
	Test Report issued under the responsibility of: NCB TÜV SÜD PSB Pte. Ltd. 15 International Business Park, TÜV SÜD@IBP Singapore 609937 Singapore	
<p style="text-align: center;">TEST REPORT IEC 62133-2 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 2: Lithium systems</p>		
Report Number..... : 085-28222077-000 Date of issue..... : 2022-06-10 Total number of pages : 26 pages		
Name of Testing Laboratory preparing the Report : TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch		
Applicant's name : Jiangxi Dongteng Lithium Co., Ltd. Address..... : Xinhua Industrial Community, Dayu County, 341599 Ganzhou City, Jiangxi Province, PEOPLE'S REPUBLIC OF CHINA		
Test specification: Standard..... : IEC 62133-2:2017, IEC 62133-2:2017/AMD1:2021 Test procedure : CB Scheme Non-standard test method : N/A		
TRF template used..... : IECEE OD-2020-F1:2021, Ed.1.4 Test Report Form No. : IEC62133_2B Test Report Form(s) Originator : DEKRA Certification B.V. Master TRF : Dated 2021-08-31		
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Test item description..... :	Li-ion Cell	
Trade Mark(s) :	N/A	
Manufacturer :	Same as the applicant	
Model/Type reference :	1) INR21700 3.5Ah, 2) INR21700 4.0Ah, 3) INR21700 4.5Ah, 4) INR21700 5.0Ah	
Ratings :	1) For model: INR21700 3.5Ah: 3.7Vd.c., 3500mAh 2) For model: INR21700 4.0Ah: 3.7Vd.c., 4000mAh 3) For model: INR21700 4.5Ah: 3.7Vd.c., 4500mAh 4) For model: INR21700 5.0Ah: 3.7Vd.c., 5000mAh	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
Testing location/ address..... :		Building A2, Jin'ao Industrial Park, No.150, Jingfang Road, Fuhai, Bao'an District, Shenzhen, Guangdong 518103, China
Tested by (name, function, signature)..... :		Saga Shen Project Handler
Approved by (name, function, signature).... :		Mino Wu Project Reviewer <i>Mino Wu</i>
<input type="checkbox"/>	Testing procedure: CTF Stage 1:	
Testing location/ address..... :		
Tested by (name, function, signature)..... :		
Approved by (name, function, signature).... :		
<input type="checkbox"/>	Testing procedure: CTF Stage 2:	
Testing location/ address..... :		
Tested by (name + signature) :		
Witnessed by (name, function, signature) . :		
Approved by (name, function, signature).... :		
<input type="checkbox"/>	Testing procedure: CTF Stage 3:	
<input type="checkbox"/>	Testing procedure: CTF Stage 4:	
Testing location/ address..... :		
Tested by (name, function, signature)..... :		
Witnessed by (name, function, signature) . :		
Approved by (name, function, signature).... :		
Supervised by (name, function, signature) :		

List of Attachments (including a total number of pages in each attachment): Attachment No.1: 3 pages of (Republic of Korea) NATIONAL DIFFERENCES according to IEC62133-2:2017 Attachment No.2: 11 pages of Photo Documentation	
Summary of testing:	
Tests performed (name of test and test clause): Tests are made with the number of samples specified in Table 1 of IEC 62133-2:2017, IEC 62133-2:2017/AMD1:2021. Cl. 7.2.1 Continuous charging at constant voltage (cells) Cl. 7.3.1 External short circuit (cell) Cl. 7.3.3 Free fall Cl. 7.3.4 Thermal abuse (cells) Cl. 7.3.5 Crush (cells) Cl. 7.3.7 Forced discharge (cells) Cl. 7.3.9 Design evaluation – Forced internal short-circuit (cells) All tests above were conducted on models: INR21700 3.5Ah, INR21700 4.0Ah, and INR21700 5.0Ah. The samples comply with the requirements of IEC 62133-2:2017, IEC 62133-2:2017/AMD1:2021.	Testing location: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch Address: Building A2, Jin'ao Industrial Park, No.150, Jingfang Road, Fuhai, Bao'an District, Shenzhen, Guangdong 518103, China
Summary of compliance with National Differences (List of countries addressed): Republic of Korea <input checked="" type="checkbox"/> The product fulfils the requirements of <u>EN 62133-2:2017; EN 62133-2:2017/A1:2021</u>	
Use of uncertainty of measurement for decisions on conformity (decision rule) : <input checked="" type="checkbox"/> No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method"). <input type="checkbox"/> Other:... (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)	
Information on uncertainty of measurement: The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE. IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer. Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.	

Copy of marking plate:

The marking which is printed on the cell.

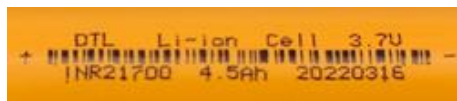
INR21700 3.5Ah



INR21700 4.0Ah



INR21700 4.5Ah



INR21700 5.0Ah

**Remark:**

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.

Test item particulars.....:	
Classification of installation and use.....:	Used in portable applications
Supply Connection	Supplied by positive cap and negative can
Recommend charging method declared by the manufacturer	Charge at constant current 0.2ItA until voltage reaches 4.20V, then charge at constant voltage 4.20V till charge current is 0.01ItA mA.(See page 6)
Discharge current (0,2 It A)	See page 6
Specified final voltage.....:	2.75V
Upper limit charging voltage per cell.....:	4.25V
Maximum charging current	See page 6
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	2022-03-22
Date (s) of performance of tests	2022-03-22 to 2022-04-18
General remarks:	
"(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.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 62133-2:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided :	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) : Same as the applicant	

General product information and other remarks:

1. The Li-ion Cell, Models 1) INR21700 3.5Ah, 2) INR21700 4.0Ah, 3) INR21700 4.5Ah, 4) INR21700 5.0Ah are used for portable appliance.
2. The 4 models have the same dimensions, chemistry, voltage, from the same manufacturer, but different capacities. All tests were conducted on representative model INR21700 3.5Ah, INR21700 4.0Ah and INR21700 5.0Ah.
3. Additionally, detailed information of the cells are as following:

Model	Rated capacity (mAh)	Nominal voltage (V)	Recommend charge current 0.2ItA (mA)	0.2ItA discharge current (mA)	Charge voltage (V)	Final voltage (V)	Lower limited discharge voltage (V)
INR21700 3.5Ah	3500	3.7	700	700	4.20	2.75	2.75
INR21700 4.0Ah	4000	3.7	800	800	4.20	2.75	2.75
INR21700 4.5Ah	4500	3.7	900	900	4.20	2.75	2.75
INR21700 5.0Ah	5000	3.7	1000	1000	4.20	2.75	2.75

Model	Max. charging current 0.5ItA (mA)	Maximum discharging current 3ItA (mA)	Upper limit charge voltage (V)	0.01ItA in First charging procedure (mA)	0.05ItA in Second charging procedure (mA)	Charging temperature upper/lower limit(°C)	Weight (g)
INR21700 3.5Ah	1750	10500	4.25	35	175	45/0	67.3
INR21700 4.0Ah	2000	12000	4.25	40	200	45/0	67.7
INR21700 4.5Ah	2250	13500	4.25	45	225	45/0	68.8
INR21700 5.0Ah	2500	15000	4.25	50	250	45/0	68.9

Test procedures:

First charging procedure (20°C ± 5°C)	Charge at constant current 0.2ItA until the voltage reaches 4.2V, then charge at 4.2V till charge current is 0.01ItA.
Second charging procedure	Store at -5°C and 45°C for 1 to 4 hours, respectively, then charge at constant current 0.5ItA until voltage reaches 4.25V, then charge at constant voltage 4.25V till charge current reduced to 0.05 It A.

For this series, same parameter as below:

Cell designation according to IEC 61960-3: 2017	INR22/72
Dimensions	(21.7+0.3/-0.15)mm(Diameter) × (71.2±0.3)mm(Height)
Charging temperature range	0°C to +45°C
Discharging temperature range	-10°C to 60°C
Storage temperature	-10°C to +45°C (Less than 1 month) 0°C to +30°C (Less than 3 months) 20°C±5°C (Less than 1 year)

Remark:

The final evaluation of the cells must be conducted in the end product for which the cells will be used.

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Clause	Requirement + Test	Result - Remark	Verdict
4	PARAMETER MEASUREMENT TOLERANCES		P
	Parameter measurement tolerances		P
5	GENERAL SAFETY CONSIDERATIONS		P
5.1	General		P
	Cells and batteries so designed and constructed that they are safe under conditions of both intended use and reasonably foreseeable misuse		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 clearances and creepage 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		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 specified chargers are designed to maintain charging within the temperature, voltage and current limits specified		N/A
5.5	Terminal contacts		N/A
	The size and shape of the terminal contacts ensure that they can carry the maximum anticipated current		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	External terminal contact surfaces are formed from conductive materials with good mechanical strength and corrosion resistance		N/A
	Terminal contacts are arranged to minimize the risk of short circuits		N/A
5.6	Assembly of cells into batteries		N/A
5.6.1	General		N/A
	Each battery has an independent control and protection for current, voltage, temperature and any other parameter required for safety and to maintain the cells within their operating region		N/A
	This protection may be provided external to the battery such as within the charger or the end devices		N/A
	If protection is external to the battery, the manufacturer of the battery provide this safety relevant information to the external device manufacturer for implementation		N/A
	If there is more than one battery housed in a single battery case, each battery has protective circuitry that can maintain the cells within their operating regions		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
	The manufacturer of the battery provide a safety analysis of the battery safety circuitry with a test report including a fault analysis of the protection circuit under both charging and discharging conditions confirming the compliance		N/A
5.6.2	Design recommendation		N/A
	For the battery consisting of a single cell or a single cellblock, it is recommended that the charging voltage of the cell does not exceed the upper limit of the charging voltage specified in Table 2		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	For the battery consisting of series-connected plural single cells or series-connected plural cellblocks, it is recommended that the voltages of any one of the single cells or single cellblocks does not exceed the upper limit of the charging voltage, specified in Table 2, by monitoring the voltage of every single cell or the single cellblocks		N/A
	For the battery consisting of series-connected plural single cells or series-connected plural cellblocks, it is recommended that charging is stopped when the upper limit of the charging voltage is exceeded for any one of the single cells or single cellblocks by measuring the voltage of every single cell or the single cellblocks		N/A
	For batteries consisting of series-connected cells or cell blocks, nominal charge voltage are not counted as an overcharge protection		N/A
	For batteries consisting of series-connected cells or cell blocks, cells have closely matched capacities, be of the same design, be of the same chemistry and be from the same manufacturer		N/A
	It is recommended that the cells and cell blocks are not discharged beyond the cell manufacturer's specified final voltage		N/A
	For batteries consisting of series-connected cells or cell blocks, cell balancing circuitry are incorporated into the battery management system		N/A
5.6.3	Mechanical protection for cells and components of batteries	Consider in end product	N/A
	Mechanical protection for cells, cell connections and control circuits within the battery are provided to prevent damage as a result of intended use and reasonably foreseeable misuse		N/A
	The mechanical protection can be provided by the battery case or it can be provided by the end product enclosure for those batteries intended for building into an end product		N/A
	The battery case and compartments housing cells are designed to accommodate cell dimensional tolerances during charging and discharging as recommended by the cell manufacturer		N/A
	For batteries intended for building into a portable end product, testing with the battery installed within the end product is considered when conducting mechanical tests		N/A
5.7	Quality plan		P

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Clause	Requirement + Test	Result - Remark	Verdict
	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		P
5.8	Battery safety components		N/A

6	TYPE TEST AND SAMPLE SIZE		P
	Tests are 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
	The internal resistance of coin cells are measured in accordance with Annex D. Coin cells with internal resistance less than or equal to 3 Ω are tested in accordance with Table 1		N/A
	Unless otherwise specified, tests are carried out in an ambient temperature of 20 °C \pm 5 °C		P
	The safety analysis of 5.6.1 identify those components of the protection circuit that are critical for short-circuit, overcharge and over discharge protection		N/A
	When conducting the short-circuit test, consideration is given to the simulation of any single fault condition that is likely to occur in the protecting circuit that would affect the short-circuit test		N/A

7	SPECIFIC REQUIREMENTS AND TESTS		P
7.1	Charging procedure for test purposes		P
7.1.1	First procedure		P
	This charging procedure applies to subclauses other than those specified in 7.1.2		P
	Unless otherwise stated in this document, the charging procedure for test purposes is carried out in an ambient temperature of 20 °C \pm 5 °C, using the method declared by the manufacturer		P
	Prior to charging, the battery has been discharged at 20 °C \pm 5 °C at a constant current of 0,2 It A down to a specified final voltage		P
7.1.2	Second procedure		P
	This charging procedure applies only to 7.3.1, 7.3.4, 7.3.5, and 7.3.9		P

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Clause	Requirement + Test	Result - Remark	Verdict
	After stabilization for 1 h to 4 h, at an ambient temperature of the highest test temperature and the lowest test temperature, respectively, as specified in Table 2, cells are charged by using the upper limit charging voltage and maximum charging current, until the charging current is reduced to 0,05 It A, using a constant current to constant voltage charging method		P
7.2	Intended use		P
7.2.1	Continuous charging at constant voltage (cells)		P
	Fully charged cells are subjected for 7 days to a charge using the charging method for current and standard voltage specified by the cell manufacturer		P
	Results: no fire, no explosion, no leakage.....: (See appended table 7.2.1)		P
7.2.2	Case stress at high ambient temperature (battery)		N/A
	Oven temperature (°C)		—
	Results: no physical distortion of the battery case resulting in exposure of internal protective components and cells		N/A
7.3	Reasonably foreseeable misuse		P
7.3.1	External short-circuit (cell)		P
	The cells were tested until one of the following occurred:		P
	- 24 hours elapsed; or		N/A
	- The case temperature declined by 20 % of the maximum temperature rise		P
	Results: no fire, no explosion.....: (See appended table 7.3.1)		P
7.3.2	External short-circuit (battery)		N/A
	The batteries were tested until one of the following occurred:		N/A
	- 24 hours elapsed; or		N/A
	- The case temperature declined by 20 % of the maximum temperature rise		N/A
	In case of rapid decline in short circuit current, the battery pack remained on test for an additional one hour after the current reached a low end steady state condition		N/A
	A single fault in the discharge protection circuit is conducted on one to four (depending upon the protection circuit) of the five samples before conducting the short-circuit test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	A single fault applies to protective component parts such as MOSFET (metal oxide semiconductor field-effect transistor), fuse, thermostat or positive temperature coefficient (PTC) thermistor		N/A
	Results: no fire, no explosion..... :		N/A
7.3.3	Free fall		P
	Results: no fire, no explosion		P
7.3.4	Thermal abuse (cells)		P
	Oven temperature (°C)..... :	130°C±2°C	—
	Results: no fire, no explosion		P
7.3.5	Crush (cells)		P
	The crushing force was released upon:		P
	- 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
	Results: no fire, no explosion..... :	(See appended table 7.3.5)	P
7.3.7	Over-charging of battery		N/A
	The supply voltage which is:		N/A
	- 1,4 times the upper limit charging voltage presented in Table A.1 (but not to exceed 6,0 V) for single cell/cell block batteries or		N/A
	- 1,2 times the upper limit charging voltage resented in Table A.1 per cell for series connected multi-cell batteries, and		N/A
	- Sufficient to maintain a current of 2,0 It A throughout the duration of the test or until the supply voltage is reached		N/A
	Test was continued until the temperature of the outer casing:		N/A
	- Reached steady state conditions (less than 10 °C change in 30-minute period); or		N/A
	- Returned to ambient		N/A
	Results: no fire, no explosion..... :		N/A
7.3.7	Forced discharge (cells)		P
	Discharge a single cell to the lower limit discharge voltage specified by the cell manufacturer		P
	The discharged cell is then subjected to a forced discharge at 1 It A to the negative value of the upper limit charging voltage		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- The discharge voltage reaches the negative value of upper limit charging voltage within the testing duration. The voltage is maintained at the negative value of the upper limit charging voltage by reducing the current for the remainder of the testing duration		N/A
	- The discharge voltage does not reach the negative value of upper limit charging voltage within the testing duration. The test is terminated at the end of the testing duration		P
	Results: no fire, no explosion..... :	(See appended table 7.3.7)	P
7.3.8	Mechanical tests (batteries)		N/A
7.3.8.1	Vibration		N/A
	Results: no fire, no explosion, no rupture, no leakage or venting. :		N/A
7.3.8.2	Mechanical shock		N/A
	Results: no leakage, no venting, no rupture, no explosion and no fire :		N/A
7.3.9	Design evaluation – Forced internal short-circuit (cells)		P
	The cells complied with national requirement for :	France, Japan, Korea, Switzerland	—
	The pressing was stopped upon:		P
	- A voltage drop of 50 mV has been detected; or		N/A
	- The pressing force of 800 N (cylindrical cells) or 400 N (prismatic cells) has been reached	800N	P
	Results: no fire..... :	(See appended table 7.3.9)	P

8	INFORMATION FOR SAFETY		P
8.1	General		P
	Manufacturers of secondary cells provides information about current, voltage and temperature limits of their products		P
	Manufacturers of batteries provides information regarding how to minimize and mitigate hazards to equipment manufacturers or end-users		N/A
	Systems analyses are performed by device manufacturers to ensure that a particular battery design prevents hazards from occurring during use of a product		N/A
	As appropriate, any information relating to hazard avoidance resulting from a system analysis is provided to the end user		N/A
8.2	Small cell and battery safety information		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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 2 h 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
	Cell marked as specified in IEC 61960-3:2017		N/A
	Coin cells whose external surface area is too small to accommodate the markings on the cells show the designation and polarity		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
9.2	Battery marking		N/A
	Batteries are marked as specified in IEC 61960, except for coin batteries		N/A
	Coin batteries whose external surface area is too small to accommodate the markings on the batteries show the designation and polarity		N/A
	Batteries are marked with an appropriate caution statement		N/A
	- Terminals have clear polarity marking on the external surface of the battery, or		N/A
	- 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		N/A
	Coin cells and batteries identified as small batteries include 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 is given on the immediate package		N/A
9.4	Other information		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The following information are marked on or supplied with the battery:		N/A
	- Storage and disposal instructions		N/A
	- Recommended charging instructions		N/A

10	PACKAGING AND TRANSPORT		N/A
	Packaging for coin cells are not be small enough to fit within the limits of the ingestion gauge of Figure 3		N/A

ANNEX A	CHARGING AND DISCHARGING RANGE OF SECONDARY LITHIUM ION CELLS FOR SAFE USE		P
A.1	General		P
A.2	Safety of lithium ion secondary battery		P
A.3	Consideration on charging voltage		P
A.3.1	General		P
A.3.2	Upper limit charging voltage		P
A.3.2.1	General		P
A.3.2.2	Explanation of safety viewpoint		P
A.3.2.3	Safety requirements, when different upper limit charging voltage is applied		N/A
A.4	Consideration of temperature and charging current		P
A.4.1	General		P
A.4.2	Recommended temperature range		P
A.4.2.1	General		P
A.4.2.2	Safety consideration when a different recommended temperature range is applied		P
A.4.3	High temperature range		N/A
A.4.3.1	General		N/A
A.4.3.2	Explanation of safety viewpoint		N/A
A.4.3.3	Safety considerations when specifying charging conditions in the high temperature range		N/A
A.4.3.4	Safety considerations when specifying a new upper limit in the high temperature range		N/A
A.4.4	Low temperature range		N/A
A.4.4.1	General		N/A
A.4.4.2	Explanation of safety viewpoint		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
A.4.4.3	Safety considerations, when specifying charging conditions in the low temperature range		N/A
A.4.4.4	Safety considerations when specifying a new lower limit in the low temperature range		N/A
A.4.5	Scope of the application of charging current		P
A.4.6	Consideration of discharge		P
A.4.6.1	General		P
A.4.6.2	Final discharge voltage and explanation of safety viewpoint		P
A.4.6.3	Discharge current and temperature range		P
A.4.6.4	Scope of application of the discharging current		P
A.5	Sample preparation		P
A.5.1	General		P
A.5.2	Insertion procedure for nickel particle to generate internal short		P
A.5.3	Disassembly of charged cell		P
A.5.4	Shape of nickel particle		P
A.5.5	Insertion of nickel particle in cylindrical cell		P
A.5.5.1	Insertion of nickel particle in winding core		P
A.5.5.2	Marking the position of the nickel particle on both ends of the winding core of the separator		P
A.5.6	Insertion of nickel particle in prismatic cell		N/A
A.6	Experimental procedure of the forced internal short-circuit test		P
A.6.1	Material and tools for preparation of nickel particle		P
A.6.2	Example of a nickel particle preparation procedure		P
A.6.3	Positioning (or placement) of a nickel particle		P
A.6.4	Damaged separator precaution		P
A.6.5	Caution for rewinding separator and electrode		P
A.6.6	Insulation film for preventing short-circuit		P
A.6.7	Caution when disassembling a cell		P
A.6.8	Protective equipment for safety		P
A.6.9	Caution in the case of fire during disassembling		P
A.6.10	Caution for the disassembling process and pressing the electrode core		P
A.6.11	Recommended specifications for the pressing device		P

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict
ANNEX B	RECOMMENDATIONS TO EQUIPMENT MANUFACTURERS AND BATTERY ASSEMBLERS		P
ANNEX C	RECOMMENDATIONS TO THE END-USERS		N/A
ANNEX D	MEASUREMENT OF THE INTERNAL AC RESISTANCE FOR COIN CELLS		N/A
D.1	General		N/A
D.2	Method		N/A
	A sample size of three coin cells is required for this measurement		N/A
	Coin cells with an internal resistance greater than 3 Ω require no further testing		N/A
	Coin cells with an internal resistance less than or equal to 3 Ω are subjected to the testing according to Clause 6 and Table 1		N/A
ANNEX E	PACKAGING AND TRANSPORT		N/A
ANNEX F	COMPONENT STANDARDS REFERENCES		N/A

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict

7.2.1	TABLE: Continuous charging at constant voltage (cells)				P
Sample No.	Recommended charging voltage Vc (Vdc)	Recommended charging current I _{rec} (A)	OCV before test (Vdc)	Results	
INR21700 3.5Ah	4.20	0.7	4.186	A, B	
INR21700 3.5Ah	4.20	0.7	4.184	A, B	
INR21700 3.5Ah	4.20	0.7	4.186	A, B	
INR21700 3.5Ah	4.20	0.7	4.185	A, B	
INR21700 3.5Ah	4.20	0.7	4.183	A, B	
INR21700 4.0Ah	4.20	0.8	4.186	A, B	
INR21700 4.0Ah	4.20	0.8	4.184	A, B	
INR21700 4.0Ah	4.20	0.8	4.186	A, B	
INR21700 4.0Ah	4.20	0.8	4.185	A, B	
INR21700 4.0Ah	4.20	0.8	4.183	A, B	
INR21700 5.0Ah	4.20	1.0	4.182	A, B	
INR21700 5.0Ah	4.20	1.0	4.181	A, B	
INR21700 5.0Ah	4.20	1.0	4.181	A, B	
INR21700 5.0Ah	4.20	1.0	4.180	A, B	
INR21700 5.0Ah	4.20	1.0	4.182	A, B	
Supplementary information: A - No fire or explosion B - No leakage C - Others (please explain)					

7.3.1	TABLE: External short circuit (cell)				P
Sample No.	Ambient (°C)	OCV at start of test (Vdc)	Resistance of circuit (mΩ)	Maximum case temperature rise ΔT (K)	Results
Samples charged at charging temperature upper limit					
INR21700 3.5Ah	55.7	4.216	87	66.4	A
INR21700 3.5Ah	55.7	4.217	85	69.0	A
INR21700 3.5Ah	55.7	4.212	86	58.8	A
INR21700 3.5Ah	55.7	4.216	84	64.6	A
INR21700 3.5Ah	55.7	4.220	82	65.4	A
INR21700 4.0Ah	55.2	4.220	87	61.4	A
INR21700 4.0Ah	55.2	4.218	85	70.1	A

IEC 62133-2					
Clause	Requirement + Test			Result - Remark	Verdict
INR21700 4.0Ah	55.2	4.219	86	57.1	A
INR21700 4.0Ah	55.2	4.220	84	68.8	A
INR21700 4.0Ah	55.2	4.216	82	64.1	A
INR21700 5.0Ah	55.5	4.208	87	54.9	A
INR21700 5.0Ah	55.5	4.206	86	57.3	A
INR21700 5.0Ah	55.5	4.210	82	62.3	A
INR21700 5.0Ah	55.5	4.209	84	65.6	A
INR21700 5.0Ah	55.5	4.211	85	62.6	A
Samples charged at charging temperature lower limit					
INR21700 3.5Ah	55.7	4.164	89	59.9	A
INR21700 3.5Ah	55.7	4.167	86	66.7	A
INR21700 3.5Ah	55.7	4.165	83	56.9	A
INR21700 3.5Ah	55.7	4.165	83	67.2	A
INR21700 3.5Ah	55.7	4.166	87	72.3	A
INR21700 4.0Ah	55.2	4.177	89	70.1	A
INR21700 4.0Ah	55.2	4.175	86	67.0	A
INR21700 4.0Ah	55.2	4.179	83	68.1	A
INR21700 4.0Ah	55.2	4.177	83	63.5	A
INR21700 4.0Ah	55.2	4.178	87	52.1	A
INR21700 5.0Ah	55.5	4.172	86	48.1	A
INR21700 5.0Ah	55.5	4.170	83	61.1	A
INR21700 5.0Ah	55.5	4.172	89	58.2	A
INR21700 5.0Ah	55.5	4.171	87	61.6	A
INR21700 5.0Ah	55.5	4.170	83	67.2	A
Supplementary information: A - No fire or explosion B - Others (please explain)					

7.3.2	TABLE: External short circuit (battery)					N/A
Sample No.	Ambient T (°C)	OCV before test (Vdc)	Resistance of circuit (mΩ)	Maximum case temperature rise ΔT (K)	Component single fault condition	Results

IEC 62133-2						
Clause	Requirement + Test			Result - Remark		Verdict
Supplementary information: A - No fire or explosion B - Others (please explain)						

7.3.5	TABLE: Crush (cells)				P
Sample No.	OCV before test (Vdc)	OCV at removal of crushing force (Vdc)	Maximum force applied to the cell during crush (kN)	Results	
Samples charged at charging temperature upper limit					
INR21700 3.5Ah	4.214	4.210	12.98	A	
INR21700 3.5Ah	4.217	4.215	12.96	A	
INR21700 3.5Ah	4.214	4.211	12.99	A	
INR21700 3.5Ah	4.215	4.211	12.96	A	
INR21700 3.5Ah	4.213	4.208	12.95	A	
INR21700 4.0Ah	4.216	4.212	12.99	A	
INR21700 4.0Ah	4.219	4.216	12.97	A	
INR21700 4.0Ah	4.222	4.218	12.95	A	
INR21700 4.0Ah	4.218	4.215	12.96	A	
INR21700 4.0Ah	4.216	4.213	12.97	A	
INR21700 5.0Ah	4.207	4.204	12.97	A	
INR21700 5.0Ah	4.209	4.205	12.95	A	
INR21700 5.0Ah	4.207	4.204	12.98	A	
INR21700 5.0Ah	4.211	4.208	12.99	A	
INR21700 5.0Ah	4.210	4.206	12.95	A	
Samples charged at charging temperature lower limit					
INR21700 3.5Ah	4.166	4.161	12.94	A	
INR21700 3.5Ah	4.165	4.162	12.96	A	
INR21700 3.5Ah	4.163	4.159	12.98	A	
INR21700 3.5Ah	4.166	4.162	12.96	A	
INR21700 3.5Ah	4.168	4.163	12.96	A	
INR21700 4.0Ah	4.176	4.173	12.98	A	
INR21700 4.0Ah	4.179	4.175	12.98	A	
INR21700 4.0Ah	4.175	4.171	12.99	A	

IEC 62133-2				
Clause	Requirement + Test		Result - Remark	Verdict
INR21700 4.0Ah	4.177	4.174	12.96	A
INR21700 4.0Ah	4.179	4.175	12.95	A
INR21700 5.0Ah	4.174	4.171	12.97	A
INR21700 5.0Ah	4.172	4.168	12.99	A
INR21700 5.0Ah	4.175	4.172	12.95	A
INR21700 5.0Ah	4.172	4.169	12.98	A
INR21700 5.0Ah	4.171	4.168	12.99	A
Supplementary information: A - No fire or explosion B - Others (please explain)				

7.3.6	TABLE: Over-charging of battery				N/A
Constant charging current (A) :					—
Supply voltage (Vdc) :					—
Sample No.	OCV before charging (Vdc)	Total charging time (minute)	Maximum outer case temperature (°C)	Results	
Supplementary information:					
A - No fire or explosion					
B - Others (please explain)					

7.3.7	TABLE: Forced discharge (cells)				P
Sample No.	OCV before application of reverse charge (Vdc)	Measured reverse charge I_t (A)	Lower limit discharge voltage (Vdc)	Results	
INR21700 3.5Ah	3.245	3.5	2.75	A	
INR21700 3.5Ah	3.259	3.5	2.75	A	
INR21700 3.5Ah	3.272	3.5	2.75	A	
INR21700 3.5Ah	3.248	3.5	2.75	A	
INR21700 3.5Ah	3.260	3.5	2.75	A	
INR21700 4.0Ah	3.275	4.0	2.75	A	
INR21700 4.0Ah	3.246	4.0	2.75	A	

IEC 62133-2				
Clause	Requirement + Test		Result - Remark	Verdict
INR21700 4.0Ah	3.255	4.0	2.75	A
INR21700 4.0Ah	3.246	4.0	2.75	A
INR21700 4.0Ah	3.267	4.0	2.75	A
INR21700 5.0Ah	3.282	5.0	2.75	A
INR21700 5.0Ah	3.306	5.0	2.75	A
INR21700 5.0Ah	3.303	5.0	2.75	A
INR21700 5.0Ah	3.317	5.0	2.75	A
INR21700 5.0Ah	3.298	5.0	2.75	A
Supplementary information: A - No fire or explosion B - Others (please explain)				

7.3.8.1	TABLE: Vibration					N/A
Sample No.	OCV before test (Vdc)	OCV after test (Vdc)	Mass before test (g)	Mass after test (g)	Results	
Supplementary information: A - No fire or explosion B - No rupture C - No leakage D - No venting E - Others (please explain)						

7.3.8.2	TABLE: Mechanical shock					N/A
Sample No.	OCV before test (Vdc)	OCV after test (Vdc)	Mass before test (g)	Mass after test (g)	Results	
Supplementary information: A - No fire or explosion B - No rupture C - No leakage D - No venting E - Others (please explain)						

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict

7.3.9	TABLE: Forced internal short circuit (cells)					P
Sample No.	Chamber ambient T (°C)	OCV before test (Vdc)	Particle location ¹⁾	Maximum applied pressure (N)	Results	
Samples charged at charging temperature upper limit						
INR21700 3.5Ah	45	4.215	1	800	A	
INR21700 3.5Ah	45	4.218	1	800	A	
INR21700 3.5Ah	45	4.215	1	800	A	
INR21700 3.5Ah	45	4.217	1	800	A	
INR21700 3.5Ah	45	4.214	1	800	A	
INR21700 4.0Ah	45	4.215	1	800	A	
INR21700 4.0Ah	45	4.217	1	800	A	
INR21700 4.0Ah	45	4.221	1	800	A	
INR21700 4.0Ah	45	4.219	1	800	A	
INR21700 4.0Ah	45	4.220	1	800	A	
INR21700 5.0Ah	45	4.206	1	800	A	
INR21700 5.0Ah	45	4.208	1	800	A	
INR21700 5.0Ah	45	4.211	1	800	A	
INR21700 5.0Ah	45	4.210	1	800	A	
INR21700 5.0Ah	45	4.207	1	800	A	
Samples charged at charging temperature lower limit						
INR21700 3.5Ah	-5	4.166	1	800	A	
INR21700 3.5Ah	-5	4.167	1	800	A	
INR21700 3.5Ah	-5	4.162	1	800	A	
INR21700 3.5Ah	-5	4.165	1	800	A	
INR21700 3.5Ah	-5	4.168	1	800	A	
INR21700 4.0Ah	-5	4.176	1	800	A	
INR21700 4.0Ah	-5	4.174	1	800	A	
INR21700 4.0Ah	-5	4.177	1	800	A	
INR21700 4.0Ah	-5	4.178	1	800	A	
INR21700 4.0Ah	-5	4.176	1	800	A	
INR21700 5.0Ah	-5	4.173	1	800	A	
INR21700 5.0Ah	-5	4.171	1	800	A	
INR21700 5.0Ah	-5	4.173	1	800	A	
INR21700 5.0Ah	-5	4.172	1	800	A	

IEC 62133-2					
Clause	Requirement + Test			Result - Remark	Verdict
INR21700 5.0Ah	-5	4.170	1	800	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. Remark: there is no particle location 2 for this cell. A - No fire B - Others (please explain)					

D.2	TABLE: Internal AC resistance for coin cells				N/A
Sample no.		Ambient T (°C)	Store time (h)	Resistance Rac (Ω)	Results ¹⁾
Supplementary information:					
¹⁾ Coin cells with an internal resistance less than or equal to 3 Ω, see test result on corresponding tables according to Clause 6 and Table 1.					

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict

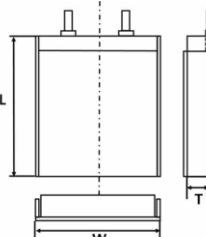
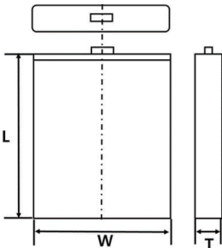
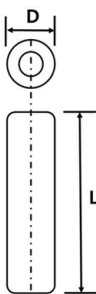
TABLE: Critical components information					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
1.Electrolyte	Xiamen Shouneng Technology Co., Ltd.	SN3334HA	LiPF ₆ , etc.	IEC 62133-2:2017, IEC 62133-2:2017/AMD 1:2021	Tested with cell
2.Separator	Shenzhen Jinglitai Technology Co., Ltd.	0.016*66.5 mm	PE, single layer 0.016mm	IEC 62133-2:2017, IEC 62133-2:2017/AMD 1:2021	Tested with cell
3.Positive electrode	Jiangxi Dongteng Lithium Co., Ltd.	NCM88	LiNi _{0.5} Co _{0.3} Mn _{0.2} O ₂ , etc., Aluminum Foil	IEC 62133-2:2017, IEC 62133-2:2017/AMD 1:2021	Tested with cell
4.Negative electrode	Jiangxi Dongteng Lithium Co., Ltd.	DT-3	Graphite., etc., Copper Foil	IEC 62133-2:2017, IEC 62133-2:2017/AMD 1:2021	Tested with cell
5.Positive electrode tab	Yixing Huineng Electronics Co., Ltd.	5.0*0.08m m	Aluminum belt	IEC 62133-2:2017, IEC 62133-2:2017/AMD 1:2021	Tested with cell
6.Negative electrode tab	Yixing Guangxiang Electronics Co., Ltd.	4.0*0.08m m	Nickel belt	IEC 62133-2:2017, IEC 62133-2:2017/AMD 1:2021	Tested with cell
7.Cap	Changzhou Wujin Zhongrui Electronics Technology Co., Ltd.	21#	Φ(21.05mm±0.05mm) × (3.65mm±0.05mm) (Height), Vent pressure: 1.8Mpa to 2.3MPa	IEC 62133-2:2017, IEC 62133-2:2017/AMD 1:2021	Tested with cell
8. CID	Changzhou Wujin Zhongrui Electronics Technology Co., Ltd.	21#	Aluminum, interruption pressure: 1.0MPa to 1.3MPa	IEC 62133-2:2017, IEC 62133-2:2017/AMD 1:2021	Tested with cell
9. Can	Ningbo Guanghua Battery Co., Ltd.	21700	Nickel plated steel can, 0.22mm thick	IEC 62133-2:2017, IEC 62133-2:2017/AMD 1:2021	Tested with cell

IEC 62133-2					
Clause	Requirement + Test			Result - Remark	Verdict
10.Heat-shrinking outer-wrap	Huizhou Lianyun Plastic Electronics Co., Ltd.	35*0.09m m	PVC, 0.09mm thick	IEC 62133-2:2017, IEC 62133-2:2017/AMD 1:2021	Tested with cell
Supplementary information					
1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					


---End of report---

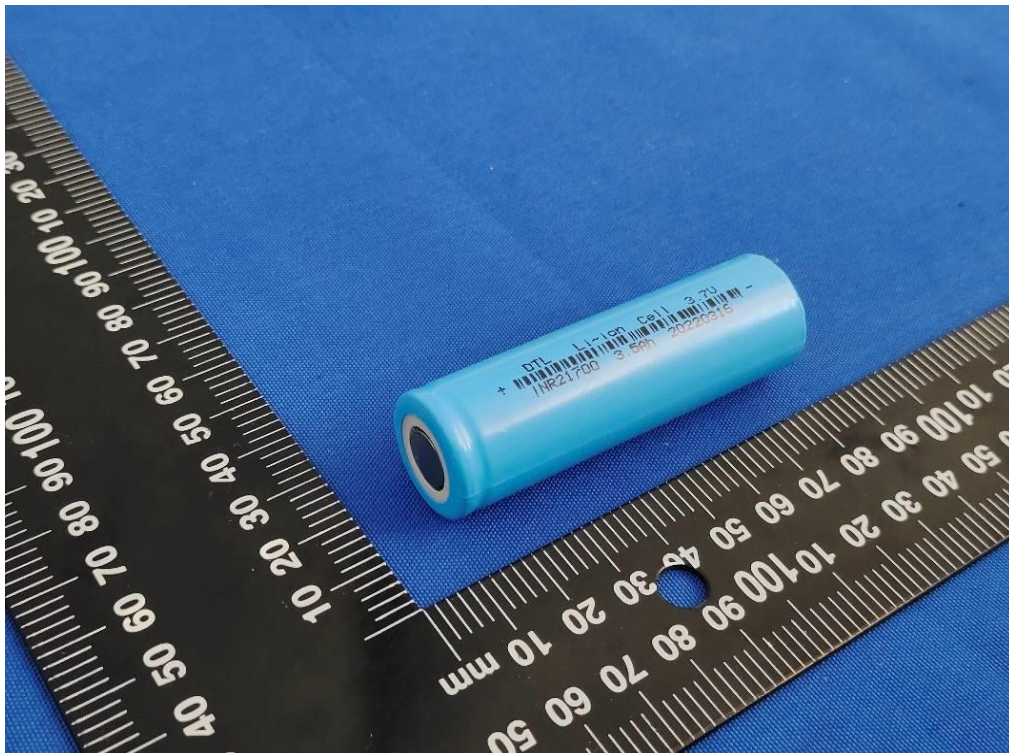
IEC62133_2A ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62133-2 (Republic of Korea) NATIONAL DIFFERENCES (Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for portable sealed secondary lithium cells, and for batteries made from them, for use in portable applications - Part 2: Lithium systems)			
Differences according to : National standard KC62133-2(2020-07)			
TRF template used: : IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No..... : KR_ND_IEC62133_2A			
Attachment Originator : KTR			
Master Attachment..... : Dated 2020-09-25			
Copyright © 2020 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		P
7.3.6	Over-charging of battery		N/A
(Revision)	[Add the bolded text] b) Test The test shall be carried out in an ambient temperature of 20 °C ± 5 °C. Each test battery shall be discharged at a constant current of 0,2 It A, to a final discharge voltage specified by the manufacturer. Sample batteries shall then be charged at a constant current of 2,0 It A, using a supply voltage which is: <ul style="list-style-type: none"> • 1,4 times the upper limit charging voltage presented in Table A.1 (but not to exceed 6,0 V) for single cell/cell block batteries or • 1,2 times the upper limit charging voltage presented in Table A.1 per cell for series connected multi-cell batteries, and • sufficient to maintain a current of 2,0 It A throughout the duration of the test or until the supply voltage is reached. <u>• In case the charging voltage specified by the manufacturer is higher than the overcharge test voltage, the maximum charging voltage specified by manufacturer should be applied with 2.0 ItA,</u> <u>(e.g., quick charging power bank, etc.)</u>		N/A

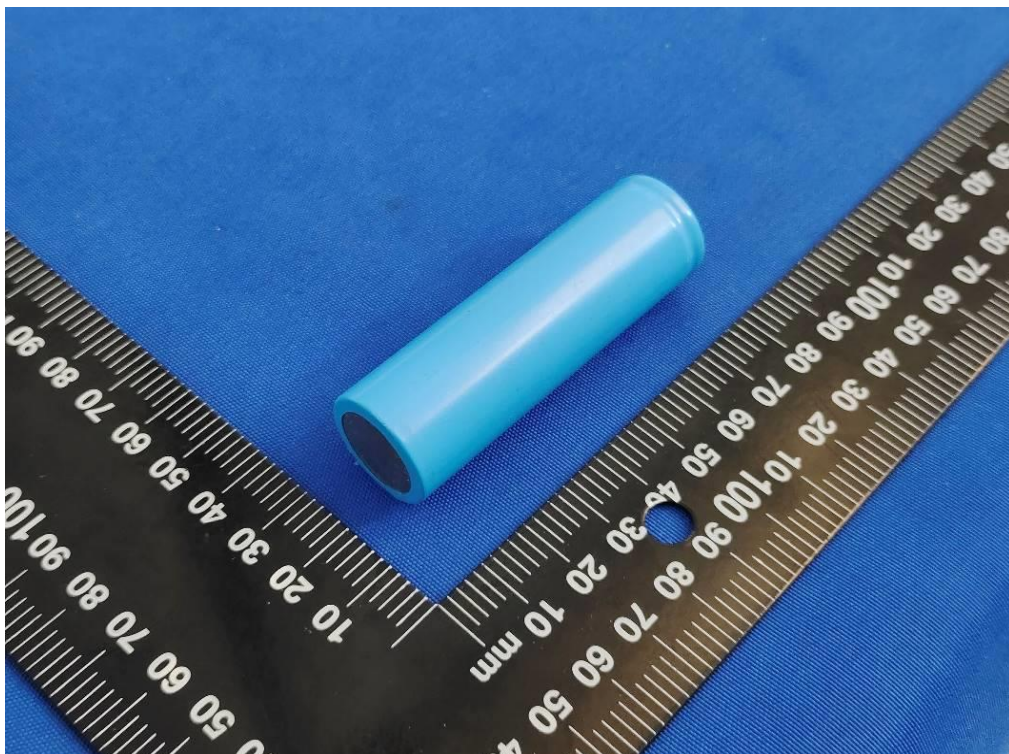
IEC62133_2A ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>[Replace to the following statement]</p> <p>c) Acceptance criteria</p> <p>Overcharging exceeding to the limits specified by the manufacturer should not result in fire or explosion.</p>		N/A
Annex G	Definition for shape and materials of outer case for cell		—
(Addition)	<p>G.1 General Annex G provides definitions for shape and materials of outer case for cell</p> <p>G.2 Shape of outer case for cell G 2.1 Cylindrical cell Cell with a cylindrical shape in which the overall height is equal to or greater than diameter.</p> <p>G 2.2 Prismatic cell Cell having the shape of a parallelepiped whose faces are rectangular</p> <p>G.3 Materials of outer case for cell G.3.1 Soft case Non-metallic outer case or container for cell</p> <p>G.3.2 Hard case Metallic outer case or container for cell.</p>	<p>(Shape of outer cases) <input checked="" type="checkbox"/> Cylindrical <input type="checkbox"/> Prismatic</p> <p>(Materials of outer cases) <input checked="" type="checkbox"/> Hard <input type="checkbox"/> Soft</p>	—
Annex H	Calculation method of the volumetric energy density for cell		—
(Addition)	<p>Annex H provide a calculation method of the volumetric energy density for cell in use of smart phone, tablet, notebook.</p> <p>H.1 General Unless otherwise stated in the Annex E, the dimensions for calculation are based on these for cell before shipment and the volumetric energy density shall be calculated with a maximum values specified by manufacturer. If the specification for cell can't be provided a dimension for calculation, the manufacturer's other documentation shall be provided to demonstrate compliance for its calculation.</p>	Not in use of smart phone, tablet, notebook	—

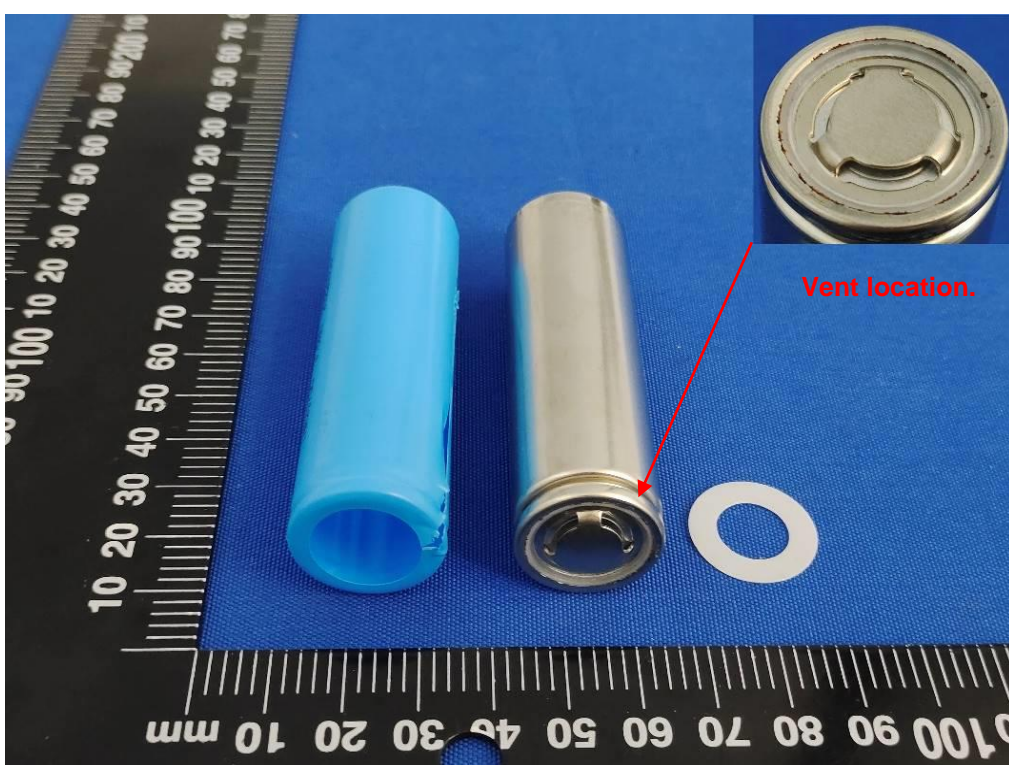
IEC62133_2A ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>H.2 Calculation Method</p>  <p>L : Length (max.) of cell (including terrace) W : Width (max.) of cell T : Thickness (max.) when shipping charge (For reference, Please Exclude the dimension of any tape that is attached to cell)</p> $\text{Volumetric energy density (Wh/L)} = \frac{\text{Nominal voltage (V)} \times \text{Rated capacity (Ah)}}{\text{Length (L)} \times \text{Width (W)} \times \text{Thickness (T)}}$ <p>[H.1 – Prismatic cell using soft case]</p>  <p>L : Length (max.) of cell W : Width (max.) of cell T : Thickness when shipping charge (For reference, Please Exclude the dimension of any tape that is attached to cell)</p> $\text{Volumetric energy density (Wh/L)} = \frac{\text{Nominal voltage (V)} \times \text{Rated capacity (Ah)}}{\text{Length (L)} \times \text{Width (W)} \times \text{Thickness (T)}}$ <p>[H.2 – Prismatic cell using hard case]</p>  <p>D : Diameter (max.) of cell L : Length (max.) of cell (According to shape of cell at shipping, The dimension of tube for cell may be included In overall dimension of cell)</p> $\text{Volumetric energy density (Wh/L)} = \frac{\text{Nominal voltage (V)} \times \text{Rated capacity (Ah)}}{3.14159 \times \frac{\text{Diameter (D)}^2}{4} \times \text{Length(L)}}$ <p>[H.3 – Cylindrical cell using hard case]</p>		

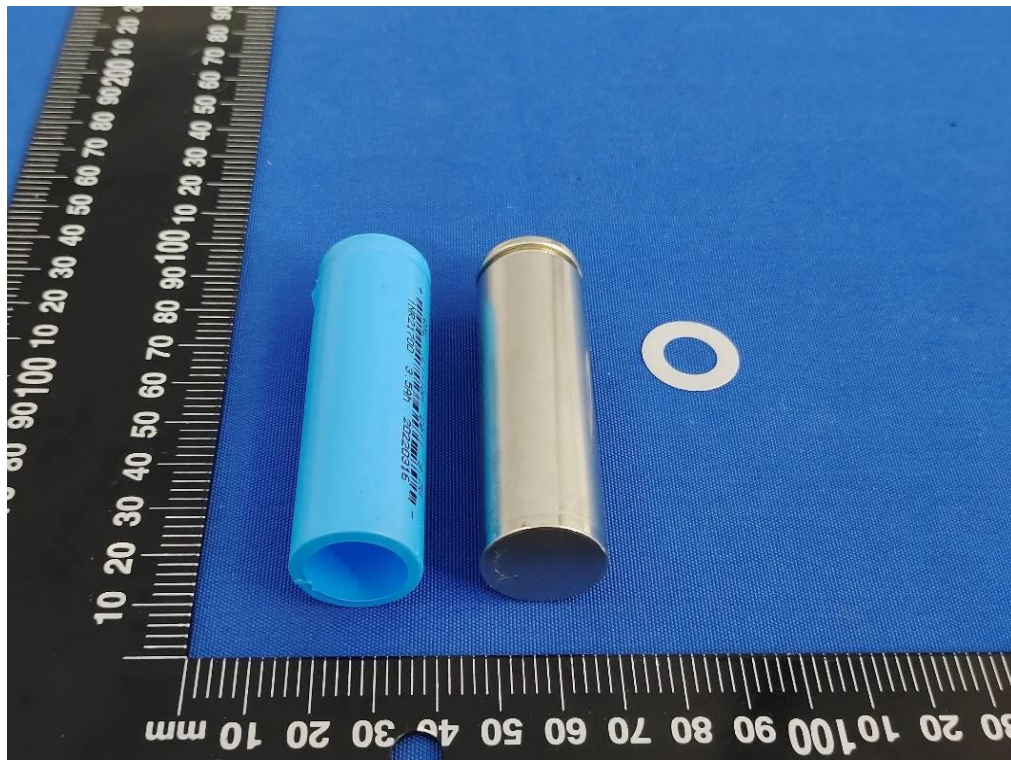
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Details of:	Fig. 1 Overall view 1 of Li-ion Cell, Model INR21700 3.5Ah
	 A photograph showing a cylindrical blue Li-ion cell (Model INR21700 3.5Ah) lying horizontally on a blue fabric surface. A black ruler with white markings is positioned vertically to the left of the cell, showing measurements from 10 to 80 mm. The cell has printed text: "DTL Li-ion Cell 3.7V", "INR21700 3.5Ah", and "20220316".

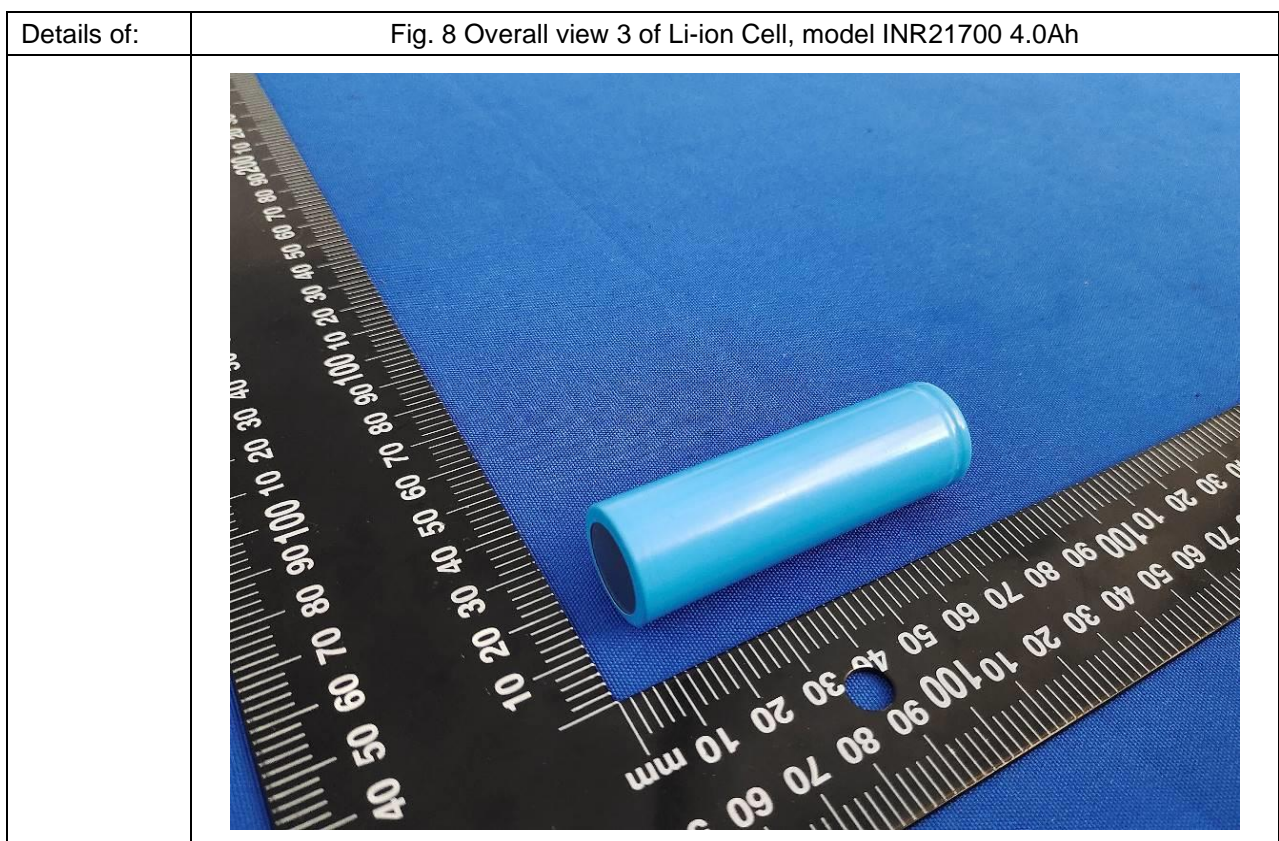
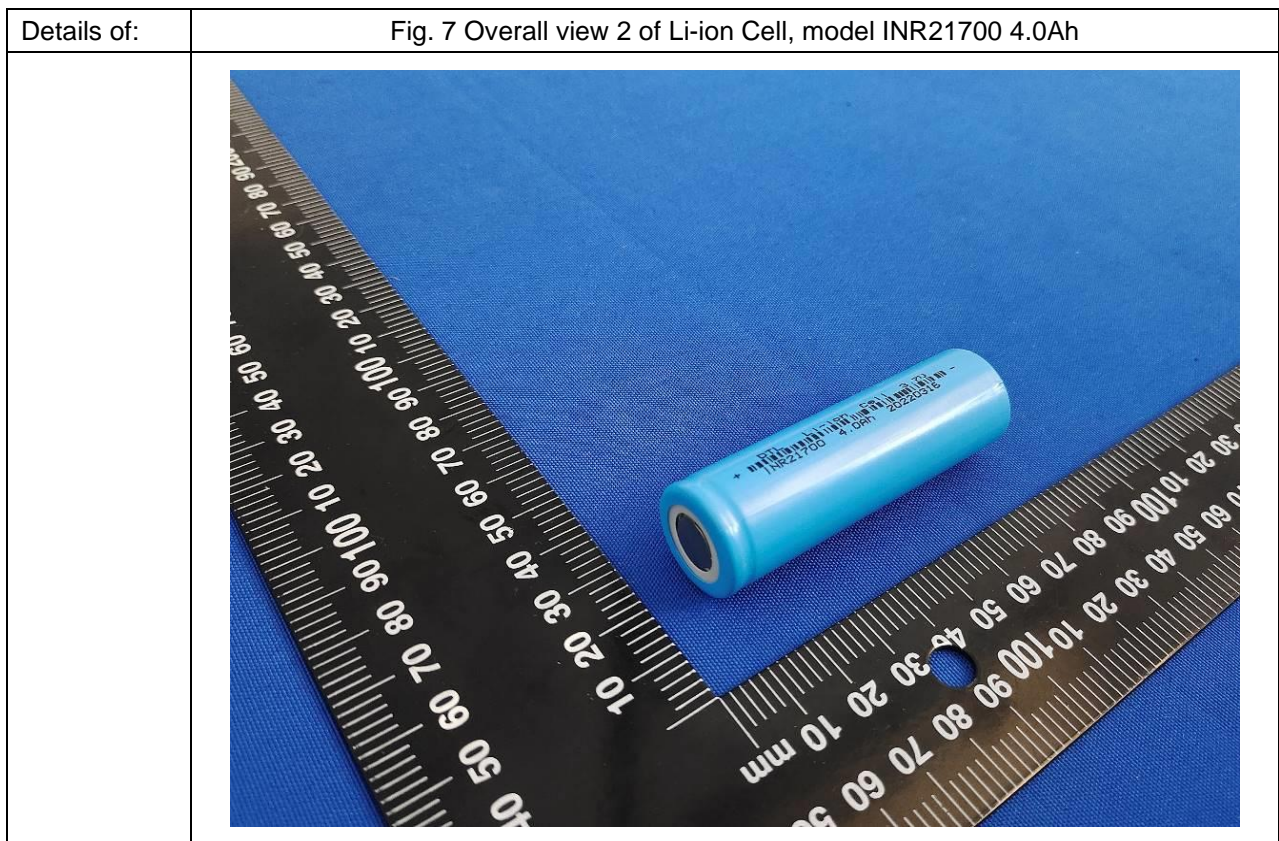
Details of:	Fig. 2 Overall view 2 of Li-ion Cell, model INR21700 3.5Ah
	 A photograph showing the same cylindrical blue Li-ion cell (Model INR21700 3.5Ah) lying diagonally on a blue fabric surface. A black ruler with white markings is positioned diagonally below the cell, showing measurements from 10 to 100 mm. The cell has printed text: "DTL Li-ion Cell 3.7V", "INR21700 3.5Ah", and "20220316".

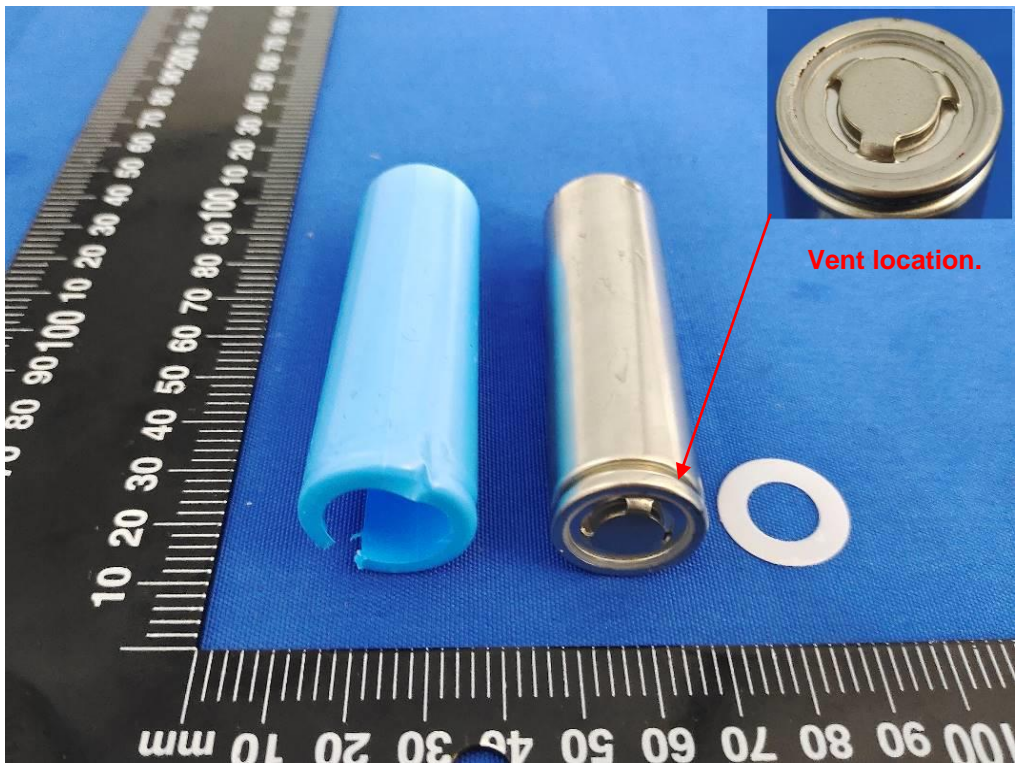
Details of:	Fig. 3 Overall view 3 of Li-ion Cell, model INR21700 3.5Ah
	 A photograph showing a cylindrical, light blue Li-ion cell (model INR21700 3.5Ah) lying on a blue surface. A black ruler with white markings is placed diagonally across the cell, providing a scale reference. The cell is oriented horizontally, and the ruler shows measurements in millimeters.

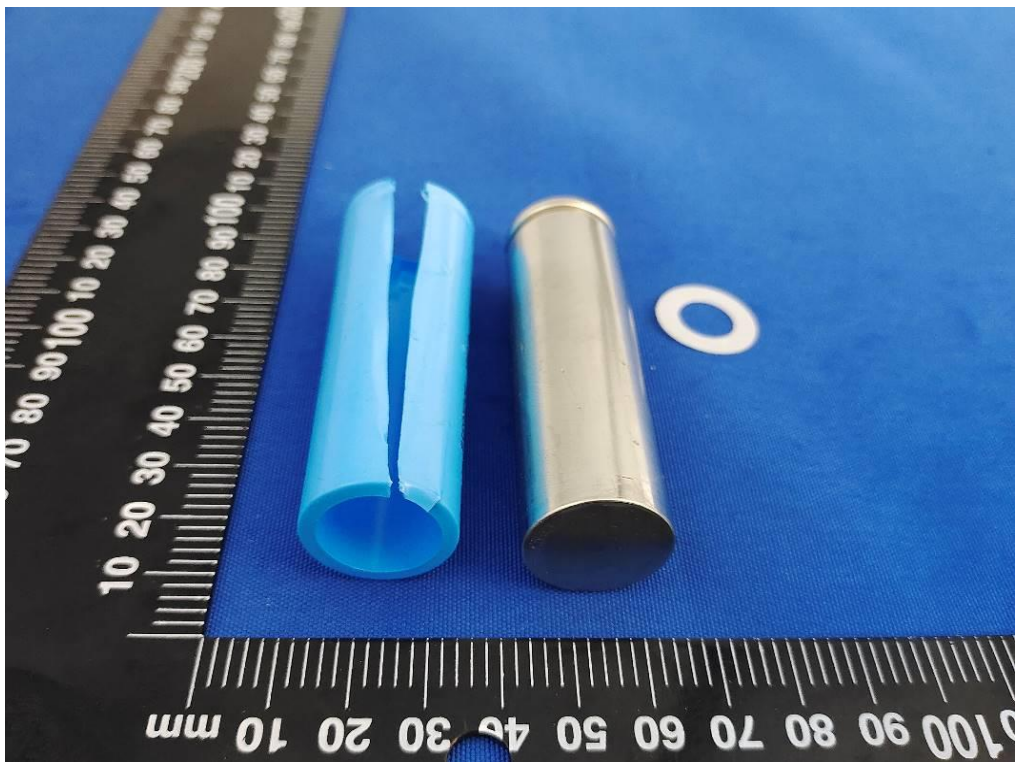
Details of:	Fig. 4 Overall view 1 of Li-ion Cell with heat-shrinking tube disassembled, model INR21700 3.5Ah
	 A photograph showing the disassembled components of a Li-ion cell (model INR21700 3.5Ah) on a blue surface. On the left is a light blue heat-shrinking tube. In the center is the metal canister of the cell. To the right of the canister is a small, circular, white vent cap. A red arrow points from the text "Vent location." to the vent cap. A black ruler with white markings is placed diagonally across the components, providing a scale reference. An inset image in the top right corner shows a close-up of the vent cap.

Details of:	Fig. 5 Overall view 2 of Li-ion Cell with heat-shrinking tube removed, model INR21700 3.5Ah
	


Details of:	Fig. 6 Overall view 1 of Li-ion Cell, Model INR21700 4.0Ah
	

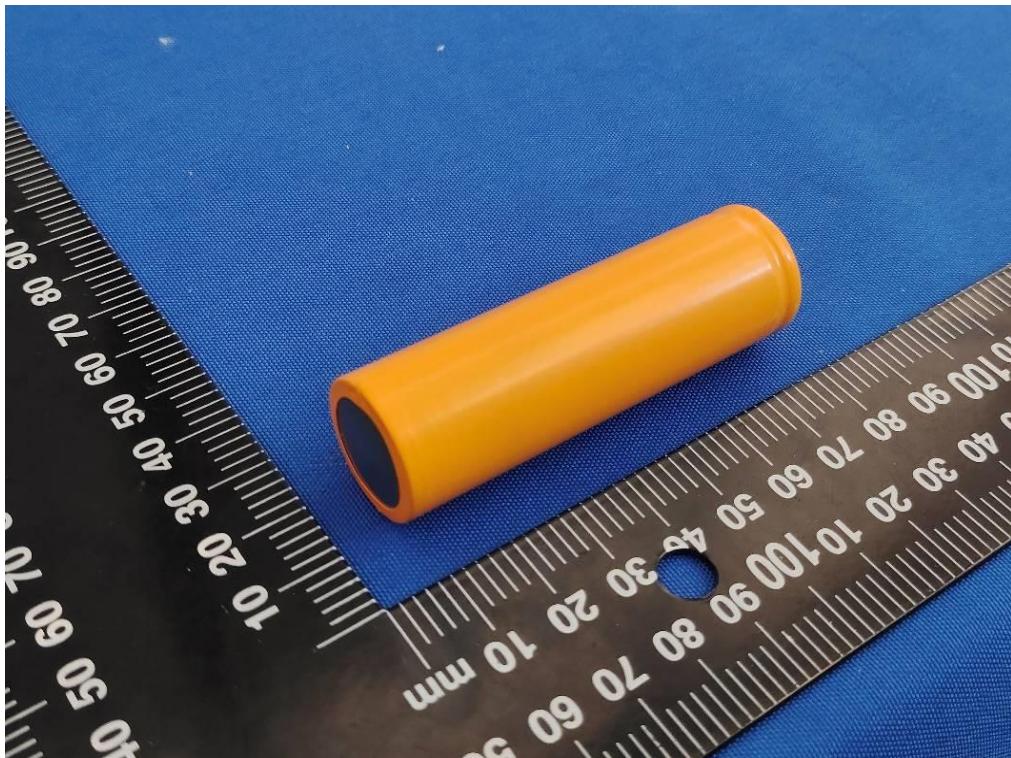


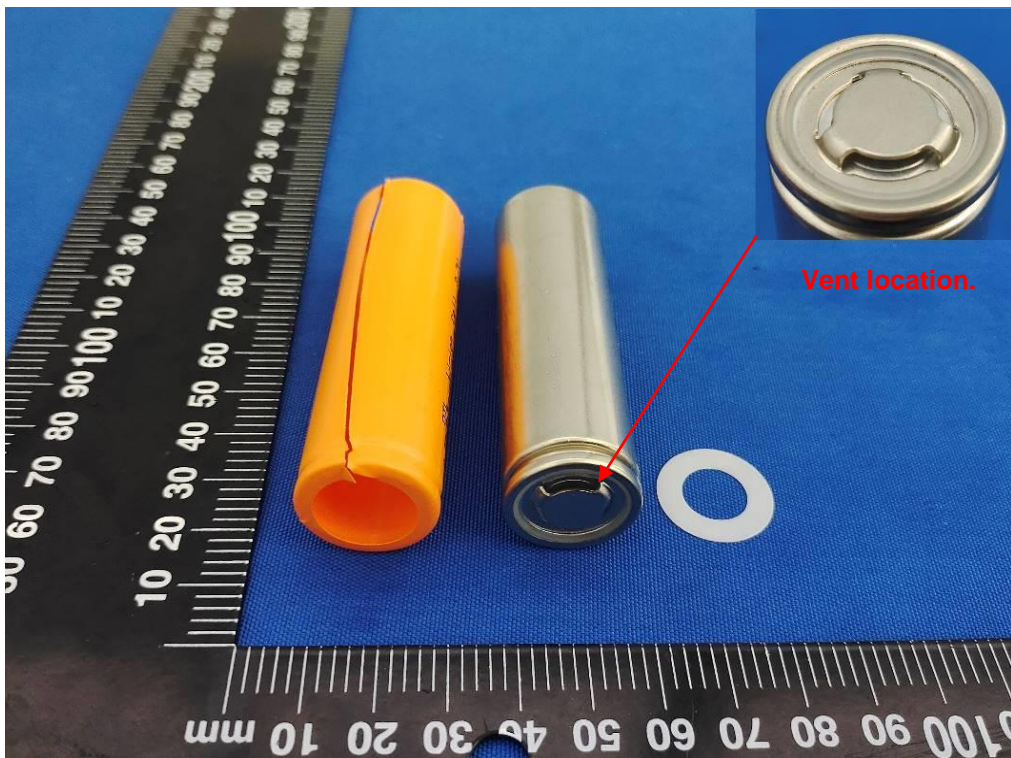
Details of:	Fig. 9 Overall view 1 of Li-ion Cell with heat-shrinking tube disassembled, model INR21700 4.0Ah
	

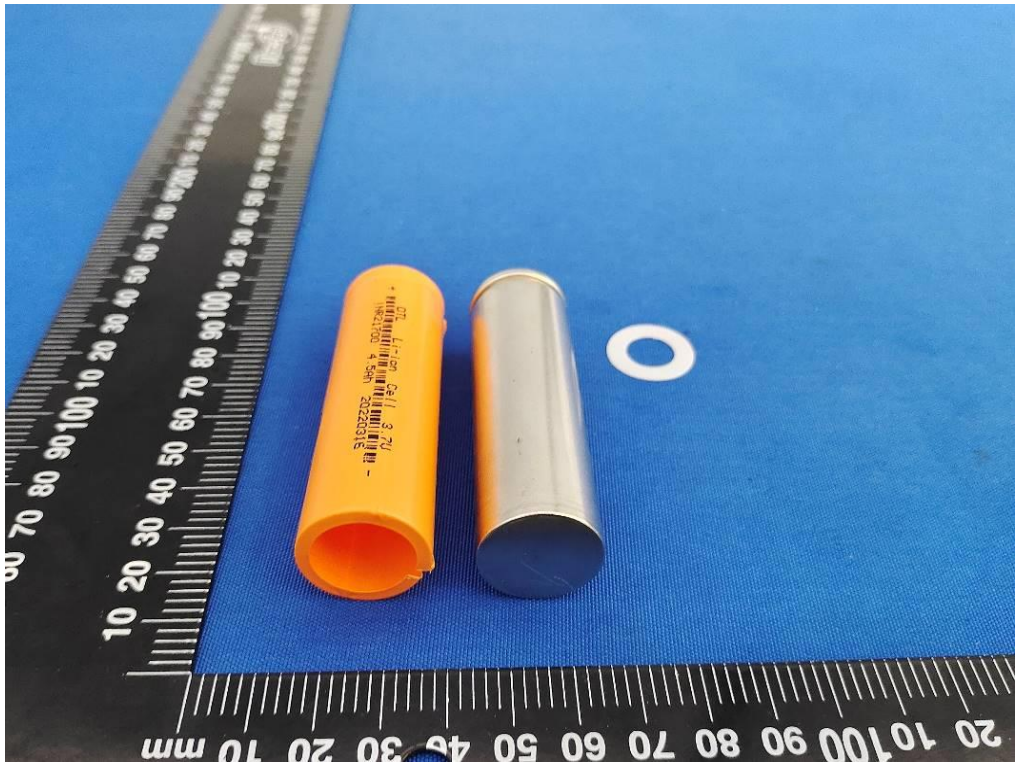
Details of:	Fig. 10 Overall view 2 of Li-ion Cell with heat-shrinking tube removed, model INR21700 4.0Ah
	


Details of:	Fig. 11 Overall view 1 of Li-ion Cell, Model INR21700 4.5Ah
	 A photograph showing a cylindrical orange Li-ion cell lying horizontally on a blue textured surface. To the left of the cell is a vertical ruler with markings from 10 to 80 mm. Below the cell is a horizontal ruler with markings from 10 to 100 mm. The cell has printed text: "DTL Li-ion Cell 3.7V", "INR21700 4.5Ah 20220316", and a barcode.

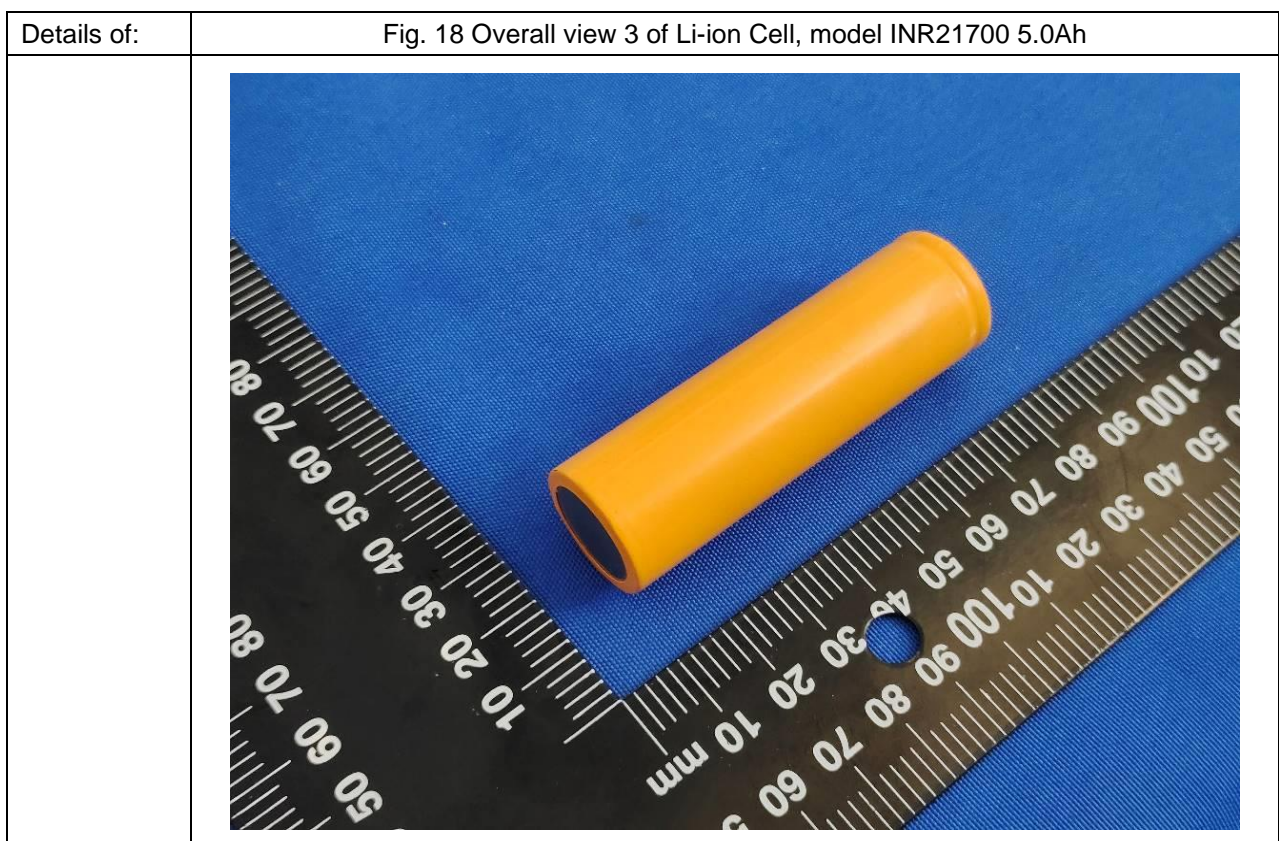
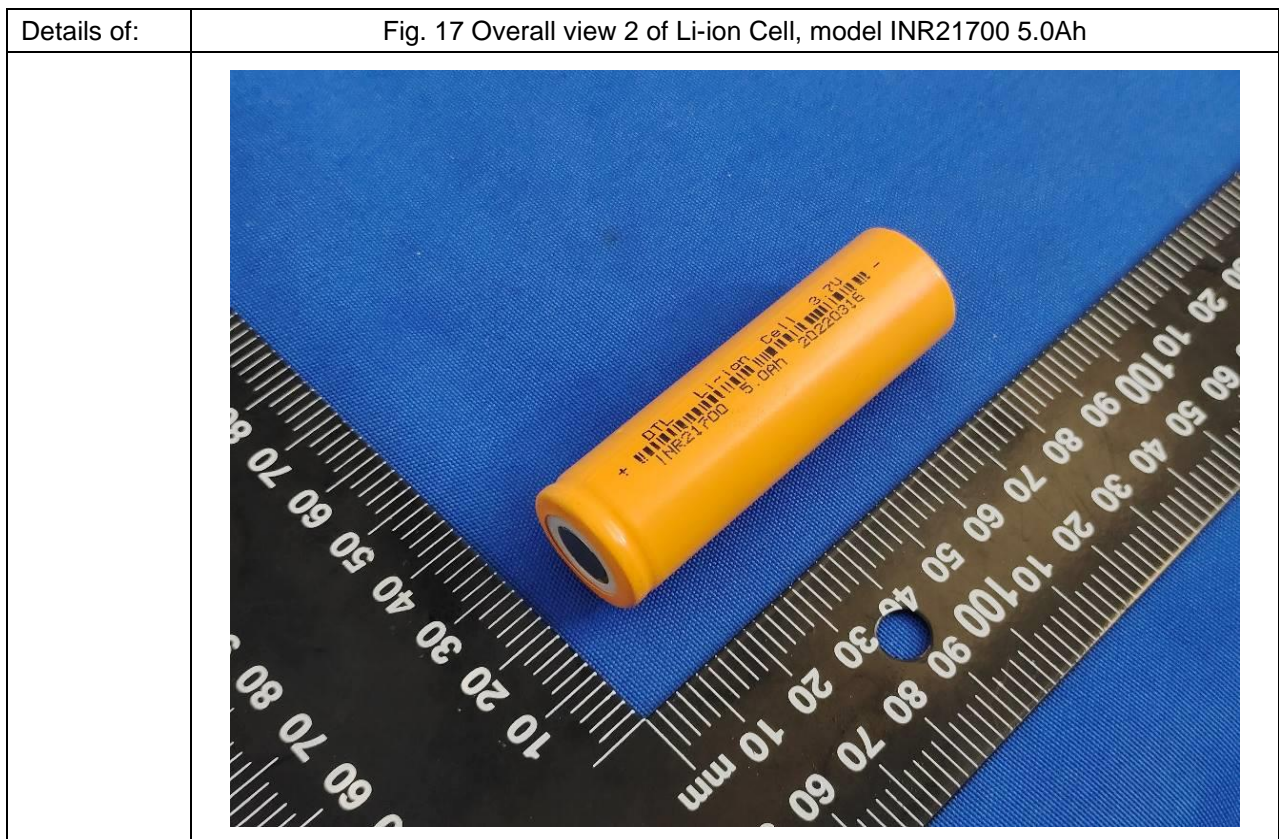
Details of:	Fig. 12 Overall view 2 of Li-ion Cell, model INR21700 4.5Ah
	 A photograph showing the same cylindrical orange Li-ion cell from a different angle, lying diagonally on the blue textured surface. Two rulers are visible: one on the left with markings from 10 to 100 mm, and one on the right with markings from 10 to 100 mm. The cell's printed text is visible: "DTL Li-ion Cell 3.7V", "INR21700 4.5Ah 20220316", and a barcode.

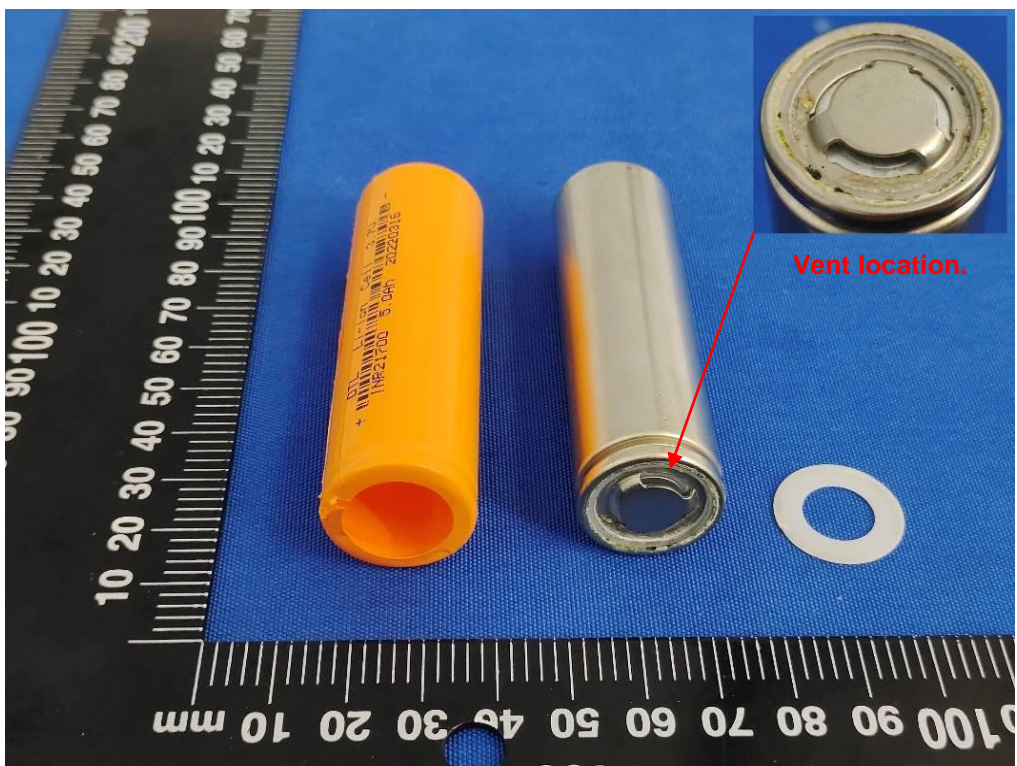
Details of:	Fig. 13 Overall view 3 of Li-ion Cell, model INR21700 4.5Ah
	 A photograph showing a single cylindrical Li-ion cell with an orange plastic casing. The cell is positioned horizontally on a blue fabric surface. A black ruler with white markings is placed diagonally across the frame, providing a scale for the cell's dimensions. The cell's length is approximately 60 mm.

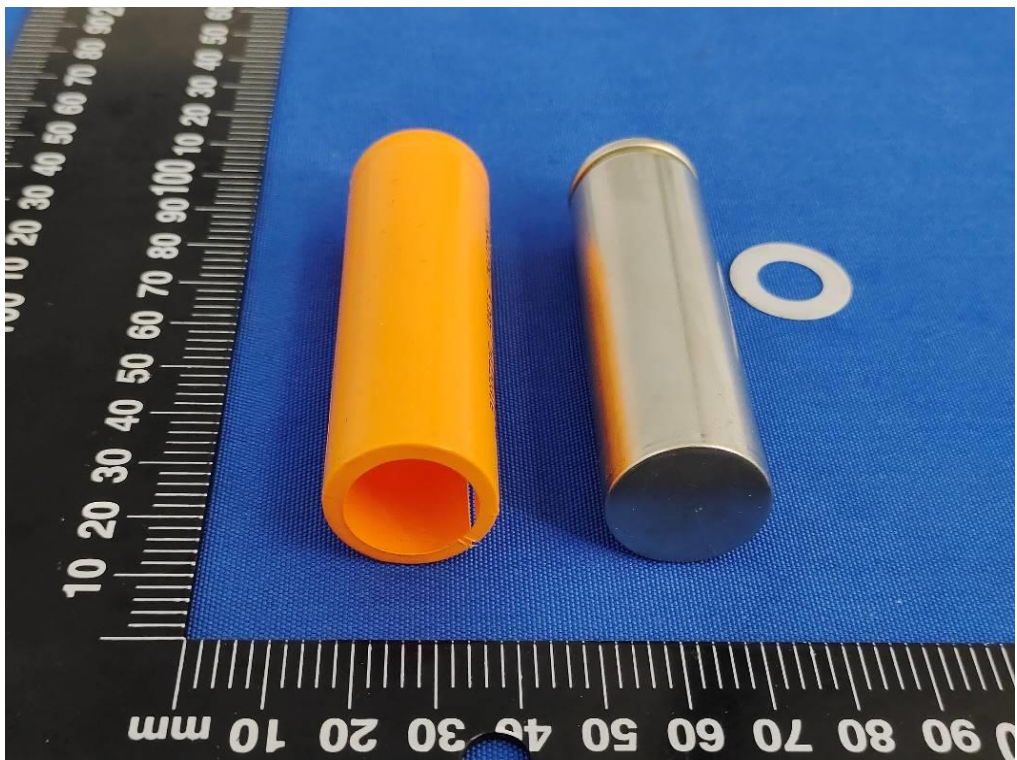
Details of:	Fig. 14 Overall view 1 of Li-ion Cell with heat-shrinking tube disassembled, model INR21700 4.5Ah
	 A photograph showing the disassembled components of a Li-ion cell. On the left is the orange plastic casing. In the center is the metallic cylindrical cell body. To the right of the cell body is a small, circular, white O-ring. A red arrow points from the text "Vent location." to a small hole on the bottom of the metallic cell body. A black ruler with white markings is placed diagonally across the frame for scale. An inset image in the top right corner shows a close-up of the metallic cell body's top terminal.



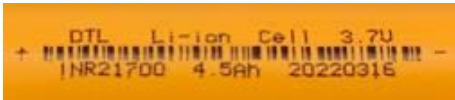

Details of:	Fig. 15 Overall view 2 of Li-ion Cell with heat-shrinking tube removed, model INR21700 4.5Ah
	

Details of:	Fig. 16 Overall view 1 of Li-ion Cell, Model INR21700 5.0Ah
	



Details of:	Fig. 19 Overall view 1 of Li-ion Cell with heat-shrinking tube disassembled, model INR21700 5.0Ah
	

Details of:	Fig. 20 Overall view 2 of Li-ion Cell with heat-shrinking tube removed, model INR21700 5.0Ah
	

Details of:	Fig. 21 Label artwork of Li-ion Cell, Model 1) INR21700 3.5Ah, 2) INR21700 4.0Ah, 3) INR21700 4.5Ah, 4) INR21700 5.0Ah
	<p>The marking which is printed on the cell.</p> <p>INR21700 3.5Ah</p>  <p>INR21700 4.0Ah</p>  <p>INR21700 4.5Ah</p>  <p>INR21700 5.0Ah</p>  <p>Remark:</p> <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.</p>

---End of photo documentation---