



UL 62133-1/CSA C22.2 NO.62133-1 TEST REPORT

For
Rechargeable Ni-MH Cell

Model: Ni-MH AAA 600mAh, Ni-MH AAA 300mAh, Ni-MH AAA 250mAh, Ni-MH AAA 200mAh, Ni-MH AAA 150mAh, Ni-MH AAA 100mAh

Prepared for: Xinxiang Chenxin Power Co., Ltd.
ZHONGMAFANG INDUSTRIAL PARK IN MUYE DISTRICT XINXIANG
CITY HENAN PROVINCE

Prepared by: Shenzhen NCT Testing Technology Co., Ltd.
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Report Number: NCT25036126XC2-1

Date of Test: N/A

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Miya Li

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Boris Lin

Seal of NCT: _____

The results detailed in this test report relate only to the specific sample(s) tested. This report is not to be reproduced except in full, without written approval from NCT Testing Technology.

TEST REPORT UL 62133-1	
Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications - Part 1: Nickel systems	
Report Number	NCT25036126XC2-1
Date of issue	2026-01-01
Total number of pages.....	30 pages
Applicant's name.....	Xinxiang Chenxin Power Co., Ltd.
Address	ZHONGMAFANG INDUSTRIAL PARK IN MUYE DISTRICT XINXIANG CITY HENAN PROVINCE
Test specification:	
Standard	UL 62133-1:2020, CSA C22.2 No. 62133-1:20
Test procedure	Test Report
Non-standard test method	N/A
Test item description	Rechargeable Ni-MH Cell
Trade Mark	N/A
Manufacturer.....	Same as applicant
Address	Same as applicant
Model/Type reference	1) Ni-MH AAA 600mAh; 2) Ni-MH AAA 300mAh; 3) Ni-MH AAA 250mAh; 4) Ni-MH AAA 200mAh; 5) Ni-MH AAA 150mAh; 6) Ni-MH AAA 100mAh
Ratings	1) 1.2V, 600mAh; 2) 1.2V, 300mAh; 3) 1.2V, 250mAh; 4) 1.2V, 200mAh; 5) 1.2V, 150mAh; 6) 1.2V, 100mAh

Testing procedure and testing location:	
Testing Laboratory: Testing location/ address.....: Shenzhen NCT Testing Technology Co., Ltd. B2A101/B2A201/B2A202, Fuqiao 6th Area, Xintian, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China	
List of Attachments: Appendix 1: 6 pages of Photo Documentation Appendix 2: 2 pages of Other National Requirements-U.S.A, Canada	
Summary of testing:	
Tests performed (name of test and test clause): cl.7.1 Charging procedure for test purposes (for Cells); cl.7.2.1 Continuous low-rate charging(cells); cl.7.2.2 Vibration(cells); cl.7.2.4 Temperature cycling(cells); cl.7.3.1 Incorrect installation(cells); cl.7.3.2 External short circuit(cells); cl.7.3.3 Free fall(cells); cl.7.3.4 Mechanical shock(cells); cl.7.3.5 Thermal abuse(cells); cl.7.3.6 Crushing of cells; cl.7.3.7 Low pressure(cells); cl.7.3.8 Overcharge(cells); cl.7.3.9 Forced discharge(cells) Tests are made with the number of cells specified in UL 62133-1:2020 and CSA C22.2 No. 62133-1:20 Table 1.	Testing location: Shenzhen NCT Testing Technology Co., Ltd. B2A101/B2A201/B2A202, Fuqiao 6th Area, Xintian, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Summary of compliance with National Differences N/A ☒ The product fulfils the requirements of UL 62133-1:2020, CSA C22.2 No. 62133-1:20, details see attachment 1: Other National Requirement- U.S.A, Canada.	

Copy of marking plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

Rechargeable Ni-MH Cell
Model: Ni-MH AAA 600mAh
+ **Rated: 1.2V 600mAh** -
YYYYMMDD
Xinxiang Chenxin Power Co., Ltd.

Label 1 for model: Ni-MH AAA 600mAh

Rechargeable Ni-MH Cell
Model: Ni-MH AAA 250mAh
+ **Rated: 1.2V 250mAh** -
YYYYMMDD
Xinxiang Chenxin Power Co., Ltd.

Label 2 for model: Ni-MH AAA 250mAh

Rechargeable Ni-MH Cell
Model: Ni-MH AAA 200mAh
+ **Rated: 1.2V 200mAh** -
YYYYMMDD
Xinxiang Chenxin Power Co., Ltd.

Label 3 for model: Ni-MH AAA 200mAh

Rechargeable Ni-MH Cell
Model: Ni-MH AAA 150mAh
+ **Rated: 1.2V 150mAh** -
YYYYMMDD
Xinxiang Chenxin Power Co., Ltd.

Label 4 for model: Ni-MH AAA 150mAh

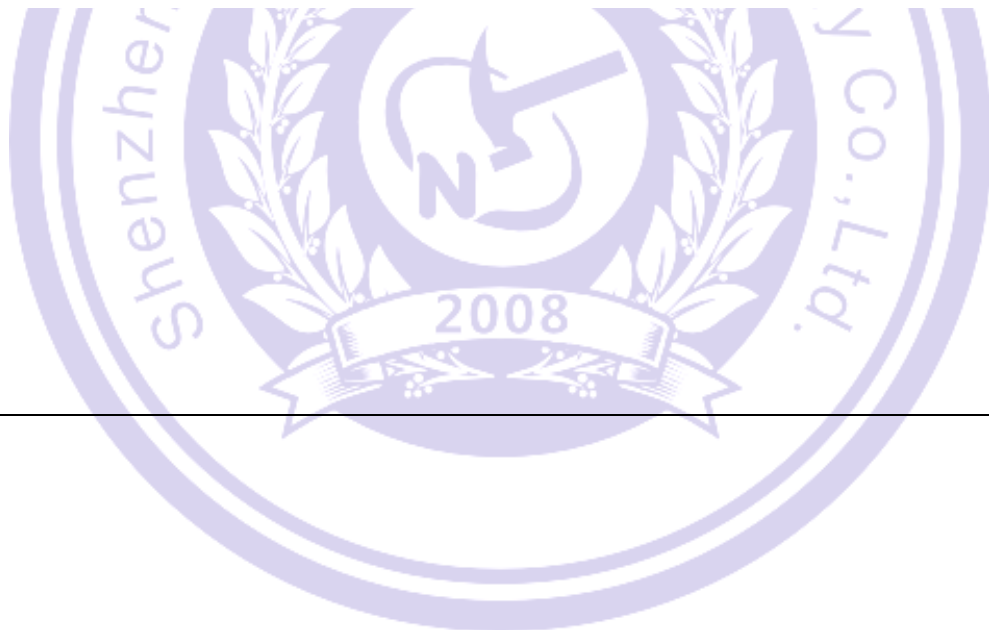
Rechargeable Ni-MH Cell
Model: Ni-MH AAA 100mAh
+ Rated: 1.2V 100mAh -
YYYYMMDD
Xinxiang Chenxin Power Co., Ltd.

Label 5 for model: Ni-MH AAA 100mAh

Information for safety mentioned on equipment's package.

Caution:

- Keep small cells and batteries which are considered swallowable out of the reach of children.
- Swallowing may lead to burns, perforation of soft tissue, and death. Severe burns can occur within 2 h of ingestion.
- In case of ingestion of a cell or battery, seek medical assistance promptly.



Test item particulars	
Classification of installation and use	Portable battery
Supply connection	DC Contact
Recommend charging method declared by the manufacturer	Charging at 0.1C constant current for 16 hours at ambient 20°C±5°C
Discharge current (0,2 I_r A)	1) Ni-MH AAA 600mAh: 120mA; 2) Ni-MH AAA 300mAh: 60mA; 3) Ni-MH AAA 250mAh: 50mA; 4) Ni-MH AAA 200mAh: 40mA; 5) Ni-MH AAA 150mAh: 30mA; 6) Ni-MH AAA 100mAh: 20mA
Specified final voltage	1.0V
Chemistry	nickel systems
Possible test case verdicts:	
- test case does not apply to the test object.....	N/A
- test object does meet the requirement	P (Pass)
- test object does not meet the requirement.....	F (Fail)
Testing	
Date of receipt of test item	N/A
Date (s) of performance of tests.....	N/A
General remarks:	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a ☐ comma / ☒ point is used as the decimal separator.	
Name and address of factory (ies)	Same as applicant

General product information:

EUT in this report are Rechargeable Ni-MH Cell which intend for portable use.

Remark: This test report based on original report NCT240502281XI1-1, have below change(s):

1. Updated the evaluate standard version from IEC 62133-1:2017 to UL 62133-1:2020 CSA C22.2 No. 62133-1:20.

2. The applicant corrected from "Xinxiang Chenxin Power Supply Co., Ltd." to "Xinxiang Chenxin Power Co., Ltd.", See page 1 for details.

For the above described change(s) , no further test was considered necessary.

Note: 6 models (model name: Ni-MH AAA 600mAh, Ni-MH AAA 300mAh, Ni-MH AAA 250mAh, Ni-MH AAA 200mAh, Ni-MH AAA 150mAh, Ni-MH AAA 100mAh), in addition to the model name and capacity is different, size, structure, chemistry, design, manufacturer is the same. The models tested are Ni-MH AAA 600mAh, Ni-MH AAA 250mAh, Ni-MH AAA 200mAh, Ni-MH AAA 150mAh, Ni-MH AAA 100mAh.

The main features of the cells are shown as below:

Model	Nominal capacity	Nominal voltage	Nominal Charge Current	Nominal Discharge Current	Maximum Charge Current	Maximum Discharge Current	Maximum Charge Voltage	Cut-off Voltage
Ni-MH AAA 600mAh	600mAh	1.2V	60mA	120mA	600mA	600mA	--	1.0V
Ni-MH AAA 300mAh	300mAh	1.2V	30mA	60mA	300mA	300mA	--	1.0V
Ni-MH AAA 250mAh	250mAh	1.2V	25mA	50mA	250mA	250mA	--	1.0V
Ni-MH AAA 200mAh	200mAh	1.2V	20mA	40mA	200mA	200mA	--	1.0V
Ni-MH AAA 150mAh	150mAh	1.2V	15mA	30mA	150mA	150mA	--	1.0V
Ni-MH AAA 100mAh	100mAh	1.2V	10mA	20mA	100mA	100mA	--	1.0V

Construction:



Cell

Circuit diagram:

None, cell only.

UL 62133-1			
Clause	Requirement + Test	Result - Remark	Verdict

4	Parameter measurement tolerances		P
	Parameter measurement tolerances		P

5	General safety considerations		P
5.1	General		P
5.2	Insulation and wiring		N/A
	The insulation resistance between the positive terminal and externally exposed metal surfaces of the battery (excluding electrical contact surfaces) is not less than 5 MΩ	Cell only.	N/A
	Insulation resistance (MΩ) :		—
	Internal wiring and insulation are sufficient to withstand maximum anticipated current, voltage and temperature requirements		N/A
	Orientation of wiring maintains adequate creepage and clearance distances between conductors		N/A
	Mechanical integrity of internal connections accommodates reasonably foreseeable misuse		N/A
5.3	Venting		P
	Battery cases and cells incorporate a pressure relief mechanism or are constructed so that they relieve excessive internal pressure at a value and rate that will preclude rupture, explosion and self-ignition	Venting mechanism facilitated on cell.	P
	Encapsulation used to support cells within an outer casing does not cause the battery to overheat during normal operation nor inhibit pressure relief		N/A
5.4	Temperature, voltage and current management		N/A
	Batteries are designed such that abnormal temperature-rise conditions are prevented	Cell only.	N/A
	Batteries are designed to be within temperature, voltage and current limits specified by the cell manufacturer		N/A
	Batteries are provided with specifications and charging instructions for equipment manufacturers so that associated chargers are designed to maintain charging within the temperature, voltage and current limits specified		N/A
5.5	Terminal contacts		P
	The size and shape of the terminal contacts ensure that they can carry the maximum anticipated current		P
	External terminal contact surfaces are formed from conductive materials with good mechanical strength and corrosion resistance		P

UL 62133-1			
Clause	Requirement + Test	Result - Remark	Verdict

	Terminal contacts are arranged to minimize the risk of short circuits		P
5.6	Assembly of cells into batteries		N/A
5.6.1	If there is more than one battery housed in a single battery case, cells used in the assembly of each battery have closely matched capacities, be of the same design, be of the same chemistry and be from the same manufacturer	Cell only.	N/A
	Battery has some type of safety device or feature for charging.		N/A
	Manufacturers of cells specify current, voltage and temperature limits so that the battery manufacturer /designer may ensure proper design and assembly		N/A
	Batteries that are designed for the selective discharge of a portion of their series connected cells incorporate circuitry to prevent operation of cells outside the limits specified by the cell manufacturer		N/A
	Protective circuit components are added as appropriate and consideration given to the end-device application		N/A
	When testing a battery, the manufacturer of the battery provides a test report confirming the compliance according to this document		N/A
5.7	Quality plan		P
	The manufacturer prepares and implements a quality plan that defines procedures for the inspection of materials, components, cells and batteries and which covers the whole process of producing each type of cell or battery	Quality plan provided.	P

6	Type test and sample size		P
	Tests were made with the number of cells or batteries specified in Table 1 using cells or batteries that are not more than six months old	Complied.	P
	Unless noted otherwise in the test methods, testing was conducted in an ambient of 20°C ± 5°C.	Tests are carried out at 20°C ±5°C	P

7	Specific requirements and tests		P
7.1	Charging procedure for test purposes	Test is carried out at 20°C±5°C.	P
7.2	Intended use	See tests below.	P
7.2.1	Continuous low-rate charging (cells)		P
	Results: No fire. No explosion	No fire. No explosion. (See Table 7.2.1)	P

UL 62133-1			
Clause	Requirement + Test	Result - Remark	Verdict
7.2.2	Vibration		P
	Results: No fire. No explosion. No leakage	No fire. No explosion. No leakage. (See Table 7.2.2)	P
7.2.3	Case stress at high ambient temperature(batteries)	Cell only.	N/A
	Oven temperature (°C).....:		—
	Results: No physical distortion of the battery case resulting in exposure of internal protective components and cells		N/A
7.2.4	Temperature cycling	Tested and complied.	P
	Results: No fire. No explosion. No leakage.	No fire. No explosion. No leakage.	P
7.3	Reasonably foreseeable misuse		P
7.3.1	Incorrect installation (cells)		P
	The test was carried out using: - Four fully charged cells of the same brand, type, size and age connected in series, with one of them reversed; or		P
	- A stabilized dc power supply.		N/A
	Results: No fire. No explosion.....:	No fire. No explosion. (See Table 7.3.1)	P
7.3.2	External short circuit	See below.	P
	The cells or batteries were tested until one of the following occurred: - 24 hours elapsed; or		N/A
	- The case temperature declined by 20% of the maximum temperature rise		P
	Results: No fire. No explosion.....:	No fire. No explosion. (See Table 7.3.2)	P
7.3.3	Free fall		P
	Results: No fire. No explosion.	No fire. No explosion.	P
7.3.4	Mechanical shock (crash hazard)		P
	Results: No fire. No explosion. No leakage.	No fire. No explosion. No leakage.	P
7.3.5	Thermal abuse (cells)		P
	Oven temperature (°C).....:	130°C	—
	Results: No fire. No explosion.	No fire. No explosion.	P
7.3.6	Crushing of cells		P
	The crushing force was released upon: - The maximum force of 13 kN ± 0.78 kN has been applied; or		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- An abrupt voltage drop of one-third of the original voltage has been obtained		N/A
	The cell is prismatic type and a second set of samples was tested, rotated 90° around longitudinal axis compared to the first set		N/A
	Results: No fire. No explosion..... :	No fire. No explosion. (See Table 7.3.6)	P
7.3.7	Low pressure (cells)		P
	Chamber pressure (kPa)..... :	11.6kPa	—
	Results: No fire. No explosion. No leakage.	No fire. No explosion. No leakage.	P
7.3.8	Overcharge		P
	Results: No fire. No explosion..... :	No fire. No explosion. (See Table 7.3.8)	P
7.3.9	Forced discharge		P
	Results: No fire. No explosion..... :	No fire. No explosion. (See Table 7.3.9)	P
8	Information for safety		P
8.1	General		P
	The manufacturer of secondary cells ensures that information is provided about current, voltage and temperature limits of their products.	Information for safety mentioned in manufacturer's specifications.	P
	The manufacturer of batteries ensures that equipment manufacturers and, in the case of direct sales, end-users are provided with information to minimize and mitigate hazards.	Cell only.	N/A
	Systems analyses performed by device manufacturers to ensure that a particular battery design prevents hazards from occurring during use of a product		N/A
	As appropriate, information relating to hazard avoidance resulting from a system analysis is provided to the end user		N/A
	Guidance is provided in IEC TR 62188 on the design are provided for information in Annex A and Annex B.		N/A
8.2	Small cell and battery safety information	Small cell.	P
	The following warning language is to be provided with the information packaged with the small cells and batteries or equipment using them:		P

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Clause	Requirement + Test	Result - Remark	Verdict
	-Keep small cells and batteries which are considered swallowable out of the reach of children.		P
	-Swallowing may lead to burns, perforation of soft tissue, and death. Severe burns can occur within 2h of ingestion.		P
	-In case of ingestion of a cell or battery, seek medical assistance promptly.		P

9	Marking		P
9.1	Cell marking		P
	Cells marked as specified in the applicable cell standards: IEC 61951-1 or IEC 61951-2.	The cell is marked in accordance with IEC 61951-2, also see page 4 and page 5.	P
	By agreement between the cell manufacturer and the battery and/or end product manufacturer, component cells used in the manufacture of a battery need not be marked.		N/A
	However, cell marking can be indicated with the battery, the instructions and/or the specifications.		N/A
9.2	Battery marking	Cell only.	N/A
	Batteries marked as specified in the applicable cell standards: IEC 61951-1 or IEC 61951-2.		N/A
	Batteries marked with an appropriate caution statement.		N/A
	Terminals have clear polarity marking on the external surface of the battery.		N/A
	Batteries with keyed external connector need not be marked with polarity markings if the design of the external connector prevents reverse polarity connections		N/A
9.3	Caution for ingestion of small cells and batteries	Small cell.	P
	Small cells and batteries determined to be small are including a caution statement regarding the hazards of ingestion in accordance with 8.2.		P
	Small cells and batteries are intended for direct sale in consumer-replaceable applications, caution for ingestion are given on the immediate package.		P
9.4	Other information	Cell only.	N/A
	Storage and disposal instructions marked on or supplied with the battery.		N/A
	Recommended charging instructions marked on or supplied with the battery.		N/A

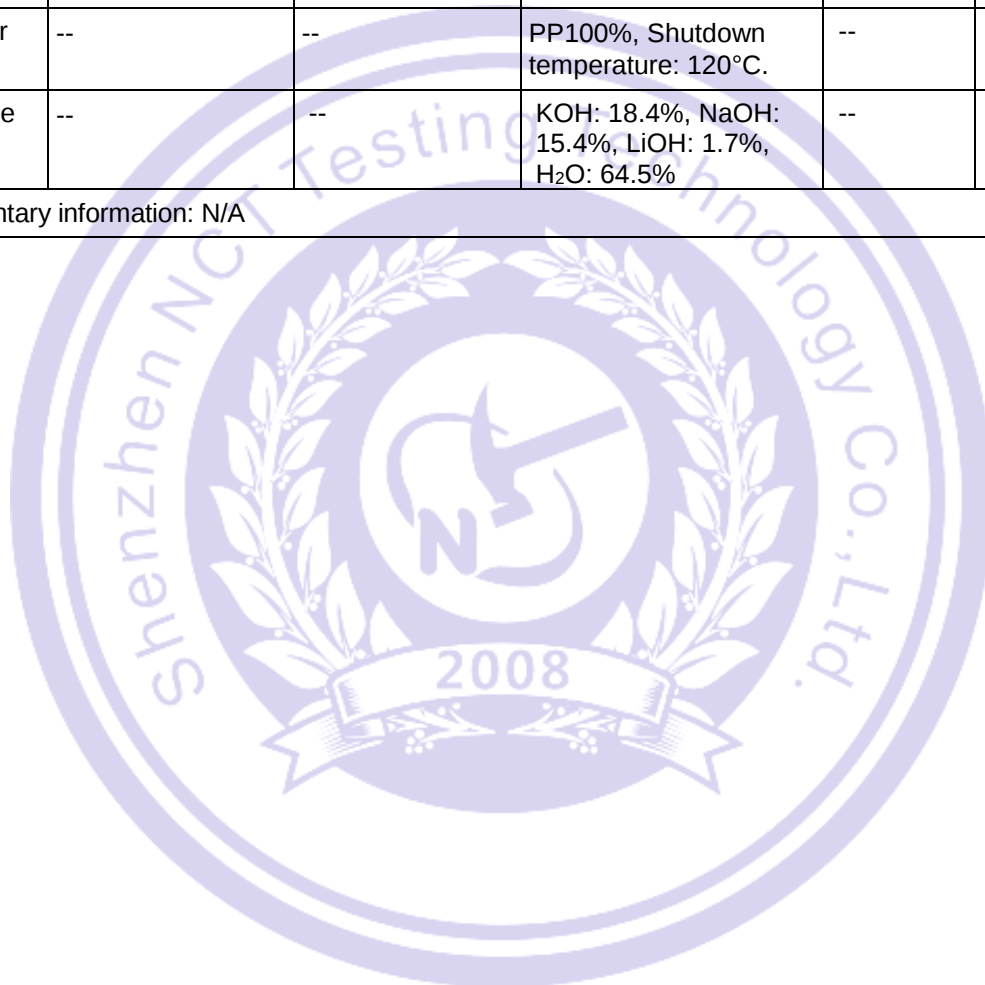
UL 62133-1			
Clause	Requirement + Test	Result - Remark	Verdict

10	Packaging		N/A
	Packaging for button cells are not be small enough to fit within the limits of the ingestion gauge of Figure 2	Not button cell.	N/A
	Annex C for information regarding packaging		N/A

Annex A (informative)	Recommendations to equipment manufacturers and battery assemblers	N/A
Annex B (informative)	Recommendations to the end-users	N/A
Annex C (informative)	Packaging	N/A



5.1 – 5.6		TABLE: Critical components information			P
Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity
-Positive electrode	--	--	Nickel (56.5%)+ Zinc (4.0%) + Cobalt (1.5%) + Oxyhydrogen (38.0%)	--	--
-Negative electrode	--	--	Nickel (55.0%)+ Cobalt (61%)+ Manganese (4.8%)+ Aluminium (1.9%) Rare earth (32.2%)	--	--
-Separator	--	--	PP100%, Shutdown temperature: 120°C.	--	--
-Electrolyte	--	--	KOH: 18.4%, NaOH: 15.4%, LiOH: 1.7%, H ₂ O: 64.5%	--	--
Supplementary information: N/A					



7.2.1		TABLE: Continuous low rate charge (Cells)				P
Model	Recommended charging method, (CC, CV, or CC/CV)	Recommended charging voltage V_c , (Vdc)	Recommended charging current I_{rec} , (A)	OCV at start of test, (Vdc)	Results	
Ni-MH AAA 600mAh						
Cell #1	CC	--	0.06	1.47	P	
Cell #2	CC	--	0.06	1.45	P	
Cell #3	CC	--	0.06	1.46	P	
Cell #4	CC	--	0.06	1.45	P	
Cell #5	CC	--	0.06	1.44	P	
Ni-MH AAA 250mAh						
Cell #1	CC	--	0.025	1.46	P	
Cell #2	CC	--	0.025	1.46	P	
Cell #3	CC	--	0.025	1.47	P	
Cell #4	CC	--	0.025	1.44	P	
Cell #5	CC	--	0.025	1.46	P	
Ni-MH AAA 200mAh						
Cell #1	CC	--	0.02	1.46	P	
Cell #2	CC	--	0.02	1.45	P	
Cell #3	CC	--	0.02	1.47	P	
Cell #4	CC	--	0.02	1.46	P	
Cell #5	CC	--	0.02	1.45	P	
Ni-MH AAA 150mAh						
Cell #1	CC	--	0.015	1.45	P	
Cell #2	CC	--	0.015	1.46	P	
Cell #3	CC	--	0.015	1.46	P	
Cell #4	CC	--	0.015	1.47	P	
Cell #5	CC	--	0.015	1.45	P	
Ni-MH AAA 100mAh						
Cell #1	CC	--	0.01	1.46	P	
Cell #2	CC	--	0.01	1.45	P	
Cell #3	CC	--	0.01	1.46	P	
Cell #4	CC	--	0.01	1.44	P	
Cell #5	CC	--	0.01	1.45	P	
Supplementary information:						
- No fire or explosion						

7.2.2	TABLE: Vibration (Cells)		P
Model		OCV at start of test, (Vdc)	Results
Ni-MH AAA 600mAh			
Cell #1	1.46	P	
Cell #2	1.45	P	
Cell #3	1.44	P	
Cell #4	1.44	P	
Cell #5	1.46	P	
Ni-MH AAA 250mAh			
Cell #1	1.45	P	
Cell #2	1.46	P	
Cell #3	1.44	P	
Cell #4	1.45	P	
Cell #5	1.45	P	
Ni-MH AAA 200mAh			
Cell #1	1.47	P	
Cell #2	1.46	P	
Cell #3	1.45	P	
Cell #4	1.47	P	
Cell #5	1.46	P	
Ni-MH AAA 150mAh			
Cell #1	1.46	P	
Cell #2	1.46	P	
Cell #3	1.45	P	
Cell #4	1.44	P	
Cell #5	1.46	P	
Ni-MH AAA 100mAh			
Cell #1	1.47	P	
Cell #2	1.45	P	
Cell #3	1.46	P	
Cell #4	1.46	P	
Cell #5	1.45	P	
Supplementary information:			
- No fire or explosion			
- No leakage			

7.3.1	TABLE: Incorrect installation (Cells)		P
Model		OCV of reversed cell, (Vdc)	Results
Ni-MH AAA 600mAh			
Cell #1	1.46	P	
Cell #2	1.47	P	
Cell #3	1.45	P	
Cell #4	1.44	P	
Cell #5	1.46	P	
Ni-MH AAA 250mAh			
Cell #1	1.44	P	
Cell #2	1.45	P	
Cell #3	1.47	P	
Cell #4	1.45	P	
Cell #5	1.46	P	
Ni-MH AAA 200mAh			
Cell #1	1.46	P	
Cell #2	1.46	P	
Cell #3	1.45	P	
Cell #4	1.44	P	
Cell #5	1.46	P	
Ni-MH AAA 150mAh			
Cell #1	1.46	P	
Cell #2	1.46	P	
Cell #3	1.45	P	
Cell #4	1.47	P	
Cell #5	1.44	P	
Ni-MH AAA 100mAh			
Cell #1	1.47	P	
Cell #2	1.45	P	
Cell #3	1.46	P	
Cell #4	1.47	P	
Cell #5	1.45	P	
Supplementary information:			
- No fire or explosion			

7.3.2		TABLE: External short circuit (Cells)				P
Model	Ambient (at 20°C ± 5°C or 55°C ± 5°C)	OCV at start of test, (Vdc)	Resistance of circuit, (Ω)	Maximum case temperature rise ΔT, (°C)	Results	
Ni-MH AAA 600mAh						
Cell #1	23.1	1.45	0.088	79.3	P	
Cell #2	23.1	1.44	0.087	85.2	P	
Cell #3	23.1	1.44	0.078	81.4	P	
Cell #4	23.1	1.46	0.081	82.4	P	
Cell #5	23.1	1.45	0.085	80.3	P	
Cell #6	55.4	1.45	0.082	84.7	P	
Cell #7	55.4	1.47	0.074	81.3	P	
Cell #8	55.4	1.45	0.085	82.3	P	
Cell #9	55.4	1.46	0.090	80.7	P	
Cell #10	55.4	1.47	0.077	82.1	P	
Ni-MH AAA 250mAh						
Cell #1	23.2	1.45	0.077	82.1	P	
Cell #2	23.2	1.45	0.086	78.3	P	
Cell #3	23.2	1.47	0.080	81.6	P	
Cell #4	23.2	1.47	0.088	82.0	P	
Cell #5	23.2	1.46	0.071	81.9	P	
Cell #6	55.7	1.45	0.085	81.2	P	
Cell #7	55.7	1.47	0.082	84.1	P	
Cell #8	55.7	1.47	0.077	83.2	P	
Cell #9	55.7	1.46	0.083	81.7	P	
Cell #10	55.7	1.45	0.082	84.0	P	
Ni-MH AAA 200mAh						
Cell #1	23.3	1.46	0.077	83.0	P	
Cell #2	23.3	1.46	0.082	81.2	P	
Cell #3	23.3	1.47	0.082	77.6	P	
Cell #4	23.3	1.45	0.081	80.3	P	
Cell #5	23.3	1.45	0.082	79.5	P	
Cell #6	55.2	1.46	0.083	80.5	P	
Cell #7	55.2	1.47	0.081	81.7	P	
Cell #8	55.2	1.45	0.087	82.7	P	
Cell #9	55.2	1.48	0.079	83.6	P	
Cell #10	55.2	1.46	0.083	79.5	P	
Ni-MH AAA 150mAh						

Cell #1	23.5	1.46	0.077	78.3	P
Cell #2	23.5	1.47	0.078	82.4	P
Cell #3	23.5	1.46	0.082	79.5	P
Cell #4	23.5	1.45	0.089	81.5	P
Cell #5	23.5	1.44	0.081	77.5	P
Cell #6	55.5	1.46	0.083	85.6	P
Cell #7	55.5	1.48	0.082	81.4	P
Cell #8	55.5	1.47	0.083	78.9	P
Cell #9	55.5	1.47	0.087	80.5	P
Cell #10	55.5	1.46	0.078	82.7	P
Ni-MH AAA 100mAh					
Cell #1	23.3	1.47	0.082	83.2	P
Cell #2	23.3	1.45	0.079	80.4	P
Cell #3	23.3	1.46	0.080	78.3	P
Cell #4	23.3	1.47	0.085	81.0	P
Cell #5	23.3	1.47	0.083	79.6	P
Cell #6	55.6	1.46	0.091	84.2	P
Cell #7	55.6	1.48	0.078	80.9	P
Cell #8	55.6	1.47	0.080	84.3	P
Cell #9	55.6	1.46	0.087	79.5	P
Cell #10	55.6	1.48	0.092	83.0	P
Supplementary information: - No fire or explosion					

7.3.6	TABLE: Crush (Cells)			P
Model		OCV at start of test, (Vdc)	OCV at removal of crushing force, (Vdc)	Results
Ni-MH AAA 600mAh				
Cell #1	1.46	1.25	P	
Cell #2	1.45	1.22	P	
Cell #3	1.46	1.25	P	
Cell #4	1.47	1.26	P	
Cell #5	1.46	1.25	P	
Ni-MH AAA 250mAh				
Cell #1	1.46	1.26	P	
Cell #2	1.46	1.24	P	
Cell #3	1.44	1.23	P	

Cell #4	1.45	1.22	P
Cell #5	1.45	1.25	P
Ni-MH AAA 200mAh			
Cell #1	1.45	1.25	P
Cell #2	1.46	1.26	P
Cell #3	1.46	1.22	P
Cell #4	1.47	1.24	P
Cell #5	1.45	1.27	P
Ni-MH AAA 150mAh			
Cell #1	1.46	1.22	P
Cell #2	1.46	1.25	P
Cell #3	1.47	1.27	P
Cell #4	1.45	1.25	P
Cell #5	1.46	1.26	P
Ni-MH AAA 100mAh			
Cell #1	1.44	1.26	P
Cell #2	1.45	1.25	P
Cell #3	1.47	1.22	P
Cell #4	1.46	1.24	P
Cell #5	1.47	1.24	P
Supplementary information: - No fire or explosion			

7.3.8	TABLE: Overcharge (Cells)				P
Model	OCV prior to charging, (Vdc)	Maximum charge current, (A)	Time for charging, (hours)	Results	
Ni-MH AAA 600mAh					
Cell #1	1.14	0.15	10.0	P	
Cell #2	1.14	0.15	10.0	P	
Cell #3	1.13	0.15	10.0	P	
Cell #4	1.15	0.15	10.0	P	
Cell #5	1.16	0.15	10.0	P	
Ni-MH AAA 250mAh					
Cell #1	1.15	0.0625	10.0	P	
Cell #2	1.14	0.0625	10.0	P	
Cell #3	1.16	0.0625	10.0	P	
Cell #4	1.14	0.0625	10.0	P	
Cell #5	1.13	0.0625	10.0	P	

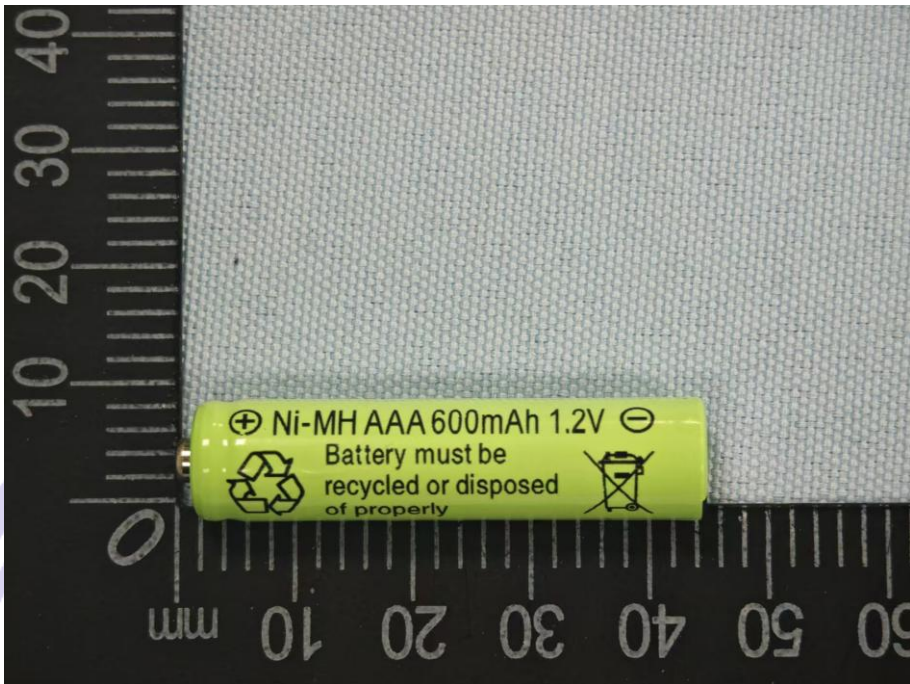
Ni-MH AAA 200mAh				
Cell #1	1.16	0.05	10.0	P
Cell #2	1.15	0.05	10.0	P
Cell #3	1.17	0.05	10.0	P
Cell #4	1.16	0.05	10.0	P
Cell #5	1.15	0.05	10.0	P
Ni-MH AAA 150mAh				
Cell #1	1.14	0.0375	10.0	P
Cell #2	1.16	0.0375	10.0	P
Cell #3	1.14	0.0375	10.0	P
Cell #4	1.15	0.0375	10.0	P
Cell #5	1.13	0.0375	10.0	P
Ni-MH AAA 100mAh				
Cell #1	1.16	0.025	10.0	P
Cell #2	1.14	0.025	10.0	P
Cell #3	1.16	0.025	10.0	P
Cell #4	1.15	0.025	10.0	P
Cell #5	1.13	0.025	10.0	P
Supplementary information: - No fire or explosion				

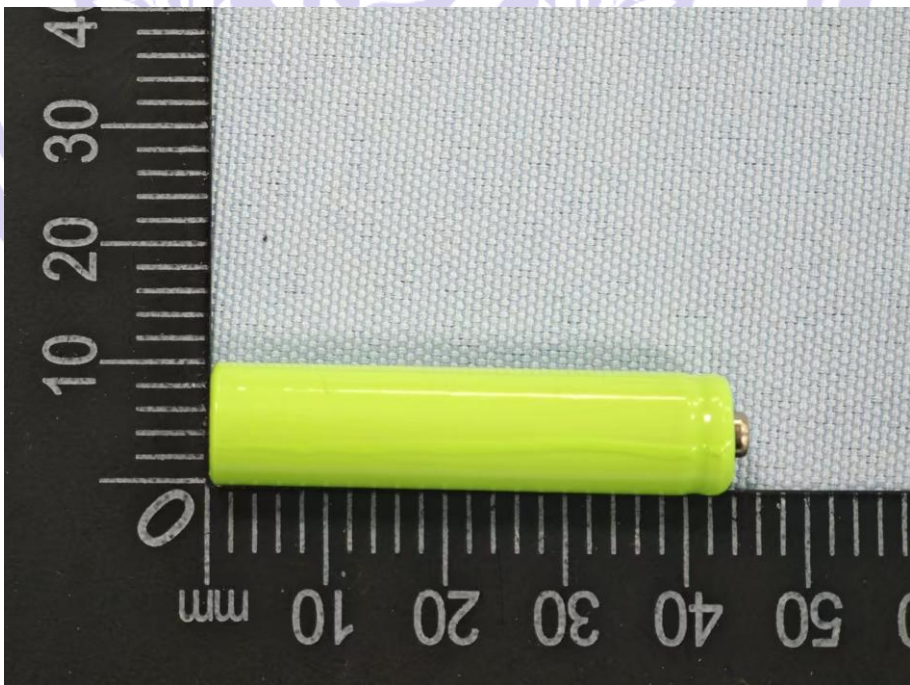
7.3.9	TABLE: Forced discharge (cells)				P
Model	OCV before application of reverse charge, (Vdc)	Measured reverse charge I _r , (A)	Time for reversed charge, (minutes)	Results	
Ni-MH AAA 600mAh					
Cell #1	1.15	0.60	90	P	
Cell #2	1.14	0.60	90	P	
Cell #3	1.14	0.60	90	P	
Cell #4	1.16	0.60	90	P	
Cell #5	1.17	0.60	90	P	
Ni-MH AAA 250mAh					
Cell #1	1.14	0.25	90	P	
Cell #2	1.15	0.25	90	P	
Cell #3	1.16	0.25	90	P	
Cell #4	1.17	0.25	90	P	
Cell #5	1.15	0.25	90	P	

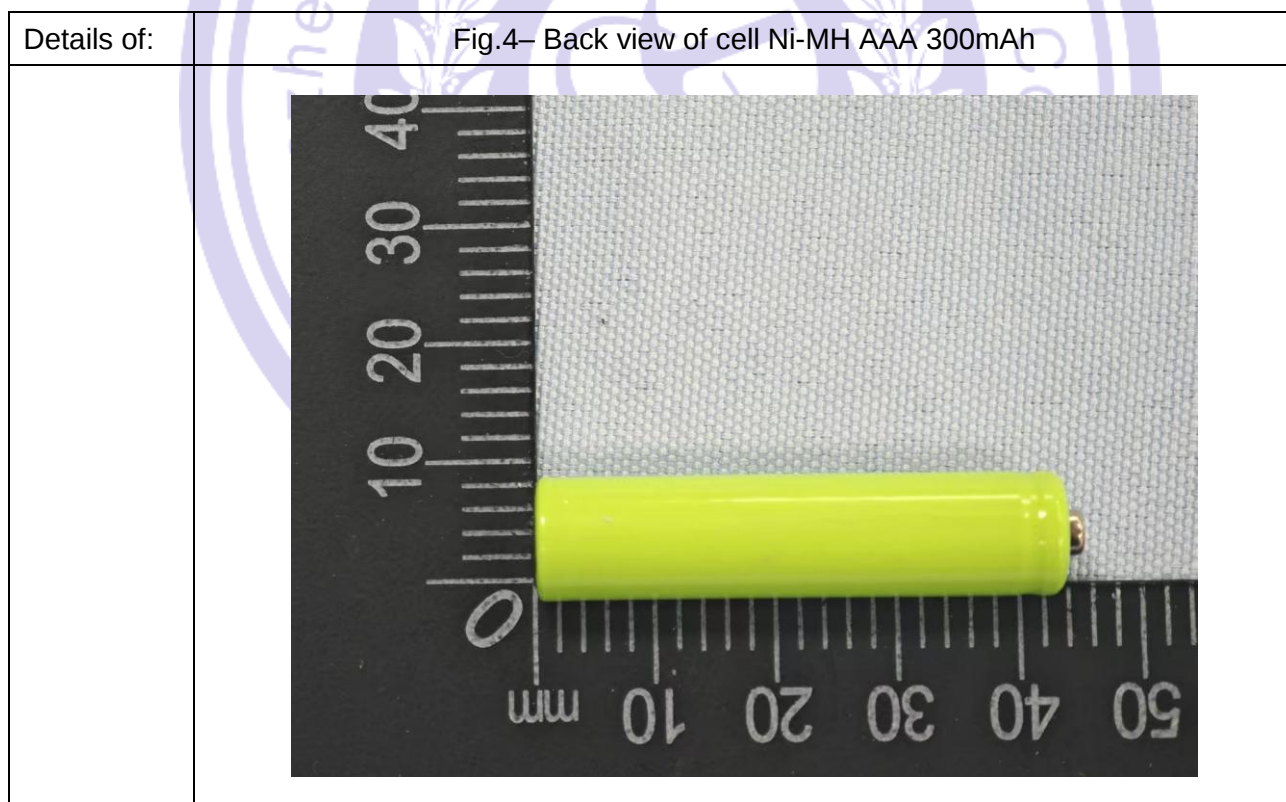
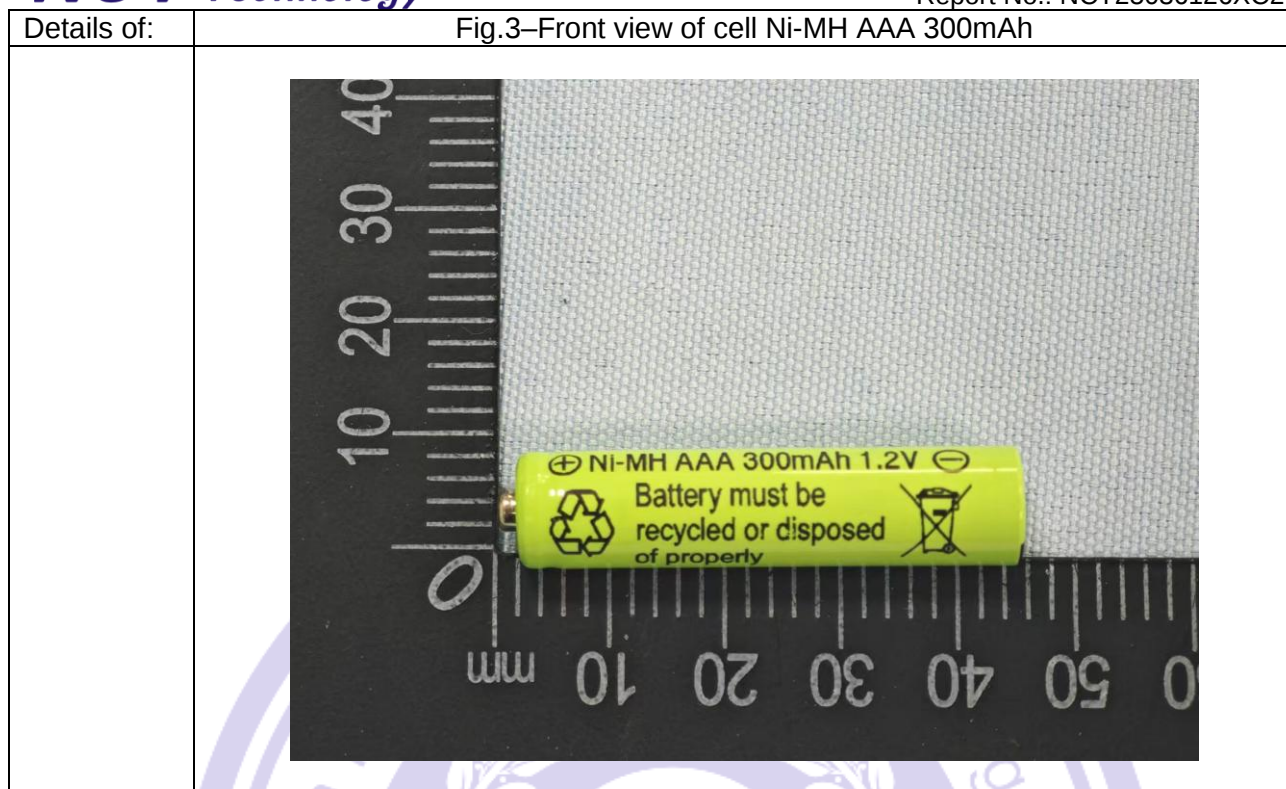
Ni-MH AAA 200mAh				
Cell #1	1.13	0.20	90	P
Cell #2	1.15	0.20	90	P
Cell #3	1.14	0.20	90	P
Cell #4	1.17	0.20	90	P
Cell #5	1.15	0.20	90	P
Ni-MH AAA 150mAh				
Cell #1	1.16	0.15	90	P
Cell #2	1.16	0.15	90	P
Cell #3	1.17	0.15	90	P
Cell #4	1.16	0.15	90	P
Cell #5	1.17	0.15	90	P
Ni-MH AAA 100mAh				
Cell #1	1.14	0.10	90	P
Cell #2	1.16	0.10	90	P
Cell #3	1.14	0.10	90	P
Cell #4	1.15	0.10	90	P
Cell #5	1.17	0.10	90	P
Supplementary information: - No fire or explosion				

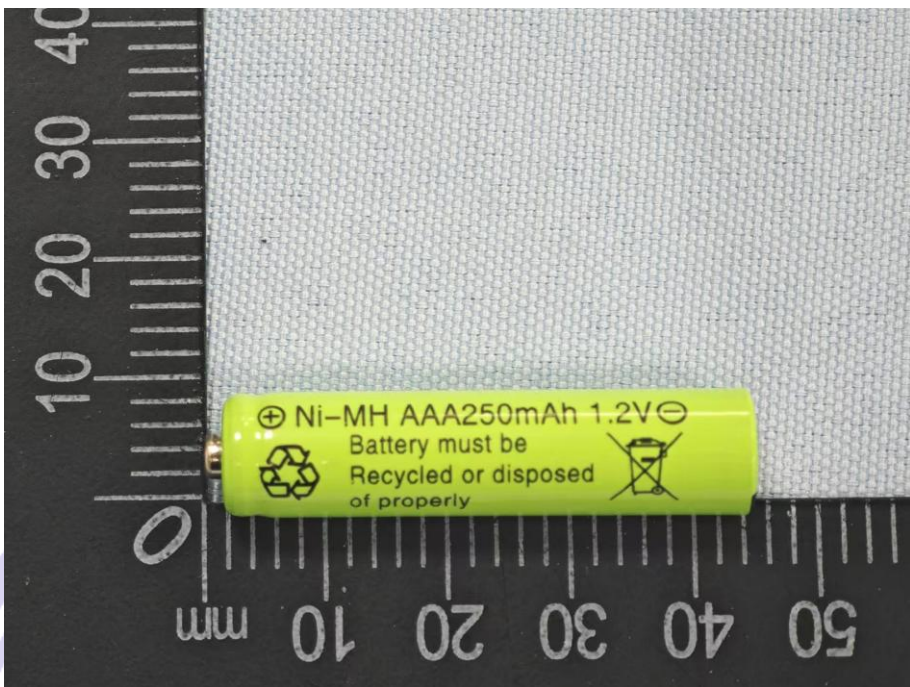
Appendix 1

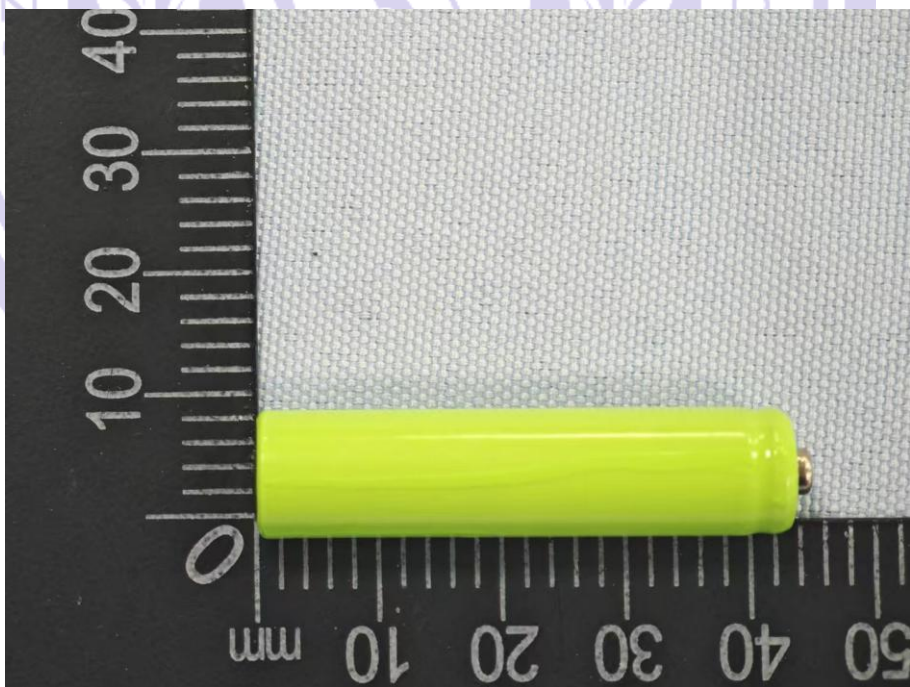
Photo Documentation

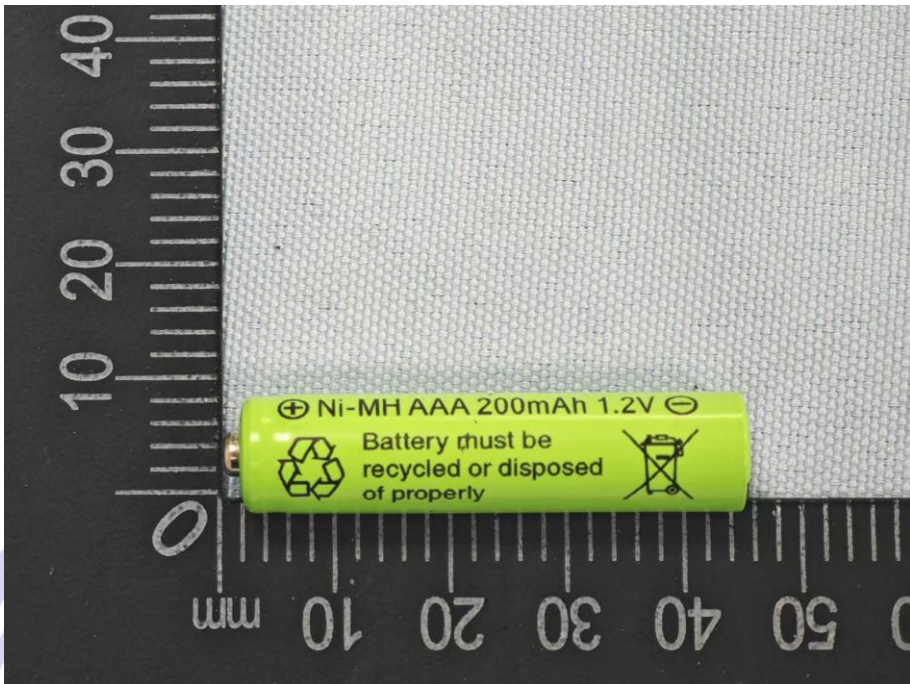
Details of:	Fig.1–Front view of cell Ni-MH AAA 600mAh
	

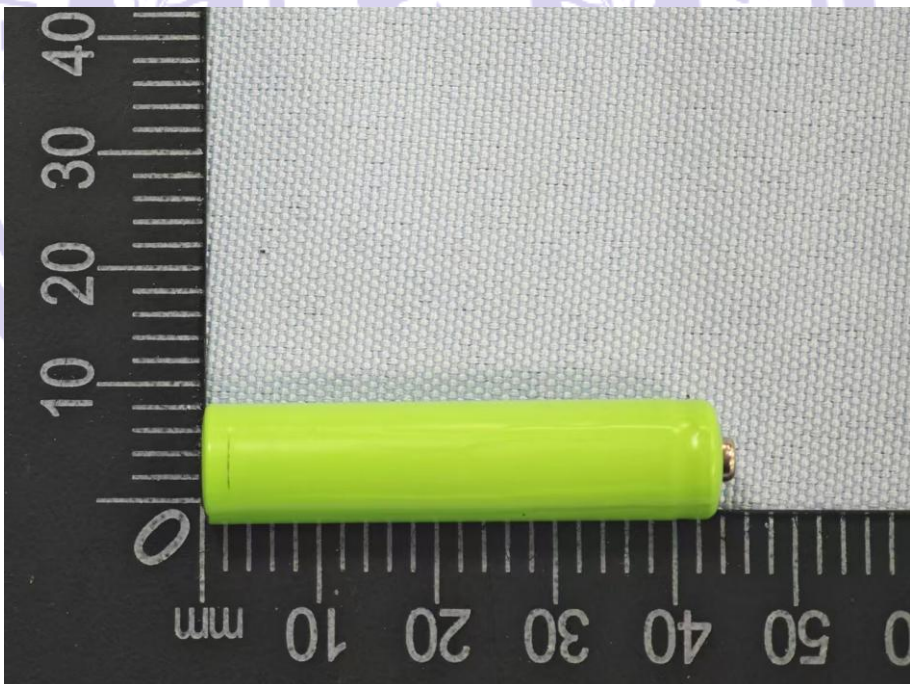
Details of:	Fig.2– Back view of cell Ni-MH AAA 600mAh
	

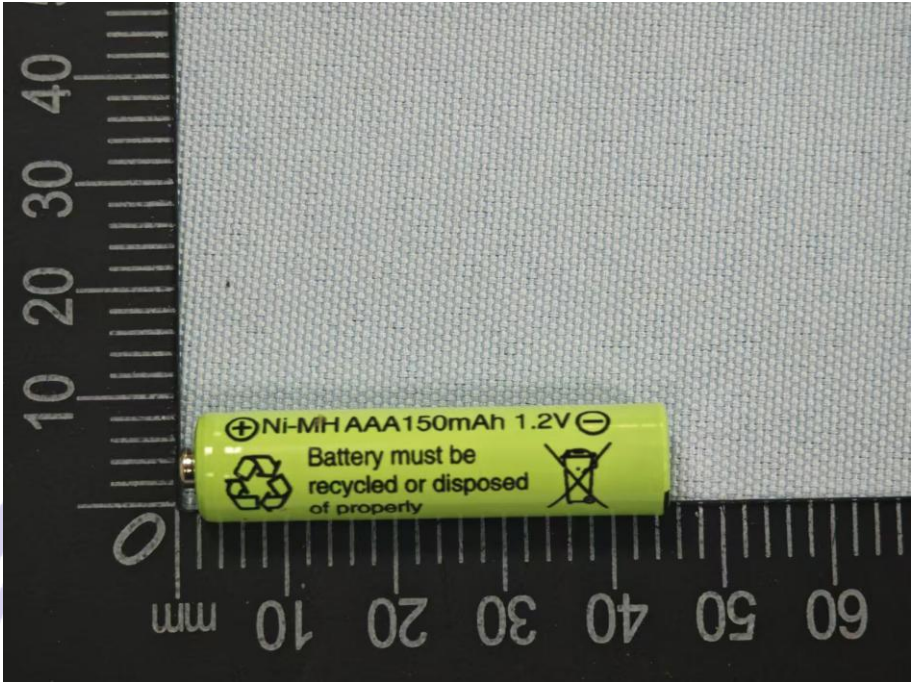


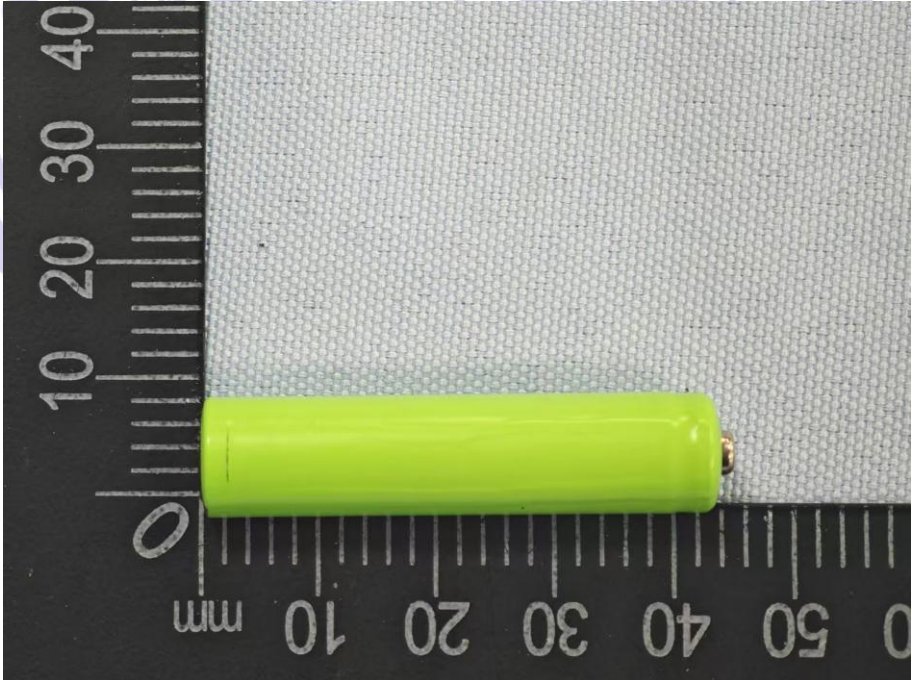
Details of:	Fig.5–Front view of cell Ni-MH AAA 250mAh
	

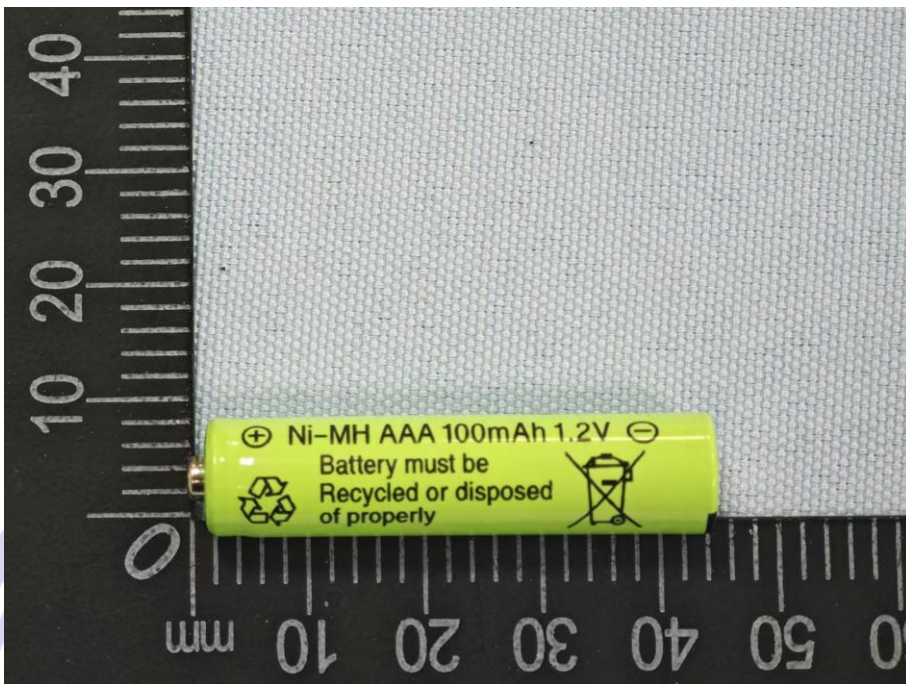
Details of:	Fig.6– Back view of cell Ni-MH AAA 250mAh
	

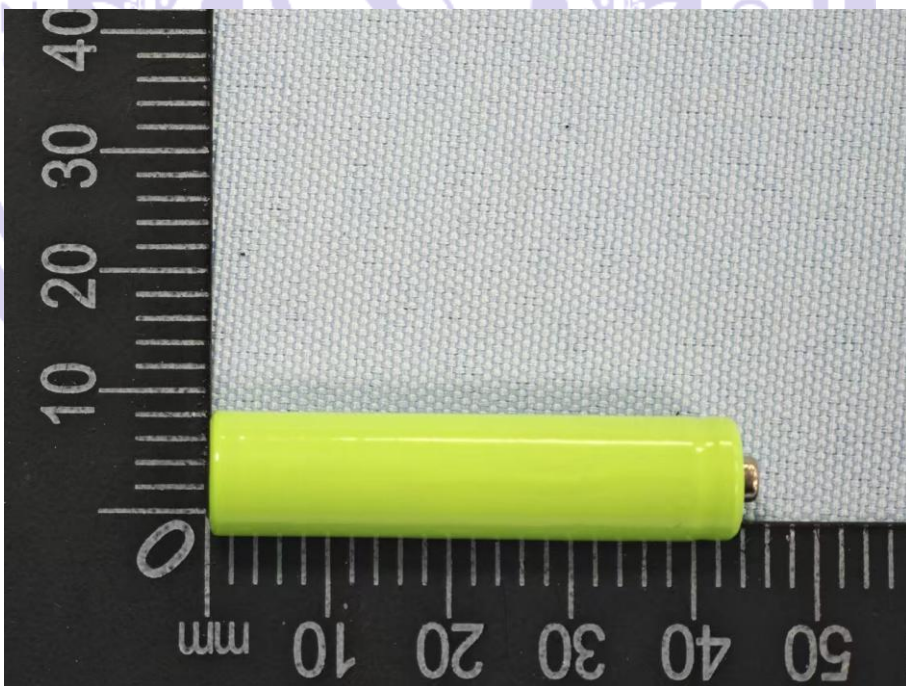
Details of:	Fig.7–Front view of cell Ni-MH AAA 200mAh
	

Details of:	Fig.8– Back view of cell Ni-MH AAA 200mAh
	

Details of:	Fig.9–Front view of cell Ni-MH AAA 150mAh
	 A photograph showing the front view of a yellow Ni-MH AAA 150mAh 1.2V battery. The battery is positioned horizontally next to a black ruler with white markings. The ruler shows measurements in millimeters (0 to 60) and centimeters (10 to 40). The battery has a green label with the text "Ni-MH AAA 150mAh 1.2V", a recycling symbol, and the text "Battery must be recycled or disposed of properly".

Details of:	Fig.10– Back view of cell Ni-MH AAA 150mAh
	 A photograph showing the back view of a yellow Ni-MH AAA 150mAh battery. The battery is positioned horizontally next to a black ruler with white markings. The ruler shows measurements in millimeters (0 to 60) and centimeters (10 to 40). The battery has a green label with the text "Ni-MH AAA 150mAh 1.2V", a recycling symbol, and the text "Battery must be recycled or disposed of properly".

Details of:	Fig.11– Front view of cell Ni-MH AAA 100mAh
	

Details of:	Fig.12– Back view of cell Ni-MH AAA 100mAh
	

National Requirements			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT

CAN/CSA-E62133:13

Canada NATIONAL REQUIREMENTS

(Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications - Part 1: Nickel systems)

Differences according to.....: CSA C22.2 NO. 62133-1: 20

Attachment Form No......: CSA Group

Master Attachment.....: Dated 2012-11-19

	Exact wording		P
1	<i>[Add the following]</i> This Standard covers secondary cells and batteries that are intended to be installed or used in accordance with CSA C22.1, Canadian Electrical Code, Part I.		P
2	2 Normative references <i>[Add the following]</i> Where reference is made to CSA Group publications, such reference shall be considered to refer to the latest edition and all amendments published to that edition. This Standard refers to the following publications, and the years shown indicate the latest editions available at the time of printing: CSA Group C22.1-12 <i>Canadian Electrical Code, Part I</i> CAN/CSA-C22.2 No. 0-10 <i>General requirements — Canadian Electrical Code, Part II</i> C22.2 No. 0.15-01 (R2012) <i>Adhesive labels</i> CAN/CSA-C22.2 No. 0.17-00 (R2013) <i>Evaluation of properties of polymeric materials</i> C22.2 No. 39-12 <i>Fuseholder assemblies</i> C22.2 No. 127-09 <i>Equipment and lead wires</i> CAN/CSA-C22.2 No. 198.1-06 (R2010) <i>Extruded insulating tubing</i> C22.2 No. 235-04 (R2013) <i>Supplementary protectors</i> <i>Certification Informs, Component Acceptance Service No. 53 (January 2013)</i> <i>Positive temperature coefficient (PTC) thermistors</i> CSA/CAN E61951-1:14 <i>Secondary cells and batteries containing alkaline or other non-acid electrolytes – Portable sealed rechargeable single cells – Part 1: Nickel-cadmium</i> CSA/CAN E61951-2:14 <i>Secondary cells and batteries containing alkaline or other non-acid electrolytes – Portable sealed rechargeable single cells – Part 2: Nickel-metal hydride</i>		P

National Requirements			
Clause	Requirement + Test	Result - Remark	Verdict
3	<i>[Add the following clause]</i> 3A General requirements General requirements applicable to these products are provided in CAN/CSA-C22.2 No. 0.		P
5	5 General safety considerations 5.1 General <i>[Add the following at the end of Clause 5.1]</i> All safety components shall be suitable for use in accordance with the applicable CSA Group Standards where available. Examples of such components and subassemblies are as follows: a) wiring in accordance with CSA C22.2 No. 127; b) insulation tubing in accordance with CAN/CSA-C22.2 No. 198.1; c) protection devices such as fuses in accordance with CSA C22.2 No. 235, and PTC thermistors in accordance with CSA Component Acceptance Service No. 53; d) fuseholders in accordance with CSA C22.2 No. 39; and e) printed wiring boards and outer plastic enclosures shall be flammability rated a minimum of V-1 in accordance with CAN/CSA-C22.2 No. 0.17.		P
9	9 Marking 9.1 Cell marking <i>[Add the following after the first paragraph]</i> Cell marking shall also include the model or type number. Cautions and warnings shall be in English and French in accordance with CAN/CSA-C22.2 No. 0. If external labels are used, they shall be a suitable type in accordance with CSA C22.2 No. 0.15. 10.2 Battery marking <i>[Add the following after the first paragraph]</i> Cautions and warnings shall be in English and French in accordance with CAN/CSA-C22.2 No. 0. If external labels are used, they shall be a suitable type in accordance with CSA C22.2 No. 0.15.		P

---End of Test Report---