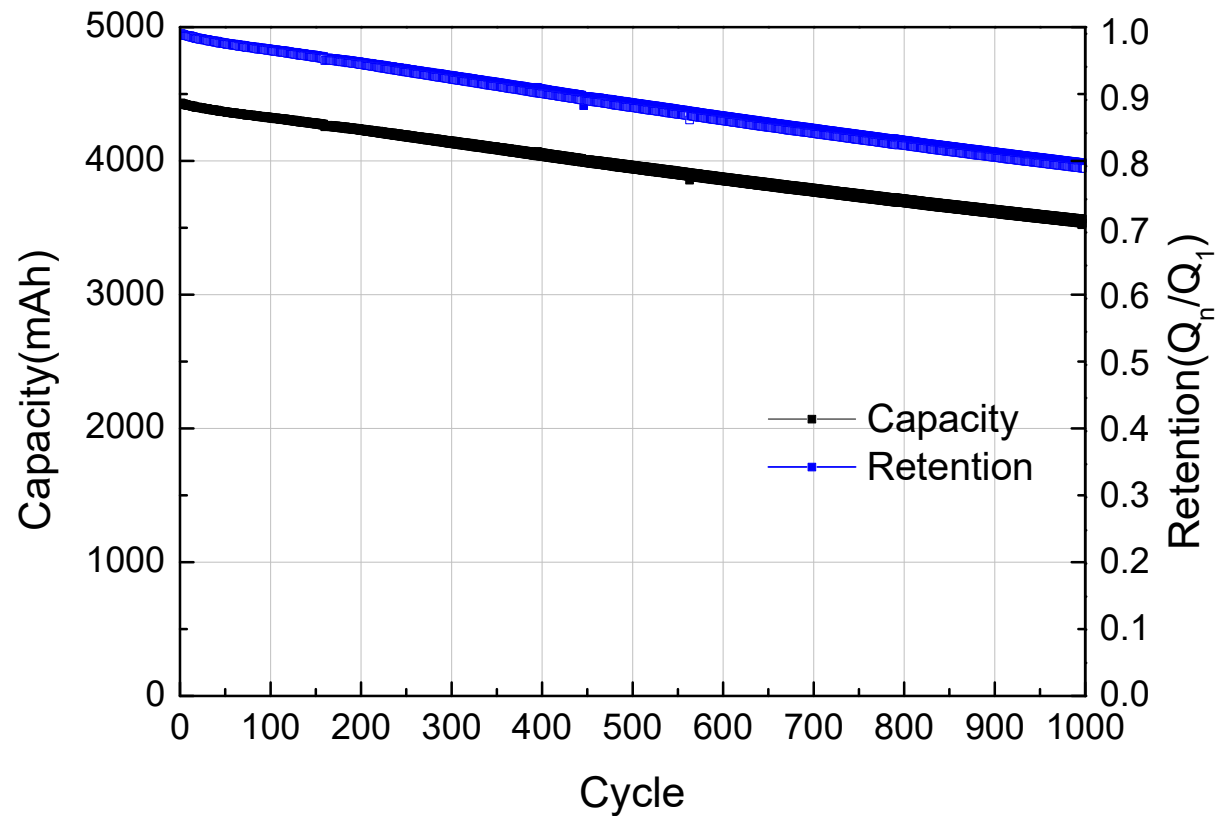


- Charge: CCCV 4.2A/4.2V (50mA current taper)
- Discharge: Constant Current to 2.5V
- Ambient Temperature: 23 °C



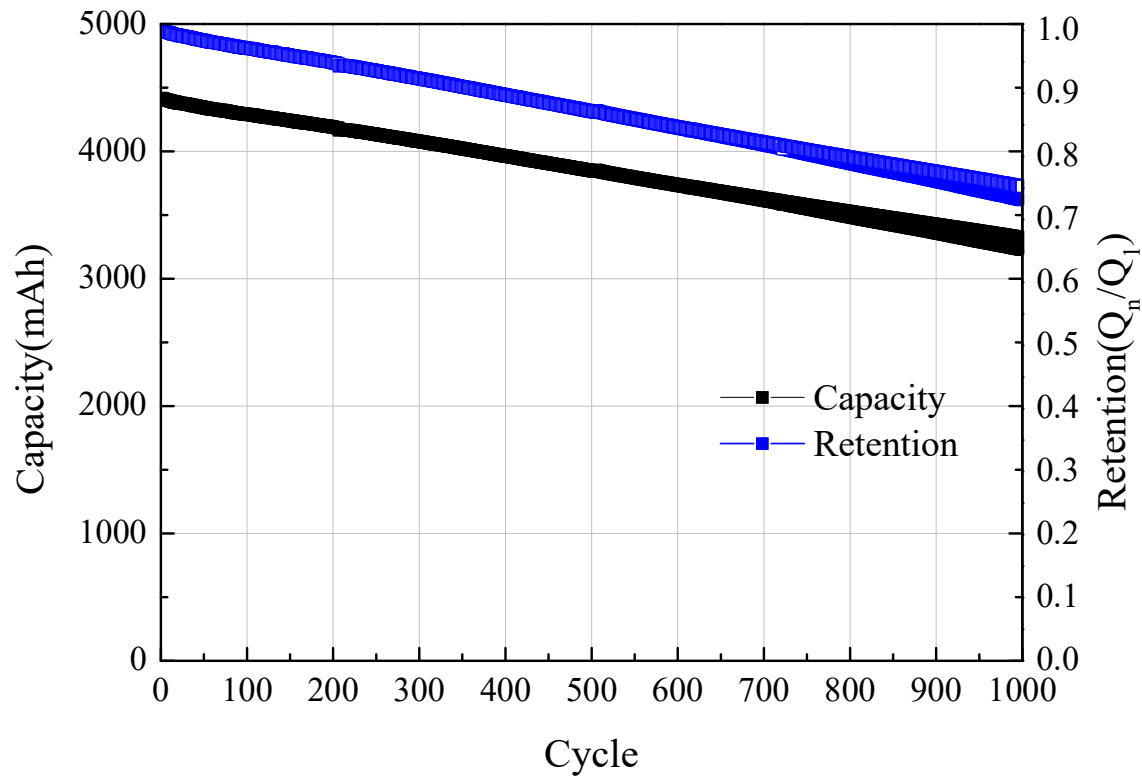
# Cycle Life

# P45B 23°C, +1C/1C



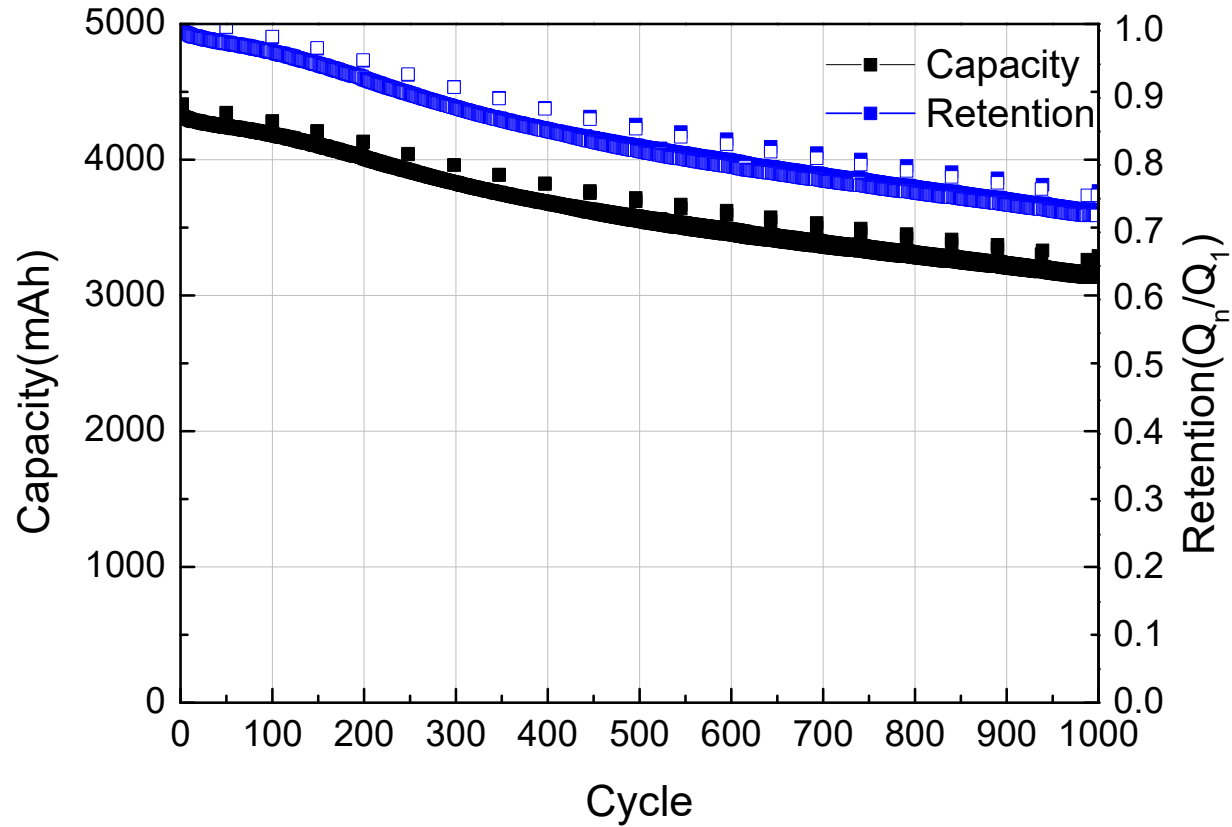
- Charge: CCCV 4.5A/4.2V (90mA current taper)
- Discharge: Constant Current at 4.5A to 2.5V
- Ambient Temperature: 23°C

# P45B 23°C, +3C/1C



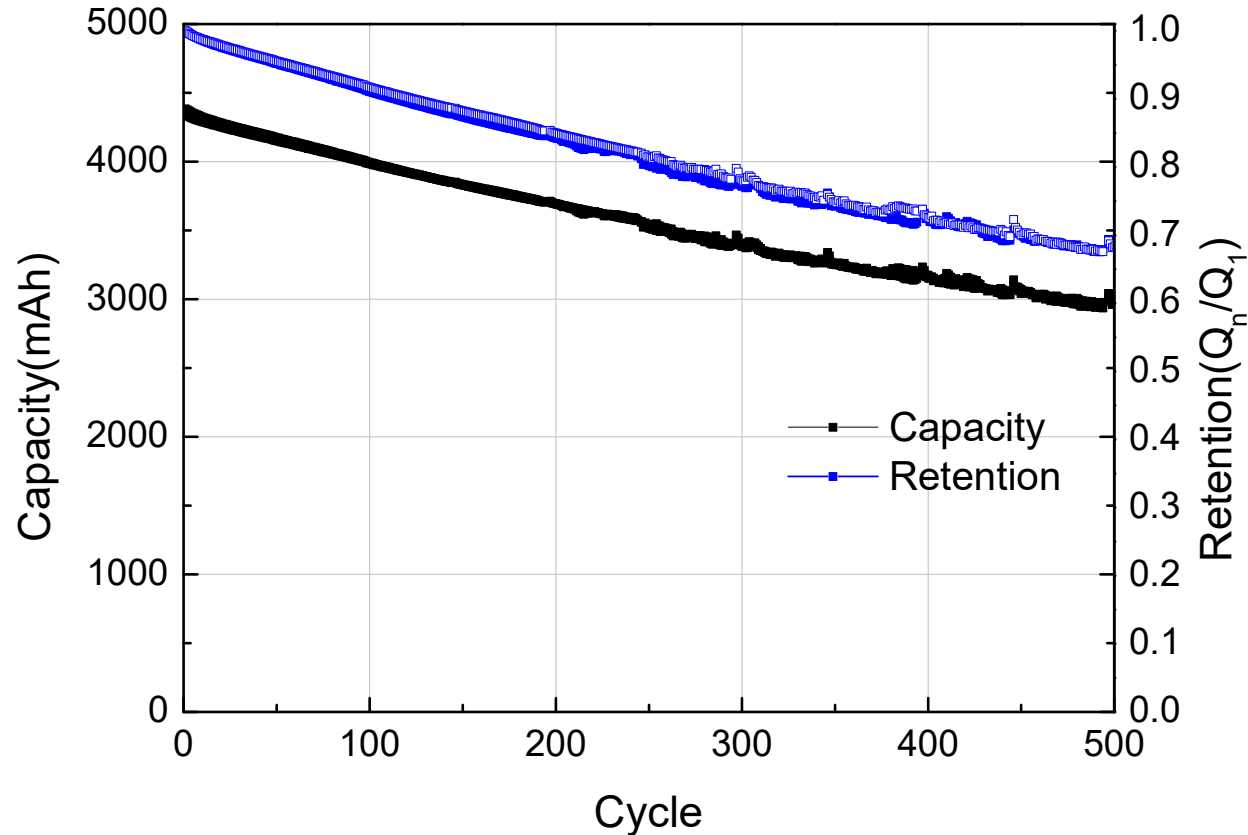
- Charge: CCCV 4.5A/4.2V (90mA current taper)
- Discharge: Constant Current at 13.5A to 2.5V
- Ambient Temperature: 23°C

# P45B 23°C, +1C/-10A



- Charge: CCCV 4.5A/4.2V (90mA current taper)
- Discharge: Constant Current at 10A to 2.5V
- Ambient Temperature: 23°C

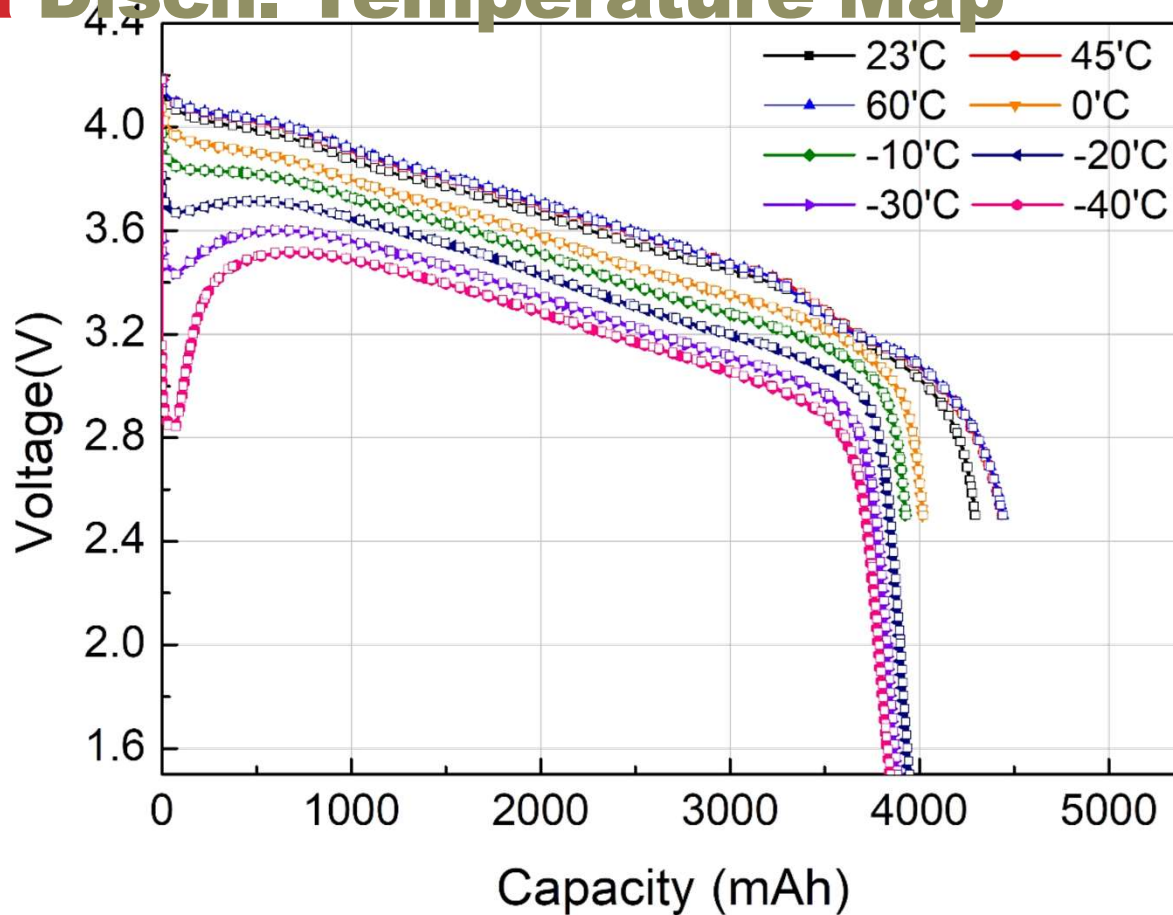
# P45B 23°C, +1C/-30A



- Charge: CCCV 4.5A/4.2V (90mA current taper)
- Discharge: Constant Current at 30A to 2.5V
- Ambient Temperature: 23°C

# Low Temperature Performance

# P45B 8a Disch. Temperature Map



- Charge: CCCV 4.5A/4.2V (50mA current taper)
- Discharge: Constant Current at 4.5A to 2.5V
- Ambient Temperature: 60 °C, 45 °C, 23 °C, 0 °C, -10 °C, -20 °C, -30 °C, and -40 °C

# **Safety Data**



# Safety Data



Test	Condition	Result	Typical Max Temperature
Hotbox	4.2V, 130°C (UL)	Pass	130°C
Short Circuit	30 mΩ, 60°C	Pass	75°C
	15 mΩ, 60°C	Pass	90°C
	5 mΩ, 60°C	Pass	71°C
Overcharge	27A, 15 V, Insulated	Pass	120°C
Impact	4.2V, 23°C (UL)	Pass	28°C

# Storage

# 100% SOC, 28 Day Storage



Design	Storage	Capacity		ACZ		
	Temperature	Retained	Recovered	Before	After	Change
	°C	%	%	mΩ	mΩ	%
INR-21700-P45B	23	95	97	5.9	6	1.7%
	60	80	90	6.2	6.7	8.0%

- Typical values shown.

**MOLICEL®**

**High Power.  
Long Cycle Life.  
Wide Temperature Range.**



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