

SPECIFICATION

FOR
NEXcell SEALED NICKEL-METAL HYDRIDE
CYLINDRICAL RECHARGEABLE BATTERY CELLS

Type	9 V (8.4V) energyON 200 mAh
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Nominal Voltage		8.4V	
Capacity	Typical	200 mAh/0.2 CmA	
	Minimum	160 mAh/0.2 CmA	
Charge	Standard	0.1 CmA for 16 hrs.	
	Rapid	1.0 CmA for 1.2hrs.(approx.) (With- $\Delta V = 35\sim 70\text{mV}$, Temp., Time charging control)	
	Trickle	0.03 CmA (1 month)	
Maximum Discharge Current		1.0 CmA	
Discharge Cut-off Voltage		7.0 V	
Cycle Life		500 cycles	
Applicable Temperature	Standard Charge	0~+45°C	
	Rapid Charge	10~+40°C	
	Discharge	-10~+60°C	
Storage	Within one year	-20°C ~+35°C	
	Within 3 months	-20°C ~+45°C	
	Within 1 month	-20°C ~+55°C	
Typical Self-discharge Characteristics (Room Temperature)		Storage Period	One Year
		Capacity Remained	70-75%
Relative Humidity Range		65%±20%	
Dimension		L = 48.4 mm max	
		W = 26.2 mm max.	
		H = 17.4 mm max.	
Weight		Approx. 37.0 g	

NEXcell BATTERY CO., LTD.

NO.5, INNOVATION RD. I, SCIENCE-BASED INDUSTRIAL PARK HSINCHU, TAIWAN 300

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Sales

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Technical Service

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2. Performance:

Unless otherwise stated, tests should be done within 45 days of delivery under the following Conditions:

Ambient Temperature, Ta : $20 \pm 5^{\circ}\text{C}$
 Relative Humidity : $65 \pm 20\%$ RH

Standard Charge / Discharge Condition
 Charge : 0.1 CmA x 16 hours
 Discharge : 0.2 CmA to 1.0 V/cell

Test Item	Test Method	Performance	Remarks
Capacity	Standard Charge Standard Discharge	No less than rated capacity	Up to 3 cycles are allowed
High Rate Discharge (1.0CmA)	Standard Charge 1 hour rest before discharge	No less than 85% of rated capacity	
Low Temperature Discharge	Discharge at 0.2CmA in $0 \pm 2^{\circ}\text{C}$ for 16~24 hours stand after a standard charge	No less than 80% of rated capacity	
Terminal Voltage Open Circuit Voltage	Within 1 hour after standard charge	No less than 1.31V/cell in terminal voltage	
Cycle Life	IEC 285 (1993) 4.4.1	Over 500 cycles	See Note:1
Charge Retention	Standard Charge Storage 28 days at $20 \pm 2^{\circ}\text{C}$ Standard Discharge	No less than 75% of rated capacity	
Overcharge	Charge at 0.1CmA for 48 hours Standard Discharge	No less than rated capacity	
Over-discharge	Standard Charge Discharge at 2.0CmA to 1.0 V/cell Over-discharge at 1.0CmA for 1 hour	The cell shall not explode The safety valve of the cell shall operate	
Vibration Amplitude Frequency Direction and Time	3.6mm peak to peak 1000 cpm Arbitrary direction / 1 hour	The cell shall be normality in appearance No less than 1.2V/cell in terminal voltage.	
Shock Dropping Distance Shock Board Dropping Time	0.45 m (spontaneous dropping) Hard wood (Thickness: over 10 mm) Arbitrary direction / 3 times	The cell shall be normality in appearance No less than 1.2Vcell in terminal voltage	
Leakage	Standard Charge Storage : 14 days in $33 \pm 5^{\circ}\text{C}$ and $80 \pm 5\%$ RH	The cell shall have no visible leakage	
Short Circuit	After standard charge, short circuit by 2 mm Ni-tab for 1 hour	Leakage and deformation may occur, but no explosion is allowed	

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3. Safety Requirement for User

Please keep in mind the following points when operating, designing, or manufacturing your equipment.

1. Avoid short-circuiting of the battery. Do not connect the positive and the negative terminals with a wire or other metal items, as this will cause a large flow of current through the battery. It may damage the battery.
2. Do not attempt to take the battery apart or subject to pressure or impact. The parts of the battery will be damaged, when the battery has ruptured, heat may be generated or fire may result. The alkaline electrolyte may harm the skin or eyes or damage clothing upon contact.
3. Do not heat or incinerate the battery. The battery may swell or rupture and it may explode or release alkaline electrolyte.
4. Do not solder directly to the battery. It may damage the battery.
5. If any abnormally or problem is found while using the battery, stop its use, and bring it to your local dealer. Please do not attempt to fix or take the battery apart. It may cause dangerous to you.
6. Charge the battery only with a charger qualified by NEXcell or with a charger that meets our specified conditions. Charging without a proper control will cause overcharging and damage the battery. Overcharging can cause battery to capacity drop, short life, leakage, overheat, burst, or even catch fire.
7. Discharge cutoff at 1.0V per cell is required. However, 1.05V/cell cutoff voltage is suggested for multi-cell battery pack.
8. Do not operate the cells/battery packs in a sealed case. A pressure vent is required.

Note 1: IEC285 (1993) 4.4.1 Cycle life Test :

The battery is capable of 500 cycles under the following conditions:

Cycle number	Charge	Rest	Discharge
1	0.10CmA for 16 hrs	none	0.25CmA for 2 hrs 20 mins
2~48	0.25CmA for 3 hrs 10 mins	none	0.25CmA for 2 hrs 20 mins
49	0.25CmA for 3 hrs 10 mins	none	0.25CmA to 1.0V/cell
50	0.10CmA for 16 hrs	1-4hr(s)	0.20CmA to 1.0V/cell

Cycle 1 to 50 shall be repeated until the discharge duration on any 50th cycle becomes less than 3 hrs.

The actual cycle life depends on the operating temperature and cycling conditions.

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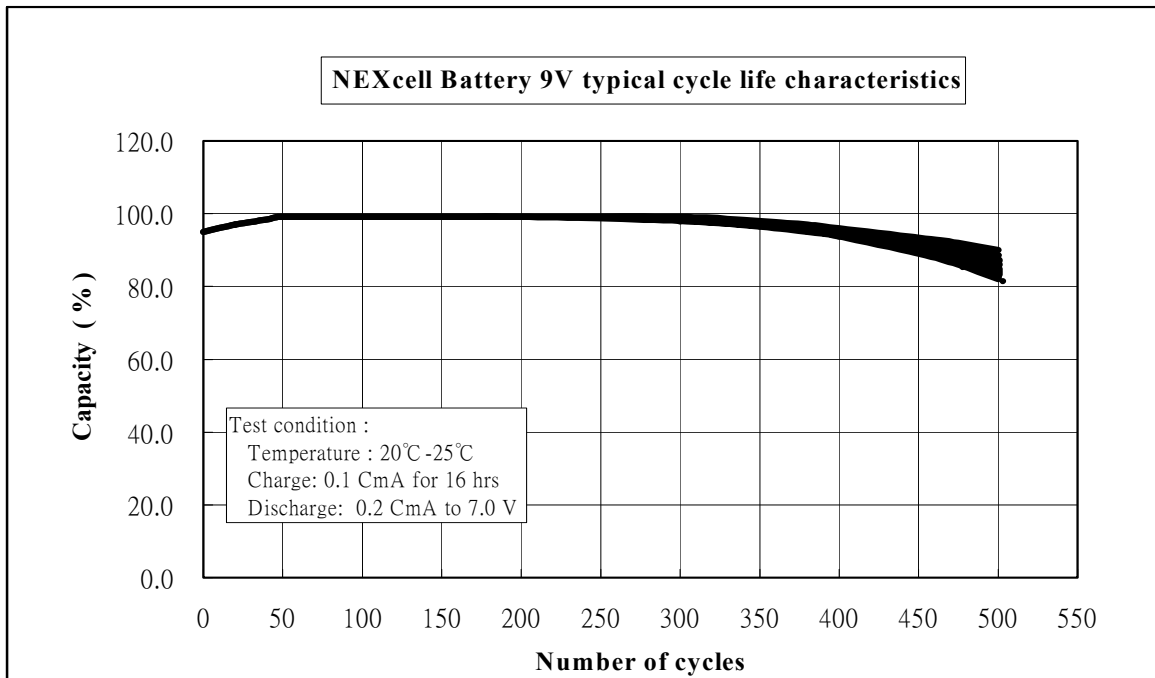
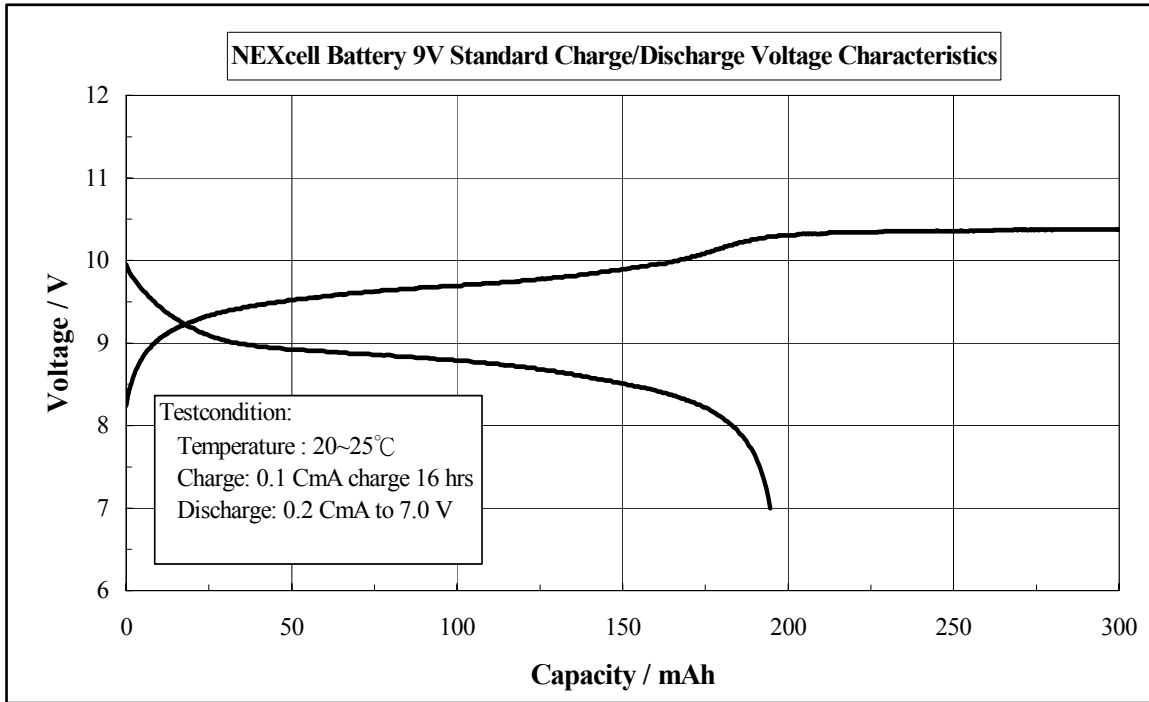
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