

Mistiya Electronics Inc.

www.mistiya.com

**Mistiya Electronics Inc.
10706 - 33a Avenue
Edmonton, Alberta
Canada T6J 3B7**

**Tel (403) 852-4062
Fax (780) 439-0256**

1. Scope

This specification is suitable for the performance of following nickel-metal hydride cylindrical cell and its stack-up battery packs:

Model: H-AA2300mAh High Cap
Size: AA

The data involving nominal voltage and approximate weight of a battery pack shall be equal to the value of the unit cell multiplied by the number of unit cells in the battery pack. An example, for a battery pack which consisting of 3 cells:

Nominal voltage of unit cell = 1.2V

So, nominal voltage of the battery pack = 1.2V×3 = 3.6V

2 Ratings

Type: NI-MH		Model: AA2300mAh High Cap	
Nominal Specifications	Nominal Capacity: 2300mAh	Nominal Voltage: 1.2V	
	Standard Charge: 230mA×16h	Fast Charge: 690mA×4.5h	
	Trickle Charge: 69~115mA	Cut-off Voltage: 1.0V	
Temperature Range	Standard Charge: 0 ~ 45°C	Fast Charge: 10 ~ 40°C	
	Trickle Charge: 0 ~ 45°C	Discharge: -20 ~ 65°C	
	Storage (Within one year) :		
Humidity Range	65 ± 20%		
Approx Weight	31g		
Dimension (with tube)	Diameter(mm)	14.5 ⁰ _{-0.7}	
	Height (mm)	50.5 ⁰ _{-1.0}	
Appearance	There shall be no such defects as deformation, flaw, stain, discoloration or electrolyte leakage, which may adversely affect the commercial value of the battery.		

3.Performance and Test Methods

Unless special stated, tests should be done within one month of delivery under the following conditions:

Ambient Temperature: $20 \pm 5^{\circ}\text{C}$.

Ambient Humidity: $65 \pm 20\%$

Test Item	Test Conditions				Request
1. Standard Charge	Charge is conducted continuously for 16 hours at the constant current of 230mA after pre-discharge at the constant current of 460mA up to an cut-off voltage of 1.0V.				
2.Open-circuit Voltage	Voltage between terminals of the charged battery specified in item(1) is measured after rest for 1 hour.				$\geq 1.25\text{V}$
3.Capacity	Discharge time of the charged battery specified in item(1) is measured at 460mA up to an cut-off voltage of 1.0V after rest for 30 minutes. If the discharge time doesn't reach the specified value, the test may be carried out further twice, up to three times in total.				≥ 290 minutes
4.Capacity (high-rate -discharge)	Discharge time of the charged battery specified in item(1) is measured at 1150mA up to an cut-off voltage of 1.0V after rest for 30 minutes. If the discharge time doesn't reach the specified value, the test may be carried out further twice, up to three times in total.				≥ 110 minutes
5.Cycle Life	Cycles	Charge	Rest	Discharge	≥ 500 cycles
	1	$0.1\text{CmA} \times 16\text{h}$	None	$0.25\text{CmA} \times 140\text{min}$	
	2-48	$0.25\text{CmA} \times 190\text{min}$	None	$0.25\text{CmA} \times 140\text{min}$	
	49	$0.25\text{CmA} \times 190\text{min}$	None	0.25CmA to 1.0V/Cell	
	50	$0.1\text{CmA} \times 16\text{h}$	1-4h	0.2CmA to 1.0V/Cell	
	Cycles 1 to 50 shall be repeated until the discharge duration on any 50th cycle becomes less than 3h. Note: IEC 61436 $0.1\text{CmA} = 2300\text{mA} \times 0.1 = 230\text{mA}$,the rest may be deduced by analogy.				

Battery Spec---H-AA2300mAh

Test Item	Test Conditions	Request
6.Potential	Discharge time of the charged battery specified in item(1) is measured at 460mA up to an cut-off voltage of 1.2V .	≥240 minutes
7.Internal Resistance	The battery is measured at 1KHz with charge state.	≤25mΩ
8.Over-charge	Charge is conducted continuously for 48 hours at 230mA after the capacity test specified in item(3).	No deformation and leakage
9.Over-discharge	Discharge is conducted with a 0.26Ω/cell load for 24 hours.	No external deformation
10.Self-discharge	The charged battery specified in item(1) is stored for 28 days at 20°C, and the discharge time is measured at 460mA.	≥180 minutes
11.Storage	The capacity test conducted as specified in item(3) after the battery discharged with 460mA and stored for 18 months under standard condition.	≥290 minutes
12.Humidity	The charged battery is stored for 10 days at 33±3°C and 80±5% of relative humidity.	No electrolyte leakage
13.Safety Valve Operation	Forced discharge is conducted for 30 minutes at a constant current of 2300mA after pre-discharge at a constant current of 460mA up to 0V.	Not explode or disrupt. *
14.External Short-circuit	The charged battery specified in item(1) is short-circuited for 1 hour.	Not explode. *
15.Drop Test	The battery is subjected to a drop, which has a height of 1m(39.3inches) to an oak board of 10mm or more thick in a voluntary axis respectively 3 times.	Mechanically and electrically normal
Note: * Electrolyte leakage and deformation of battery are acceptable.		

4. Configuration, Dimensions and Markings

Please refer to the attached drawings.

5. General Characteristics

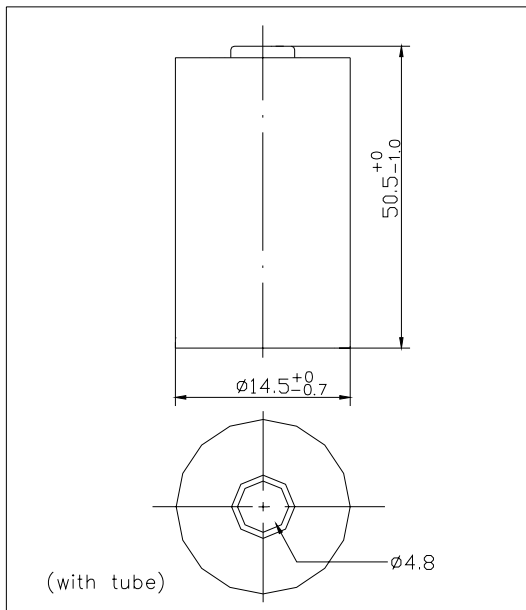
Please refer to the attached drawings.

6. Suggestions & Cautions:

- 6.1 The cut-off voltage is recommended at $1.0\pm 0.1V$ /cell.**
- 6.2 Charge the batteries prior to use.**
- 6.3 Don't solder directly to the battery.**
- 6.4 Don't short circuit and reverse charge.**
- 6.5 Do not dispose of in fire and keep away from damage.**
- 6.6 Store the batteries uncharged in a cool and dry place.**
- 6.7 The batteries' life may be reduced if they are subjected to adverse conditions such as: extreme temperature, deep cycling, excessive overcharge/discharge.**

Battery Spec---H-AA2300mAh

Product Name		Sealed Nickel Metal Hydride Cylindrical Rechargeable Battery
Model		H-AA2300mAh
Nominal Voltage		1.2V
Nominal Capacity		2300mAh
Dimension (with tube)	Diameter	14.5 ⁺⁰ _{-0.7}
	Height	50.5 ⁺⁰ _{-1.0}
Approx Weight		31g
Internal Resistance at 1000Hz		≤ 25mΩ (After charge)
Charge	Standard	230mA × 16h
	Rapid	690mA × 4.5h
	Trickle	69~115mA
Discharge Cut-off Voltage		1.0V
Cycle Life		≥ 500 Cycles
Ambient Temperature	Standard Charge	0°C to 45°C
	Rapid Charge	10°C to 40°C
	Trickle Charge	0°C to 45°C
	Discharge	-20°C to 65°C
	Storage	-20°C to 45°C
Ambient Humidity		65±20%



General Characteristics

