

TEST REPORT JIS C 62133-1:2020 ポータブル機器用二次電池の安全性一 第1部:アルカリ蓄電池 Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications- Part 1: Nickel systems	
Report Number.....	: RHDTL260325005
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Test specification:	
Standard.....	: <input checked="" type="checkbox"/> JIS C 62133-1:2020
Test item description.....	: Nickel-metal hydride battery
Trade Mark.....	: Maecker
Manufacturer.....	: Shenzhen Jindinglong Technology Co., Ltd.
Address.....	: 4th Floor, Building 1, Sanwei Chaxi Industrial Zone, Sanwei Community, Hangcheng Street, Baoan District, Shenzhen Province
Model/Type reference.....	: AA600
Ratings.....	: 1.2V 600mAh

List of Attachments (including a total number of pages in each attachment): /	
Summary of testing:	
<p>Tests performed (test clause and name of test):</p> <p>Test items:</p> <ul style="list-style-type: none"> cl.7.1 Charging procedure for test purposes; cl.7.2.1 Continuous low-rate charging (for Cell); cl.7.2.2 Vibration (for Cell); cl.7.2.4 Temperature cycling (for Cell); cl.7.3.1 Incorrect installation (for Cell); cl.7.3.2 External short circuit (for Cell); cl.7.3.3 Free fall (for Cell); cl.7.3.4 Mechanical shock (crash hazard) (for Cell); cl.7.3.5 Thermal abuse (for Cell); cl.7.3.6 Crushing of cells (for Cell); cl.7.3.7 Low pressure (for Cell); cl.7.3.8 Overcharge (for Cell); cl.7.3.9 Forced discharge (for Cell); <p>Tests are made with the number of cells specified in JIS C 62133-1:2020 Table 1.</p>	<p>Testing location:</p> <p>Dongguan HDTL Technology Co., Ltd. Room 101, Building 1, No. 5 of Jinzhong Road, Dongcheng Street, Dongguan City, Guangdong Province, China.</p>
Summary of compliance with National Differences (List of countries addressed):N/A	

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.

1.2V 600mAh	
Nickel-metal hydride battery	
+ AA600	-
YYYYMMDD	
Shenzhen Jindinglong Technology Co., Ltd.Red	

Remark: "YYYY" means to years; "MM" means to months; "DD" means to days;

Test item particulars..... :	
Classification of installation and use.....:	To be defined in final system
Supply connection.....:	Maecker
Recommend charging method declared by the manufacturer..... :	CC(120mA for 10 hours)
Discharge current (0,2 I_t A)	120mA
Specified final voltage..... :	1.0V
Chemistry	nickel systems
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A (Not Applicable)
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing..... :	
Date of receipt of test item..... :	2026-03-25
Date (s) of performance of tests..... :	2026-03-25 to 2026-04-02
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 <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	

General product information and other remarks:

This product is a rechargeable Ni-MH Battery without any protective circuit.

The main features of the cell are shown as below:

Model	Rated capacity	Nominal voltage	Nominal Charge Current	Nominal Discharge Current	Maximum Charge Current	Maximum Discharge Current	Cut-off Voltage
AA600	600mAh	1.2V	120mA	120mA	600mA	600mA	1.0V

Construction:N/A

Circuit diagram:N/A

JIS C 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		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 on the top of 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		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
	Terminal contacts are arranged to minimize the risk of short circuits		P
5.6	Assembly of cells into batteries	Cell only	N/A

JIS C 62133-1			
Clause	Requirement + Test	Result - Remark	Verdict
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		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	Complied. Quality plan has been 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		P
	Unless noted otherwise in the test methods, testing was conducted in an ambient of 20°C ± 5°C.		P

7	Specific requirements and tests		P
7.1	Charging procedure for test purposes		P
7.2	Intended use		P
7.2.1	Continuous low-rate charging (cells)		P
	Results: No fire. No explosion	(See Table 7.2.1)	P
7.2.2	Vibration		P
	Results: No fire. No explosion. No leakage	(See Table 7.2.2)	P
7.2.3	Case stress at high ambient temperature(batteries)		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		P

JIS C 62133-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Results: 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.		P
	Results: No fire. No explosion..... :	(See Table 7.3.1)	P
7.3.2	External short circuit		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..... :	(See Table 7.3.2)	P
7.3.3	Free fall		P
	Results: No fire. No explosion.		P
7.3.4	Mechanical shock (crash hazard)		P
	Results: No fire. No explosion. No leakage.		P
7.3.5	Thermal abuse (cells)		P
	Oven temperature (°C)..... :		—
	Results: 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
	- 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..... :	(See Table 7.3.6)	P
7.3.7	Low pressure (cells)		P
	Chamber pressure (kPa)..... :		—
	Results: No fire. No explosion. No leakage.		P
7.3.8	Overcharge		P
	Results: No fire. No explosion..... :	(See Table 7.3.8)	P
7.3.9	Forced discharge		P
	Results: No fire. No explosion..... :	(See Table 7.3.9)	P
8	Information for safety		P

JIS C 62133-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.1	General	Nickel system	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.	Information for safety mentioned in manufacturer's specifications	P
	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.	Information for guidance is provided in manufacturer's specifications.	N/A
8.2	Small cell and battery safety information	Not small cell and battery	N/A
	The following warning language is to be provided with the information packaged with the small cells and batteries or equipment using them:		N/A
	-Keep small cells and batteries which are considered swallowable out of the reach of children.		N/A
	-Swallowing may lead to burns, perforation of soft tissue, and death. Severe burns can occur within 2h of ingestion.		N/A
	-In case of ingestion of a cell or battery, seek medical assistance promptly.		N/A

9	Marking		P
9.1	Cell marking		P
	Cells marked as specified in the applicable cell standards: IEC 61951-1 or IEC 61951-2.		N/A
	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.		P
	However, cell marking can be indicated with the battery, the instructions and/or the specifications.		P
9.2	Battery marking		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

JIS C 62133-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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	Not small cell and battery	N/A
	Small cells and batteries determined to be small are including a caution statement regarding the hazards of ingestion in accordance with 8.2.		N/A
	Small cells and batteries are intended for direct sale in consumer-replaceable applications, caution for ingestion are given on the immediate package.		N/A
9.4	Other information		P
	Storage and disposal instructions marked on or supplied with the battery.		P
	Recommended charging instructions marked on or supplied with the battery.		P

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

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

TABLE: Critical components information					P
Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹⁾
Cell	Dongguan FBTech Industrial Co., Ltd	AAJ2800mAh	1.2V, 2800mAh	JIS C 62133-1:2020	Tested with appliance
-Positive electrode				--	--
-Negative electrode				--	--
-Separator				--	--
-Electrolyte				--	--
Supplementary information: ¹⁾ Provided evidence ensures the agreed level of compliance. See OD-2039.					

7.2.1 TABLE: Continuous low rate charge (cells)					P
Sample no.	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
C1	CC	1.2	0.24	1.243	P
C2	CC	1.2	0.24	1.251	P
C3	CC	1.2	0.24	1.247	P
C4	CC	1.2	0.24	1.244	P
C5	CC	1.2	0.24	1.240	P

Supplementary information:

- No fire or explosion
- No leakage
- Leakage
- Fire
- Explosion
- Bulge
- Others (please explain)

7.2.2 TABLE: Vibration			P
Sample no.	OCV at start of test, (Vdc)	Results	
C1	1.243	P	
C2	1.251	P	
C3	1.247	P	
C4	1.244	P	
C5	1.240	P	

Supplementary information:

- No fire or explosion
- No leakage
- Leakage
- Fire
- Explosion
- Bulge
- Others (please explain)

7.3.1	TABLE: Incorrect installation (cells)			P
Sample no.	OCV of reversed cell, (Vdc)		Results	
C16	1.246		P	
C20	1.242		P	
C24	1.241		P	
C28	1.244		P	
C32	1.242		P	

Supplementary information:

- No fire or explosion
- No leakage
- Leakage
- Fire
- Explosion
- Bulge
- Others (please explain)

7.3.2	TABLE: External short circuit					P
Sample no.	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	
C36	23.6	1.248	0.088	41.7	P	
C37	23.6	1.245	0.081	38.4	P	
C38	23.6	1.242	0.082	40.9	P	
C39	23.6	1.243	0.086	52.2	P	
C40	23.6	1.246	0.087	59.4	P	
C41	55.8	1.245	0.092	7.5	P	
C42	55.8	1.244	0.090	11.6	P	
C43	55.8	1.242	0.090	10.8	P	
C44	55.8	1.243	0.084	11.8	P	
C45	55.8	1.247	0.086	15.9	P	

Supplementary information:

- No fire or explosion
- No leakage
- Leakage
- Fire
- Explosion
- Bulge
- Others (please explain)

7.3.6	TABLE: Crush			P
Sample no.	OCV at start of test, (Vdc)	OCV at removal of crushing force, (Vdc)	Results	
C59	1.252	--	P	
C60	1.244	--	P	
C61	1.253	--	P	
C62	1.237	--	P	
C63	1.243	--	P	

Supplementary information:

- No fire or explosion
- No leakage
- Leakage
- Fire
- Explosion
- Bulge
- Others (please explain)

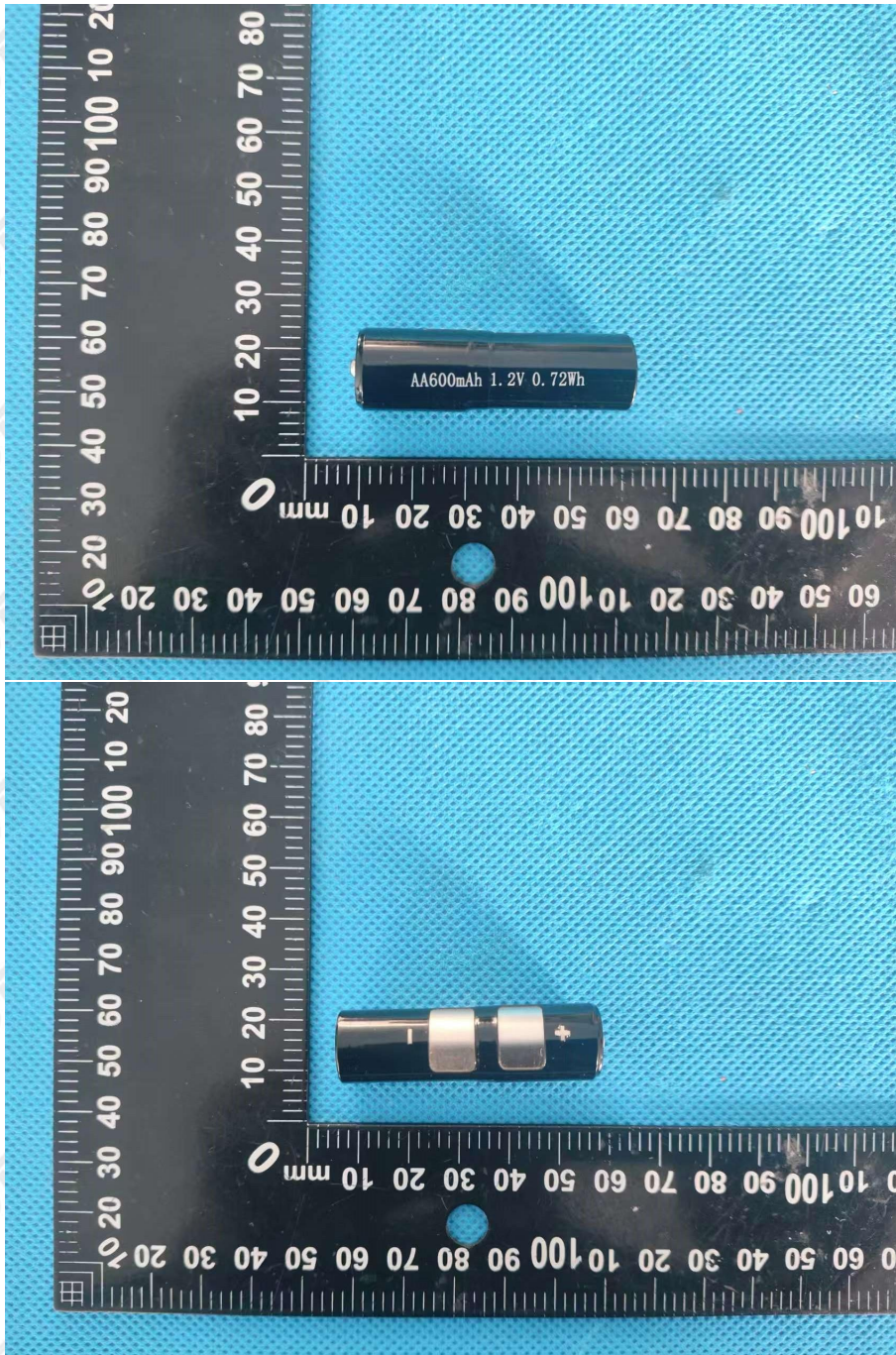
7.3.8	TABLE: Overcharge			P
Sample no.	OCV prior to charging, (Vdc)	Maximum charge current, (A)	Capacity for charging, (mAh)	Results
C67	1.247	0.6	600	P
C68	1.245	0.6	600	P
C69	1.246	0.6	600	P
C70	1.248	0.6	600	P
C71	1.246	0.6	600	P

7.3.9	TABLE: Forced discharge (cells)			P
Sample no.	OCV before application of reverse charge, (Vdc)	Measured reverse charge I_t , (A)	Time for reversed charge, (minutes)	Results
C72	1.244	0.6	600	P
C73	1.247	0.6	600	P
C74	1.247	0.6	600	P
C75	1.246	0.6	600	P
C76	1.242	0.6	600	P

Supplementary information:

- No fire or explosion
- No leakage
- Leakage
- Fire
- Explosion
- Bulge
- Others (please explain)

Photos



--- End of Report ---