



三帕认证

TEST REPORT

Name of Sample: Lithium-ion Rechargeable Cell

Model: INR18650

Ratings: 3.7Vd.c., 2.0Ah

Report No.: JXDT20211224PSE01

Standard: Attached Table 9 (PSE)

Guangzhou CP-UP Certification Technology Service Co., Ltd.





TEST REPORT

Revision of the Ministerial Ordinance For Determining Technical Standards For Electrical Appliances Attached Table 9: Lithium Ion Secondary

Report Number..... : JXDT20211224PSE01

Date of issue..... : 2022-01-25

Total number of pages..... : 23 pages

Tested by (name, signature) : Tracy Chen

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Reviewed by (name, signature) : Leo Zhi

Approved by (name, signature) : Leo Zhi



Name of Testing Laboratory preparing the Report..... : Guangzhou CP-UP Certification Technology Service Co., Ltd.

Applicant's name..... : Jiangxi Dongteng Lithium Co.,Ltd.

Address..... : Xinhua Industrial Community, Dayu County, Ganzhou City, Jiangxi Province

Test specification:

Standard..... : Revision of the Ministerial Ordinance For Determining Technical Standards For Electrical Appliances Attached Table 9: Lithium Ion Secondary Batteries

Test procedure..... : Entrust test

Non-standard test method..... : N/A

Test item description..... : Lithium-ion Rechargeable Cell

Trade Mark..... : N/A

Manufacturer..... : Same as the applicant

Model/Type reference..... : INR18650

Ratings..... : 3.7Vd.c., 2.0Ah



Summary of testing:

Tests performed (name of test and test clause):

Tests are made with the number of samples specified in Revision of the Ministerial Ordinance For Determining Technical Standards For Electrical Appliances Attached Table 9: Lithium Ion Secondary Batteries

- Clause 2.(1) Continuous low-rate charging
- Clause 2.(2) Vibration
- Clause 2.(4) Temperature cycling
- Clause 3.(1) External short circuit
- Clause 3.(2) Free fall
- Clause 3.(3) Mechanical shock (crash hazard)
- Clause 3.(4) Thermal abuse
- Clause 3.(5) Crushing of cells
- Clause 3.(6) Low pressure
- Clause 3.(7) Overcharge
- Clause 3.(8) Forced discharge
- Clause 3.(9) Cell protection against a high charging rate
- Clause 3.(10) Forced internal short circuit of cells

The samples comply with the requirements of "Revision of the Ministerial Ordinance For Determining Technical Standards For Electrical Appliances Attached Table 9: Lithium Ion Secondary Batteries".

Testing location:

Guangzhou CP-UP Certification Technology Service Co., Ltd.
Room C101, C102, C103, and C104, No 9, Hengji Road, Yunxing Zhukeng Village, Shiqiao Street, Panyu District, Guangzhou City, China

Copy of marking plate:

The artwork below may be only a draft.



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Test item particulars..... :	
Classification of installation and use..... :	Use in portable applications
Supply Connection..... :	Supplied by positive cap and negative can
Recommend charging method declared by the manufacturer..... :	Charge at constant current 400mA until the voltage reaches 4.20V, then charge at 4.20V till charge current is 20mA.
Discharge current (0,2 It A)..... :	400mA
Specified final voltage..... :	2.75V
Upper limit charging voltage per cell..... :	4.25V
Maximum charging current..... :	1000mA
Charging temperature upper limit..... :	45°C
Charging temperature lower limit..... :	0°C
Polymer cell electrolyte type..... :	<input type="checkbox"/> gel polymer <input type="checkbox"/> solid polymer <input checked="" type="checkbox"/> N/A
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..... :	2021-12-24
Date (s) of performance of tests..... :	2021-12-24 to 2022-01-25
General remarks:	
<p>"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p>	
Name and address of factory (ies)..... :	Same as the applicant

**General product information:**

Additionally, detailed information of the cell is as following:

Product name	Lithium-ion Rechargeable Cell
Type/model	INR18650
Nominal voltage	3.7Vd.c.
Rated capacity	2.0Ah
Charging voltage declared by manufacturer	4.20V
Upper limit charging voltage	4.25V
Final voltage	2.75V
Charging current declared by manufacturer	400mA
Maximum charging current	1000mA
Charging temp. upper limit	45°C
Charging temp. lower limit	0°C
Charge procedure at 20°C±5°C declared by manufacturer	Charge at constant current 400mA until the voltage reaches 4.20V, then charge at 4.20V till charge current is 20mA.
Charging procedure Highest test temperature & Lowest test temperature	Stored at -5°C or 45°C for 1 h - 4 h. Charge at constant current 1000mA until the voltage reaches 4.25V, then charge at 4.25V till charge current is 0.05ItA (100mA).
Dimensions	(18.3mm+0.3/-0.15mm)(Diameter) × (65mm±0.3mm)(Height)
Weight	Approx. 44.1g
Discharging current declared by manufacturer	400mA
Maximum discharging current	6000mA
Discharging temperature range	-10°C to 60°C

Note: The information above is from the documents provided by the applicant.



Revision of the Ministerial Ordinance For Determining Technical Standards For Electrical Appliances Attached
Table 9: Lithium Ion Secondary Batteries

Clause	Requirement + Test	Result - Remark	Verdict
1.	Basic Design		P
1.(1)	Insulation and Wiring		N/A
	a) The insulation resistance between the positive terminal and a metal surface (excluding electrical contact surfaces and electrical parts having the same potential as the electrode potential of the battery) exposed to outside the battery, and which, as mounted on the equipment, may be touched by a human, shall be 5 MΩ or more at 500 VDC.		N/A
	b) Internal wiring and its insulation shall sufficiently withstand anticipated maximum current, maximum voltage, and maximum temperature.		N/A
	c) Equipment having connection terminals shall be wired to maintain an appropriate clearance and creepage distance between terminals.		N/A
1.(2)	Inner Pressure Reduction Mechanism		P
	a) Battery cases and cells shall be designed with a gas release mechanism, or shall be designed to reduce excessive internal pressure when the equipment reaches a value or rate set so as to protect against explosion or fire.		P
	b) If support material is used to fix cells within the battery case, the type of support material and method of fixing cells shall not inhibit pressure relief, and the battery shall not induce overheating during normal use of the battery.		N/A
1.(3)	Temperature and current management		N/A
	The battery shall be designed so that abnormal temperature-rise conditions are prevented.		N/A
	Provided that this does not apply if a current limiter is installed outside the battery to control abnormal temperature-rise during charging and discharging within a safety level.		N/A
1.(4)	Terminal contacts		N/A
	a) The battery shall be marked positive (+) or negative (-) for terminals on its external surface or be designed with no fear of misconnection.		N/A
	b) Batteries having a terminal contact plate shall be sized and shaped to ensure the flow of maximum current anticipated.		N/A
	c) Batteries having a terminal contact plate shall be designed so that the surface of the terminal contact plate will be a conductive material with good mechanical strength and corrosion resistance.		N/A
	Moreover, the terminal contact plate shall be arranged to minimize the risk of short circuits.		N/A
1.(5)	Assembly of cells into batteries		N/A

Revision of the Ministerial Ordinance For Determining Technical Standards For Electrical Appliances Attached
Table 9: Lithium Ion Secondary Batteries

Clause	Requirement + Test	Result - Remark	Verdict
	Batteries made of series connected cell blocks shall be designed so that cells are assembled to make the cell blocks the same capacity, and cell polarity reversal is prevented.		N/A
	Provided that this does not apply to the battery controlled by itself or the equipment as cell polarity reversal is prevented.		N/A
2.	Intended Use		P
2.(1)	Continuous charging at constant voltage		P
	Cells charged under the conditions specified in Annex Table 1-2 (hereafter called "the charged cells") shall not fire, explode, or leak after being charged at constant voltage for 28 days.	See table 2.(1)	P
2.(2)	Vibration		P
	Cells and batteries charged under the conditions specified in Annex Table 1-2 (hereafter called "the charged cells or batteries") shall not fire, explode, or leak when tested under the following test conditions:		P
	a) A simple harmonic motion with an amplitude of 0.76 mm and a total maximum excursion of 1.52 mm shall be applied to the charged cells.		P
	b) The frequency shall be increased at a rate of 1 Hz/minute from 10 Hz and reduced at a rate of 1 Hz/minute after it reaches 55 Hz, and then it shall be ensured that the frequency has reached 10 Hz.		P
	c) The entire range of frequency (10 Hz to 55 Hz) shall be tested for 90 ± 5 minutes in each of the three mutually perpendicular directions of vibration (X, Y, and Z axes).		P
	d) The vibration shall be applied in each of mutually perpendicular direction (X, Y, and Z axes) in the sequence specified below according to conditions a) to c) Provided that the order of steps 2 to 4 can be changed.		P
	Step 1: Ensure that the measured voltages of charged cells or batteries are the voltages after charging. From steps 2 to 4: Apply vibration as specified in Table 1. Step 5: Leave the charged cells or batteries for one hour, and then conduct a visual inspection.		P
2.(3)	Battery enclosure test at high ambient temperature		N/A
	A battery charged under conditions specified in Annex Table 1-2 (hereafter called "the charged battery") shall be left in an air circulating oven at $70 \pm 2^\circ\text{C}$ for seven hours.		N/A

Revision of the Ministerial Ordinance For Determining Technical Standards For Electrical Appliances Attached
Table 9: Lithium Ion Secondary Batteries

Clause	Requirement + Test	Result - Remark	Verdict
	Then the battery shall be removed from the air circulating oven and the temperature of the battery case shall be returned back to $20 \pm 5^{\circ}\text{C}$.		N/A
	At that time, said case shall not undergo deformation that exposes the internal contents.		N/A
2.(4)	Temperature cycling		P
	Charged cells or batteries shall not fire, explode, or leak when tested under the following test conditions:		P
	a) The charged cells or batteries shall be left in a thermostatic oven.		P
	b) The inner temperature of the thermostatic oven, the time it is to be left as is, and the test procedure shall be as follows: Step 1: Leave the charged cells or batteries at $75 \pm 2^{\circ}\text{C}$ for four hours. Step 2: Change the temperature to $20 \pm 5^{\circ}\text{C}$ within 30 minutes and left the equipment for at least two hours. Step 3: Change the temperature to – (minus) $20 \pm 2^{\circ}\text{C}$ within 30 minutes and the equipment shall be left for four hours. Step 4: Change the temperature to $20 \pm 5^{\circ}\text{C}$ within 30 minutes and left the equipment for at least two hours. Step 5: Steps 1 to 4 repeat another four times. Step 6: Store the charged cells at $20 \pm 5^{\circ}\text{C}$ for seven days, and then conduct a visual inspection.		P
3	Reasonably foreseeable misuse		P
3.(1)	External short circuit	See table 3.(1)	P
	a) The charged cell shall be left at an ambient temperature of $55 \pm 5^{\circ}\text{C}$.		P
	With the positive and negative terminals short-circuited via connection to a total external resistance of $80 \pm 20 \text{ m}\Omega$, the battery shall be left for 24 hours or until the difference between the surface temperature of the charged cell and the ambient temperature becomes not more than 20% of the maximum difference (whichever is the sooner), and the battery shall not fire or explode.		P
	b) The charged battery shall be left at an ambient temperature of $20 \pm 5^{\circ}\text{C}$.		N/A

Revision of the Ministerial Ordinance For Determining Technical Standards For Electrical Appliances Attached
Table 9: Lithium Ion Secondary Batteries

Clause	Requirement + Test	Result - Remark	Verdict
	With the positive and negative terminals short-circuited via connection to a total external resistance of 80 ± 20 m Ω , the battery shall be left for 24 hours or until the difference between the temperature of the battery container and the ambient temperature becomes not more than 20% of the maximum difference (whichever is the sooner ; if the battery incorporates a protective device or protective circuit and the current has stopped, then for one hour after the current stopped), and the battery shall not fire or explode.		N/A
3.(2)	Free fall		P
	When the charged cell or battery is dropped three times from a level of 1.000 mm onto a concrete floor in a random direction, the battery shall not fire or explode.	Dropped three times from a height of 1.0m.	P
	Provided that this does not apply to charged batteries weighting more than 7 kg.		P
3.(3)	Mechanical shock (crash hazard)		P
	Charged cells and batteries shall not fire, explode, or leak when tested under the following test conditions:		P
	a) The charged cell or battery shall be secured to on an impact testing machine by means of a rigid mount. Then shock of the equal magnitude shall be applied to the battery in each of three mutually perpendicular directions (X, Y, and Z axes).		P
	b) The shock applied to the charged cell or battery shall be accelerated so that the minimum average acceleration will be 735 m/s^2 during the first 3ms. The peak acceleration shall be between 1.228 m/s^2 and 1.716 m/s^2 .		P
3.(4)	Thermal abuse		P
	The charged cell at $20 \pm 5^\circ\text{C}$ shall be placed in a gravity or circulating air-convection oven.		P
	The oven temperature shall then be increased to $130 \pm 2^\circ\text{C}$ at a rate of $5 \pm 2^\circ\text{C}/\text{min.}$, left for 10 minutes, and then the battery shall not fire or explode.		P
3.(5)	Crushing of cells		P
	The charged cells shall not fire or explode when tested under the following test conditions:	See table 3.(5)	P
	a) A charged cell shall be placed between two flat surfaces and a force of $13 \pm 1 \text{ kN}$ shall be applied by a crushing apparatus.		P
	b) The force shall be released when any of the following occurs:		P
	(1) the maximum force s applied		P
	(2) an abrupt voltage drop of one-third of the original voltage has been obtained		N/A

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Table 9: Lithium Ion Secondary Batteries

Clause	Requirement + Test	Result - Remark	Verdict
	(3) there is 10% deformation of the battery height.		N/A
	c) Force shall be applied to charged cells so that the longitudinal axis of the cells becomes parallel with the flat surface of the crushing apparatus		P
	For charged cells that are prismatic (hereafter called "the prismatic cells"), a similar test shall be performed by rotating a cell 90° around its longitudinal axis and it shall be ensured that force is applied to both the wide and narrow sides of the prismatic cells. At that time, one sample shall receive force in a single direction.		N/A
3.(6)	Low pressure		P
	A charged cell shall be placed in a vacuum chamber, the chamber shall be closed, and then the chamber shall be gradually reduced to a pressure equal to or less than 11.6 kPa. After being kept in that pressure of the value in the vacuum chamber for six hours, the cell shall not fire, explode, or leak.		P
3.(7)	Overcharge		P
	The cell discharged under the conditions specified in Annex Table 1-2 (including cells equipped with a protective device for use in equipment or batteries; hereafter called "the discharged cells") shall be provided.		P
	Then by using a power supply of not less than 10V, the battery shall be energized until it reaches 250% of the rated capacity or the test voltage with the designed charging current, and the battery shall not fire or explode.	See table 3.(7)	P
3.(8)	Forced discharge		P
	When polarity reversely charged at 1 ItA for 90 minutes, the discharged cell shall not fire or explode.	See table 3.(8)	P
3.(9)	Cell protection against a high charging rate	See table 3.(9)	P
	The discharged cells shall not fire or explode when charged at a current three times the designed charging current,		P
	thereby fully charging it,		P
	or when a protective device used in the equipment or battery cuts off the charge current.		N/A
3.(10)	Forced internal short circuit of cells	See table 3.(10)	P
	The winding core of a charged cell (except for those whose electrolyte is not liquid) shall not fire when tested according to the test procedure specified below. Note that each test shall use a new sample.		P
	Inserted between the positive active material and negative active material		P



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Table 9: Lithium Ion Secondary Batteries

Clause	Requirement + Test	Result - Remark	Verdict
	Inserted between the uncoated current collector of positive electrode and the active material coated negative active electrode		N/A
	Test was stopped when voltage drop of over 50 mV was obtained, or		N/A
	Stopped when the pressure reached 800 N (for prismatic cells, 400N).	800N	P
	Ambient temperature when testing		P
	Number of test sample		P
3.(11)	Function of the overvoltage protection of batteries		N/A
	When tested at an ambient temperature of $20 \pm 5^{\circ}\text{C}$ by using any method specified below, the cell block in the battery shall not exceed the upper limited charging voltage specified in Annex Table 1-2.		N/A
	a) For batteries made of a one cell block, the voltage applied to the cell block during charging shall be measured.		N/A
	b) For batteries consisting of a series of two pieces or more of cell blocks, it shall be charged while measuring the voltage of each cell block and at the same time, one cell block shall forcibly be discharged and the voltages of the other cell blocks shall gradually be measured.		N/A
	c) For batteries consisting of a series of connection of two pieces or more of cell blocks, a voltage exceeding the upper limited charging voltage specified in Annex Table 1-2 shall be applied to the cell block while measuring the voltage of each cell block. When the charging stops, the voltage shall be measured.		N/A
3.(12)	Free fall of appliance		N/A
	The charged batteries shall not undergo short-circuiting when tested under the conditions specified below.		N/A
	At an ambient temperature of $20 \pm 5^{\circ}\text{C}$, according to the appliance specified in the left field of Table 3, the charged battery shall be installed in appliance to be used, and shall be dropped once onto a concrete floor or iron plate in a direction considered to most likely affect the battery in a negative manner.		N/A
	Otherwise, an equivalent load shall be applied to said battery.		N/A
	However, this does not apply to portable appliance including battery weighing more than 7 kg or desktop appliance (excluding for appliance that may be carried around) weighing more than 5 kg including battery.		N/A
	Height in drop testing		N/A
4	Labelling		N/A



Revision of the Ministerial Ordinance For Determining Technical Standards For Electrical Appliances Attached
Table 9: Lithium Ion Secondary Batteries

Clause	Requirement + Test	Result - Remark	Verdict
	Labelling for batteries shall be provided as below on surface where it can easily be seen but not easily faded.		N/A
	Rated voltage		N/A
	Rated capacity		N/A

Revision of the Ministerial Ordinance For Determining Technical Standards For Electrical Appliances Attached
Table 9: Lithium Ion Secondary Batteries

Clause	Requirement + Test	Result - Remark	Verdict
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Type classification 型式の区分		
Name 電気用品名	Element 要素	Category 区分
Secondary lithium ion battery リチウムイオン蓄電池	Shape of secondary cell 単電池の形状	<input checked="" type="checkbox"/> Cylindrical 円筒形のもの <input type="checkbox"/> Angular 角形のもの <input type="checkbox"/> others その他のもの
	Type of electrolyte in secondary cell 単電池の電解質の種類	<input checked="" type="checkbox"/> Liquid state 液体状のもの <input type="checkbox"/> Others その他のもの
	Upper-Limit charge voltage of secondary cell 単電池の上限充電電圧	<input checked="" type="checkbox"/> 4.25V or less 4.25V 以下のもの <input type="checkbox"/> More than 4.25V 4.25V を超えるもの
	Weight of secondary battery 組電池の質量	<input type="checkbox"/> 7kg or less 7 k g 以下のもの <input type="checkbox"/> More than 7kg 7 k g を超えるもの
	Number of cell blocks 電池ブロックの個数	<input type="checkbox"/> Single 1 個のもの <input type="checkbox"/> Multiple 2 個以上のもの
	Overcharge protection 過充電の保護機能	<input type="checkbox"/> Controlled by secondary battery 組電池で制御するもの <input type="checkbox"/> Controlled by equipment incorporating a secondary battery or a charger 組電池搭載機器又は充電器で制御するもの
	Usage 用途	<input type="checkbox"/> For portable devices 携帯機器用のもの <input type="checkbox"/> For desktop equipment 卓上機器用のもの <input type="checkbox"/> Others その他のもの
	Type of battery 組電池の種類	<input type="checkbox"/> Those designed to fix to appliances by soldering or other joining methods so that cannot be easily removed or those having other special construction. はんだ付けその他の接合方法により、容易に取り外すことができない状態で機械器具に固定して用いられるものその他の特殊な構造のもの <input type="checkbox"/> Others その他のもの

**TABLE: List of critical Components**

Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity
1. Electrolyte	Xiamen Shouneng Technology Co., Ltd.	SN3334HA	LiPF ₆	-	-
2. Separator	Shenzhen Jinglitai Technology Co., Ltd.	0.016*61mm	PE	-	-
3. Positive electrode	Jiangxi Dongteng Lithium Co., Ltd.	NCM651520	LiNiCoMnO ₂ , Lithium Manganate, etc., Aluminum Foil	-	-
4. Negative electrode	Jiangxi Dongteng Lithium Co., Ltd.	DT-1	Graphite, etc., Copper Foil	-	-
5. Heat- shrinking outer- wrap	Huizhou Lianyun Plastic Electronics Co., Ltd.	29.8*0.09mm	PVC, VW-0, 80°C, 0.09mm thick.	-	-

Note: The information above is from the documents provided by the applicant.



2.(1)	TABLE: Continuous low-rate charging				P
Model	Upper limit charging voltage V_c , (Vdc)	Maximum charging current I_{rec} , (A)	OCV at start of test, (Vdc)	Results	
Samples tested at the highest test temperature					
C1#	4.25	1.0	4.191	A, B	
C2#	4.25	1.0	4.190	A, B	
C3#	4.25	1.0	4.189	A, B	
C4#	4.25	1.0	4.191	A, B	
C5#	4.25	1.0	4.189	A, B	
Supplementary information:					
A- No fire or explosion B- No leakage C- Leakage D- Fire E- Explosion F- Bulge G- Others (please explain)					

3.(1)	TABLE: External short circuit (cell)					P
Model	Ambient, (°C)	OCV at start of test, (Vdc)	Resistance of circuit, (mΩ)	Maximum case temperature (°C)	Results	
Samples charged at the highest test temperature						
C16#	55.0	4.228	79	114.7	A	
C17#	55.0	4.230	82	117.0	A	
C18#	55.0	4.224	80	112.2	A	
C19#	55.0	4.229	83	109.8	A	
C20#	55.0	4.231	82	115.3	A	
Samples charged at the lowest test temperature						
C21#	55.2	4.149	83	115.8	A	
C22#	55.2	4.151	85	120.3	A	
C23#	55.2	4.146	82	117.4	A	
C24#	55.2	4.146	82	117.0	A	
C25#	55.2	4.149	80	116.8	A	
Supplementary information:						
A- No fire or explosion B- No leakage C- Leakage D- Fire E- Explosion F- Bulge G- Others (please explain)						



3.(1)	TABLE: External short circuit (battery)					N/A
Model	Ambient, (°C)	OCV at start of test, (Vdc)	Resistance of circuit, (mΩ)	Maximum case temperature (°C)	Results	
Samples charged at the highest test temperature						
-	-	-	-	-	-	
-	-	-	-	-	-	
-	-	-	-	-	-	
-	-	-	-	-	-	
-	-	-	-	-	-	
Samples charged at the lowest test temperature						
-	-	-	-	-	-	
-	-	-	-	-	-	
-	-	-	-	-	-	
-	-	-	-	-	-	
-	-	-	-	-	-	

Supplementary information:
A- No fire or explosion
B- No leakage
C- Leakage
D- Fire
E- Explosion
F- Bulge
G- Others (please explain)



3.(5)	TABLE: Crush		P
Model	OCV at start of test, (Vdc)	Results	
Samples charged and tested at the highest test temperature			
C44#	4.232	A	
C45#	4.227	A	
C46#	4.225	A	
C47#	4.225	A	
C48#	4.228	A	
Samples charged and tested at the lowest test temperature			
C49#	4.150	A	
C50#	4.150	A	
C51#	4.152	A	
C52#	4.147	A	
C53#	4.149	A	

Supplementary information:

- A- No fire or explosion
- B- No leakage
- C- Leakage
- D- Fire
- E- Explosion
- F- Bulge
- G- Others (please explain)



3.(7)	TABLE: Overcharge					P
Model	OCV at start of test, (Vdc)	Maximum Charging Current, (A)	Charging Voltage, (Vdc)	Total Time of Charging, (h)	Results	
Samples tested at the highest test temperature						
C57#	3.174	1.0	10.0	5.0	A	
C58#	3.177	1.0	10.0	5.0	A	
C59#	3.170	1.0	10.0	5.0	A	
C60#	3.178	1.0	10.0	5.0	A	
C61#	3.172	1.0	10.0	5.0	A	
Samples tested at the lowest test temperature						
C62#	3.175	1.0	10.0	5.0	A	
C63#	3.180	1.0	10.0	5.0	A	
C64#	3.182	1.0	10.0	5.0	A	
C65#	3.171	1.0	10.0	5.0	A	
C66#	3.188	1.0	10.0	5.0	A	
Supplementary information:						
A- No fire or explosion B- No leakage C- Leakage D- Fire E- Explosion F- Bulge G- Others (please explain)						



3.(8)	TABLE: Forced discharge				P
Model	OCV before application of reverse charge, (Vdc)	Measured Reverse charge I _t , (A)	Time for reversed charge, (minutes)	Results	
Samples tested at the highest test temperature					
C67#	3.168	2.0	90	A	
C68#	3.172	2.0	90	A	
C69#	3.166	2.0	90	A	
C70#	3.177	2.0	90	A	
C71#	3.171	2.0	90	A	
Samples tested at the lowest test temperature					
C72#	3.175	2.0	90	A	
C73#	3.172	2.0	90	A	
C74#	3.172	2.0	90	A	
C75#	3.170	2.0	90	A	
C76#	3.179	2.0	90	A	
<p>Supplementary information:</p> <p>A- No fire or explosion B- No leakage C- Leakage D- Fire E- Explosion F- Bulge G- Others (please explain)</p>					



3.(9)	Cell Protection Against a High Charging Rate				P
Model	OCV at start of test, (Vdc)	Charging Current, (A)	Upper limit Charging Voltage, (Vdc)	Results	
Samples tested at the highest test temperature					
C77#	3.170	3.0	4.25	A	
C78#	3.169	3.0	4.25	A	
C79#	3.163	3.0	4.25	A	
C80#	3.169	3.0	4.25	A	
C81#	3.173	3.0	4.25	A	
Samples tested at the lowest test temperature					
C82#	3.171	3.0	4.25	A	
C83#	3.170	3.0	4.25	A	
C84#	3.174	3.0	4.25	A	
C85#	3.164	3.0	4.25	A	
C86#	3.167	3.0	4.25	A	
<p>Supplementary information:</p> <p>A- No fire or explosion B- No leakage C- Leakage D- Fire E- Explosion F- Bulge G- Others (please explain)</p>					



3.(10)	TABLE: Forced internal short circuit (cells)						P
Sample no.	Chamber ambient T (°C)	OCV before test (Vdc)	Particle location ¹⁾	Maximum applied pressure (N)	Voltage drop, mV	Results	
Samples charged at charging temperature upper limit							
C87#	45	4.223	1	800	12	A	
C88#	45	4.229	1	800	7	A	
C89#	45	4.230	1	800	7	A	
C90#	45	4.228	1	800	15	A	
C91#	45	4.228	1	800	18	A	
C92#	45	4.231	1	800	11	A	
C93#	45	4.226	1	800	11	A	
C94#	45	4.226	1	800	10	A	
C95#	45	4.230	1	800	15	A	
C96#	45	4.229	1	800	9	A	
Samples charged at charging temperature lower limit							
C97#	-5	4.150	1	800	20	A	
C98#	-5	4.143	1	800	13	A	
C99#	-5	4.143	1	800	13	A	
C100#	-5	4.153	1	800	7	A	
C101#	-5	4.155	1	800	9	A	
C102#	-5	4.148	1	800	15	A	
C103#	-5	4.148	1	800	12	A	
C104#	-5	4.152	1	800	12	A	
C105#	-5	4.152	1	800	17	A	
C106#	-5	4.149	1	800	14	A	

Supplementary information:

¹⁾ Identify one of the following:

1: Nickel particle inserted between positive and negative (active material) coated area.

2: Nickel particle inserted between positive aluminium foil and negative active material coated area.

A- No fire or explosion

B- Others (please explain)

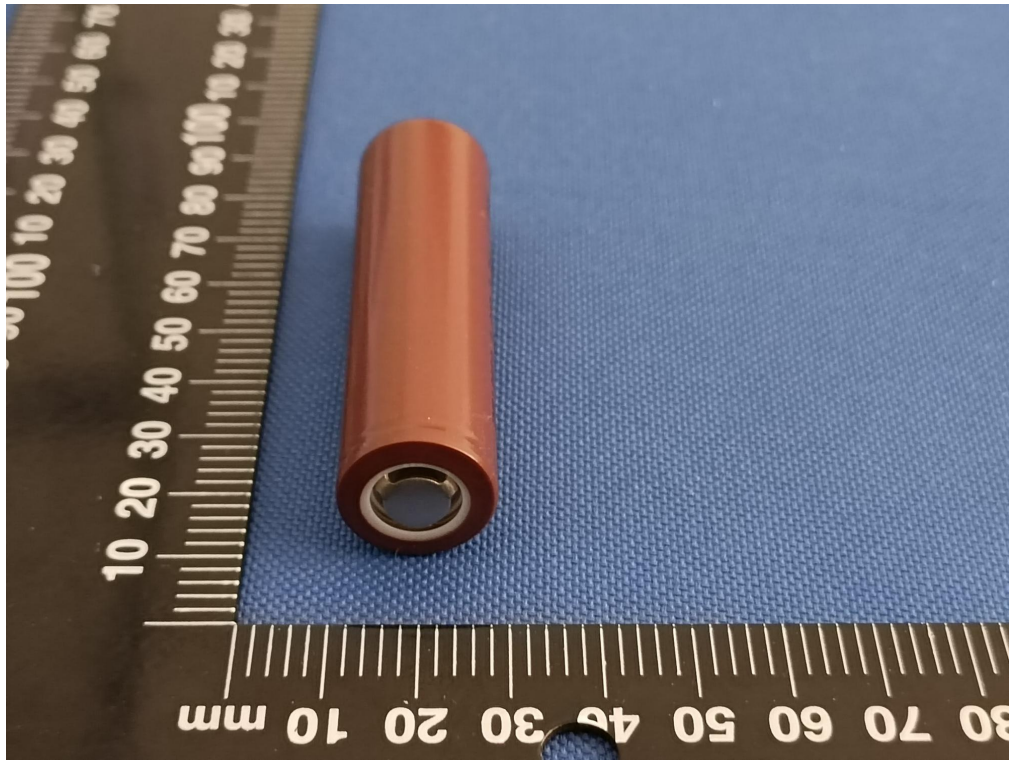
Remark: There is no Test Particle location 2 in this cell.



Photos



Front view of cell



Back view of cell



Notice

1. The test report is invalid without the testing stamp of Guangzhou CP-UP Certification Technology Service Co., Ltd..
2. Nobody is allowed to photocopy or partly photocopy this test report without written permission of Guangzhou CP-UP Certification Technology Service Co., Ltd..
3. The test report is invalid without the signatures of Approver, Checker and Tester.
4. The test report is invalid if altered.
5. Objections to the test report must be submitted to Guangzhou CP-UP Certification Technology Service Co., Ltd. Within 15 days.
6. The test report is responsible for the tested samples only.
7. As for the test conclusion, “N/A” means “not applicable”, “P” means “pass” and “F” means “fail”.
8. Our lab shall not take any responsibility if the information provided by the applicant has the problem of authenticity, which may influence the validity of the testing result.
9. The test data and results do not have social proof function.

--End of report--