Test Report
检测报告

No.: CANEC26001743013 **Date:** Feb 09, 2026

日期： 2026 年 02 月 09 日

Client Name:

客户名称：

Client Address:

客户地址：

Sample Name:	Polymer Lithium-ion battery
样品名称:	聚合物锂离子电池
Model No.:	7565121-8000
型号:	7565121-8000
Sample Type:	portable battery (non-zinc-air button cell)
样品类型:	便携式电池（非锌空气纽扣电池）

The above sample(s) and information were provided by the client.
以上样品及信息由客户提供。

SGS Job No.:	CQP26-000795
SGS 工作编号:	CQP26-000795
Sample Receiving Date:	Jan 19, 2026
样品接收时间:	2026 年 01 月 19 日
Testing Period:	Jan 19, 2026 ~ Feb 07, 2026
检测周期:	2026 年 01 月 19 日 ~ 2026 年 02 月 07 日
Test Requested:	Select test(s) as requested by the client.
检测要求:	根据客户要求检测
Test Method(s):	Please refer to next page(s).
检测方法:	见后续页。
Test Result(s):	Please refer to next page(s).

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch
通标标准技术服务有限公司广州分公司
授权签名

Annie Ren

Annie Ren 任婷
Approved Signatory
批准签署人

Scan to see the report

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检测结果: 见后续页。

Test Requirement **检测要求**	**Conclusion** **结论**
Annex I of Regulation (EU) 2023/1542– Heavy Metals Content in batteries and waste batteries 法规(EU) 2023/1542 附件 I-电池及废电池中的重金属含量	Pass 符合

Test Result(s):
检测结果：

Test Part Description：
检测部件外观描述:

SN ID 样品序号	Sample No. 样品编号	SGS Sample ID SGS 样品 ID	Description 样品描述
SN1	M	CAN26-0017430-0013	"Battery" “电池”

Remarks:
(1) 1 mg/kg = 1 ppm = 0.0001%
(2) MDL = Method Detection Limit
(3) ND = Not Detected (< MDL)
(4) “-“ = Not Regulated

备注：
(1) 1 mg/kg = 1 ppm = 0.0001%
(2) MDL= 方法检出限
(3) ND = 未检出(< MDL)
(4) "-" = 未规定

<u>Annex I of Regulation (EU) 2023/1542– Heavy Metals Content in batteries and waste batteries</u>
<u>法规(EU) 2023/1542 附件 I-电池及废电池中的重金属含量</u>

Test Method: SGS In House Method (GZTC CHEM-TOP-068), analysis was performed by ICP-OES or AAS or Hg-analyzer.
检测方法： SGS 内部方法 (GZTC CHEM-TOP-068)，采用 ICP-OES、AAS 或测汞仪进行分析。

Test Item(s) 检测项目	Limit 限值	Unit(s) 单位	MDL	M
Lead(Pb) / 铅(Pb)	0.01	%	0.0010	ND
Cadmium(Cd) / 镉(Cd)	0.002	%	0.0010	ND
Mercury(Hg) / 汞(Hg)	0.0005	%	0.0001	ND
Conclusion / 结论				**Pass** **符合**

Notes:
(1) Restriction on substances

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Column 1 Designation of the substance or group of substances	Column 2 Conditions of restriction
1. Mercury CAS No 7439-97-6 EC No 231-106-7 and its compounds	Batteries, whether or not incorporated into appliances, light means of transport or other vehicles, shall not contain more than 0,0005 % of mercury (expressed as mercury metal) by weight
2. Cadmium CAS No 7440-43-9 EC No 231-152-8 and its compounds	Portable batteries, whether or not incorporated into appliances, light means of transport or other vehicles, shall not contain more than 0,002 % of cadmium (expressed as cadmium metal) by weight
3. Lead CAS No 7439-92-1 EC No 231-100-4 and its compounds	1. From 18 August 2024, portable batteries, whether or not incorporated into appliances, shall not contain more than 0,01 % of lead (expressed as lead metal) by weight. 2. The restriction set out in point 1 shall not apply to portable zinc-air button cells until 18 August 2028.

(2) According to the EU New Battery Regulation (EU) 2023/1542, portable batteries (non portable zinc-air button cells) containing between 0,004 %-0.01 % lead, shall be marked with the chemical symbol for the metal concerned: Pb.

备注：
(1) 限制物质

第 1 列 物质或物质组的名称	第 2 列 限制条件
1. 汞 CAS No 7439-97-6 EC No 231-106-7 及其化合物	电池无论是否安装在设备、轻型运输工具或其他车辆中，汞≤0.0005%
2. 镉 CAS No 7440-43-9 EC No 231-152-8 及其化合物	便携式电池，无论是否装在设备、轻型运输工具或其他车辆上，镉≤0.002%
3. 铅 CAS No 7439-92-1 EC No 231-100-4 及其化合物	1、自 2024 年 8 月 18 日起，便携式电池，无论是否与设备结合，铅≤0.01%； 2、第 1 点所列限制在 2028 年 8 月 18 日前不适用于便携式锌空气纽扣电池

(2) 根据欧盟新电池法规 (EU) 2023/1542，便携式电池(非锌空气纽扣电池)中铅含量在 0.004%-0.01%的电池应标有化学符号：Pb。

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (*w*=0) stated in ILAC-G8:09/2019.
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The test report shall only be used for clients' scientific research, teaching, internal quality control, product research and development, etc… and just for internal reference.
除非另有说明，参照 ILAC-G8:09/2019，使用简单接受（*w*=0）的二元判定规则进行符合性判定。
除非另有说明，此报告结果仅对检测的样品负责。本报告未经本公司书面许可，不可部分复制。
检测报告仅用于客户科研、教学、内部质量控制、产品研发等目的，仅供内部参考。

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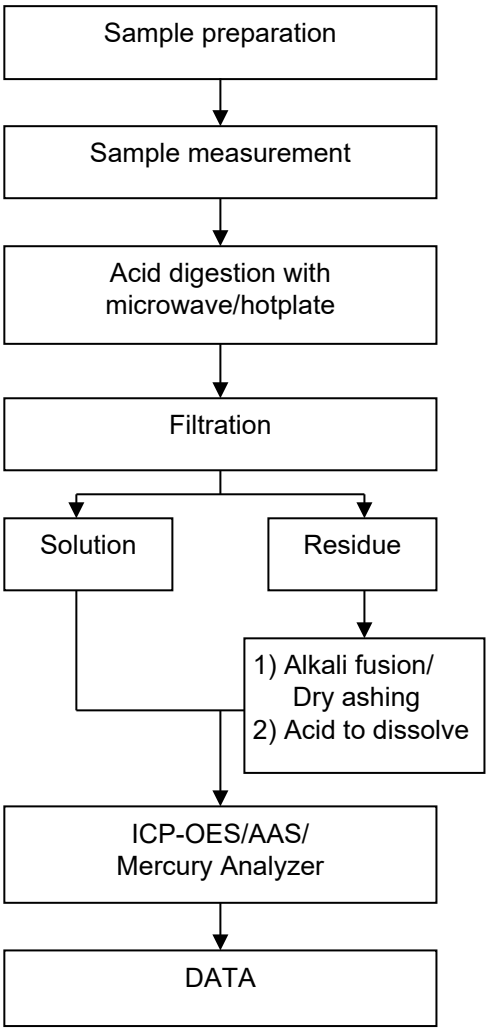
ATTACHMENTS

Battery Testing Flow Chart



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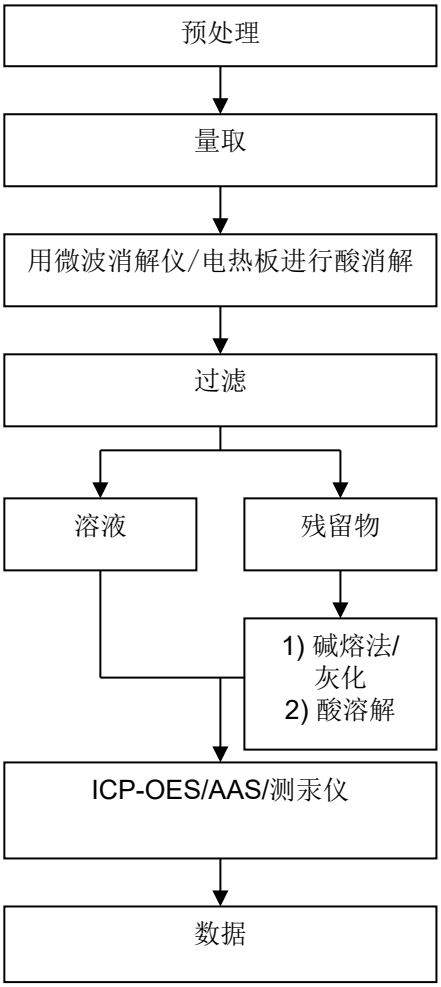
附件

电池 检测流程图



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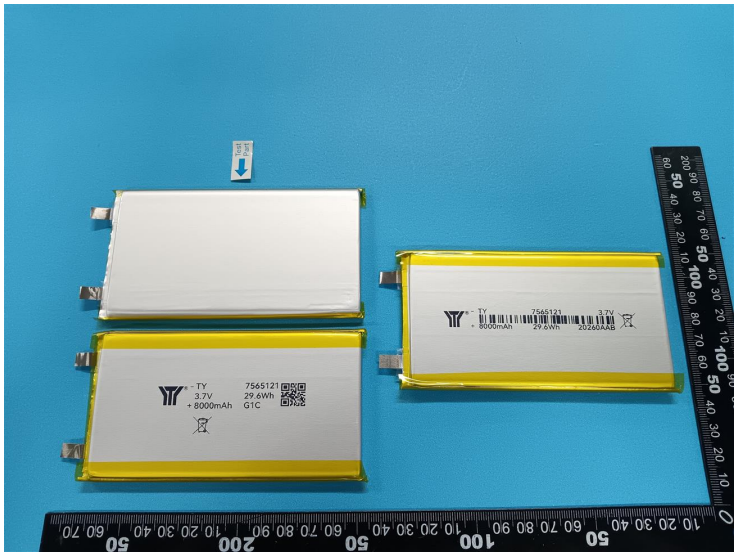
Sample Photo:
样品照片：



CAN26-0017430-0013

SGS authenticate the photo on original report only
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*** End of Report ***
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Test Report issued under the responsibility of:

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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

Report Number. ..... :	CN22KG53 001
Date of issue..... :	2025-12-29
Total number of pages ..... :	24 pages
Name of Testing Laboratory preparing the Report ..... :	Shenzhen TCT Testing Technology Co., Ltd.
Applicant's name ..... :	
Address..... :	
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_2C
Test Report Form(s) Originator .... :	DEKRA Certification B.V.
Master TRF ..... :	Dated 2022-07-01

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This report is not valid as a CB Test Report unless signed by an approved IECEE Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description ..... :	Rechargeable Polymer Li-ion Cell
Trade Mark(s) ..... :	
Manufacturer ..... :	Same as applicant
Model/Type reference ..... :	7565121
Ratings ..... :	3.7V, 8000mAh, 29.6Wh

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):

☒	**CB Testing Laboratory:**	**Shenzhen TCT Testing Technology Co., Ltd.**	
Testing location/ address.....:		2101&2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Street, Bao'an District, Shenzhen, China	
Tested by (name, function, signature).....:		David Lu (Project Engineer)	David Lu
Approved by (name, function, signature)...:		Aiden Liu (Reviewer)	Aiden. Liu
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address.....:			
Tested by (name + signature).....:			
Witnessed by (name, function, signature) .:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 3:**		
☐	**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 1: (Republic of Korea) NATIONAL DIFFERENCES (3 pages); Attachment 2: Photo documentation (1 page);	
Summary of testing:	
Tests performed (name of test and test clause): cl.7.1 Charging procedure for test purposes (for Cells); cl.7.2.1 Continuous charging at constant voltage (Cells); cl.7.3.1 External short circuit (Cells); cl.7.3.3 Free fall (Cells); 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); The electrolyte type of this cell doesn't belong to polymer, and the addition test cl.7.3.9 was carried out to evaluate the cell. Tests are made with the number of cells specified in IEC 62133-2:2017, IEC 62133-2:2017/AMD1:2021 Table 1.	**Testing location:** **Shenzhen TCT Testing Technology Co., Ltd.** 2101&2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Street, Bao'an District, Shenzhen, China
Summary of compliance with National Differences (List of countries addressed): KR KR= Korea, Republic of ☒ **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) :

☒ 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").

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

- Rechargeable Polymer Li-ion Cell

Model: 7565121 INP8/65/121

3.7V 8000mAh 29.6Wh

+ Date: YYYYMMDD Made in China

WARNING: Risk of Fire and Burns. Do Not Open, Crush, Heat Above 60°C/140°F or Incine rate. Do not short circuit. If bulges severely, discontinue use.

Date code: YYYYMMDD

YYYY=Year, MM=Month, DD=Day

Test item particulars.....:	
Classification of installation and use.....:	To be defined in final product
Supply Connection.....:	Electrode plate
Recommend charging method declared by the manufacturer.....:	Charging the cell with 1600mA constant current and 4.20V constant voltage until the current reduces to 160mA at ambient 20°C±5°C.
Discharge current (0,2 It A) .....:	1600mA
Specified final voltage.....:	3.0V
Upper limit charging voltage per cell.....:	4.2V
Maximum charging current.....:	8000mA
Charging temperature upper limit.....:	50°C
Charging temperature lower limit.....:	10°C
Polymer cell electrolyte type.....:	☐ gel polymer ☐ solid polymer ☒ 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 .....:	2025-12-02
Date (s) of performance of tests.....:	2025-12-05 to 2025-12-20
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 ☐ comma / ☒ point is used as the decimal separator.**	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
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 ..... :	☐ **Yes** ☒ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies).....:	Same as applicant

General product information and other remarks:

The cell consists of positive electrode plate, negative electrode plate, separator, electrolyte, case. The positive and negative electrode plates are housed in the case in the state being separated by the separator.

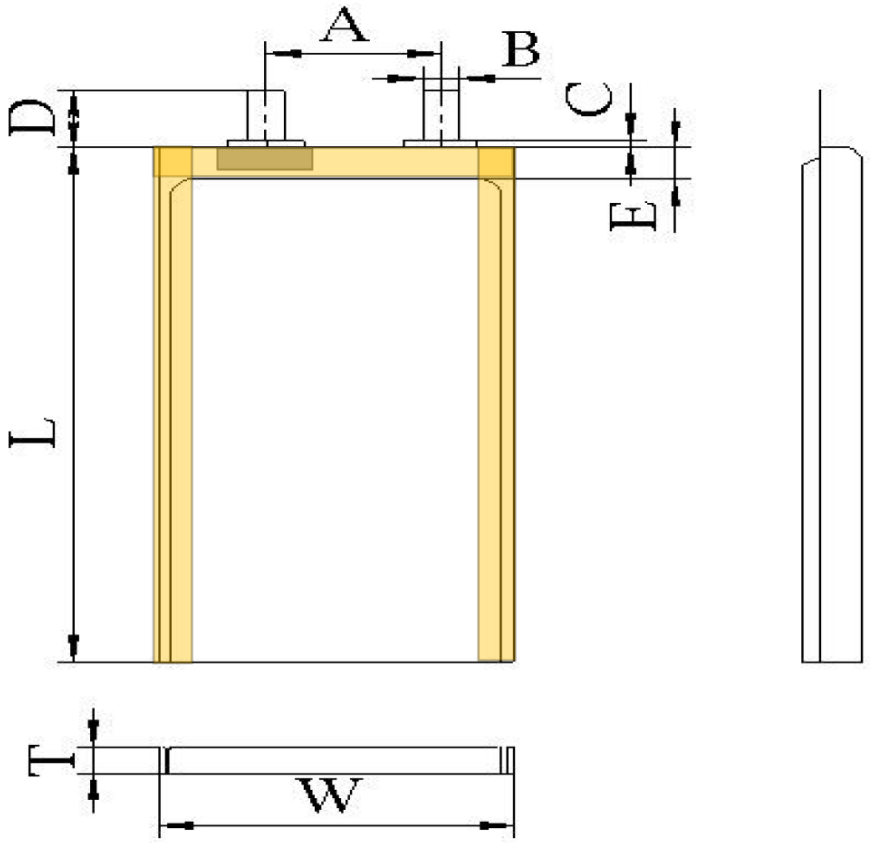
The main features of the cell are shown as below (clause 7.1.1):

Model	Nominal capacity	Nominal voltage	Nominal Charge Current	Nominal Discharge Current	Maximum Charge Current	Maximum Discharge Current	Charge Voltage	Final Voltage
7565121	8000mAh	3.7V	1600mA	1600mA	8000mA	8000mA	4.20V	3.0V

The main features of the cell are shown as below (clause 7.1.2):

Model	Upper limit charge voltage	Taper-off current	Lower charge temperature	Upper charge temperature
7565121	4.2V	400mA	10°C	50°C

Construction:



(Maximum) Dimension: T×W×L: 7.5mm×65.0mm×121.0mm
Cell

Circuit diagram:

None, Cell only

IEC 62133-2			
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	Cell only.	N/A
	Insulation resistance (MΩ) ..... :		—
	Internal wiring and insulation are sufficient to withstand maximum anticipated current, voltage and temperature requirements		N/A
	Orientation of wiring maintains adequate 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	Venting mechanism exists on the narrow side of pouch cell.	P
	Encapsulation used to support cells within an outer casing does not cause the battery to overheat during normal operation nor inhibit pressure relief		N/A
5.4	**Temperature, voltage and current management**		N/A
	Batteries are designed such that abnormal temperature rise conditions are prevented	Cell only.	N/A
	Batteries are designed to be within temperature, voltage and current limits specified by the cell manufacturer		N/A
	Batteries are provided with specifications and charging instructions for equipment manufacturers so that specified 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	Electrode plate contacts complied with the requirements.	P

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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		P
	Terminal contacts are arranged to minimize the risk of short circuits		P
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	Cell only.	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	Cell only.	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	Cell only.	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	Complied. Quality control plan certificate provided.	P
5.8	**Battery safety components**	See TABLE: Critical components information	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	Not coin cells	N/A
	Unless otherwise specified, tests are carried out in an ambient temperature of 20 °C ± 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	Cell only.	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	Cell only.	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 ± 5 °C, using the method declared by the manufacturer	See page 6.	P
	Prior to charging, the battery has been discharged at 20 °C ± 5 °C at a constant current of 0,2 It A down to a specified final voltage	See page 6.	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	Charge temperature specified by manufacturer: 10-50°C. 10°C used for lower limit tests. 50°C used for upper limit tests.	P
7.2	**Intended use**		P
7.2.1	Continuous charging at constant voltage (cells)	Tested complied.	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	Charging for 7 days with 1600mA.	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)	Cell only.	N/A
	Oven temperature (°C).....:		—
	Results: no physical distortion of the battery case resulting in exposure of internal protective components and cells		N/A
7.3	**Reasonably foreseeable misuse**		P
7.3.1	External short-circuit (cell)	Tested complied.	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)	Cell only.	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	Tested complied.	P
	Results: no fire, no explosion	No fire. No explosion	P
7.3.4	Thermal abuse (cells)	Tested complied.	P
	Oven temperature (°C) ..... :	130°C	—
	Results: no fire, no explosion	No fire. No explosion	P
7.3.5	Crush (cells)	Tested complied.	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
7.3.6	Over-charging of battery	Cell only.	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)	Tested complied.	P
	Discharge a single cell to the lower limit discharge voltage specified by the cell manufacturer	Lower limit discharge voltage 3.0V	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)	Cell only.	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)	Tested complied.	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	400N for prismatic cell.	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	Information for safety mentioned in manufacturer's specifications.	P
	Manufacturers of batteries provides information regarding how to minimize and mitigate hazards to equipment manufacturers or end-users	Cell only.	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

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Clause	Requirement + Test	Result - Remark	Verdict
	Do not allow children to replace batteries without adult supervision		N/A
8.2	**Small cell and battery safety information**	Not small cells.	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 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
	Cells are marked as specified in IEC 61960, except coin cells	The cell is marked in accordance with IEC 61960, also see page 5.	P
	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		N/A
9.2	**Battery marking**	Cell only.	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	Not coin cells.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Small cells and batteries are intended for direct sale in consumer-replaceable applications, caution for ingestion is given on the immediate package	Not intended for direct sale.	N/A
9.4	**Other information**	Cell only.	N/A
	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	Not coin cells.	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**	Complied.	P
A.3	**Consideration on charging voltage**	Complied.	P
A.3.1	General		P
A.3.2	Upper limit charging voltage	4.2V applied.	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	4.2V applied.	N/A
A.4	**Consideration of temperature and charging current**		P
A.4.1	General		P
A.4.2	Recommended temperature range	See A.4.2.2.	P
A.4.2.1	General		P
A.4.2.2	Safety consideration when a different recommended temperature range is applied	Charging temperature declared by client is: 10-50°C	N/A
A.4.3	High temperature range	Not higher than the temperature specific in this standard.	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

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Clause	Requirement + Test	Result - Remark	Verdict
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	Not lower than the temperature specific in this standard.	N/A
A.4.4.1	General		N/A
A.4.4.2	Explanation of safety viewpoint		N/A
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	Cell specified final voltage 3.0V, not exceed 3.0V specified by cell manufacturer.	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		N/A
A.5.5.1	Insertion of nickel particle in winding core		N/A
A.5.5.2	Marking the position of the nickel particle on both ends of the winding core of the separator		N/A
A.5.6	Insertion of nickel particle in prismatic cell		P
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

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Clause	Requirement + Test	Result - Remark	Verdict
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
ANNEX B	**RECOMMENDATIONS TO EQUIPMENT MANUFACTURERS AND BATTERY ASSEMBLERS**		N/A
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

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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**	
TS221117026C1#	4.20	1.6	4.18	P	
TS221117026C2#	4.20	1.6	4.19	P	
TS221117026C3#	4.20	1.6	4.18	P	
TS221117026C4#	4.20	1.6	4.17	P	
TS221117026C5#	4.20	1.6	4.18	P	
Supplementary information: - No fire or explosion - No leakage					

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 (50°C)					
TS221117026C 6#	55.0	4.21	80	28.3	P
TS221117026C 7#	55.0	4.21	82	27.9	P
TS221117026C 8#	55.0	4.20	81	27.6	P
TS221117026C 9#	55.0	4.20	82	28.2	P
TS221117026C 10#	55.0	4.20	81	28.1	P
Samples charged at charging temperature lower limit (10°C)					
TS221117026C 11#	55.0	4.18	80	25.9	P
TS221117026C 12#	55.0	4.18	81	27.2	P
TS221117026C 13#	55.0	4.19	83	27.1	P
TS221117026C 14#	55.0	4.18	82	26.7	P
TS221117026C 15#	55.0	4.17	82	26.2	P
Supplementary information: - No fire or explosion					

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Clause	Requirement + Test	Result - Remark	Verdict

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**
Supplementary information:						

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 (50°C)				
TS221117026C29#	4.20	4.20	13.01	P
TS221117026C30#	4.20	4.20	13.03	P
TS221117026C31#	4.20	4.20	13.00	P
TS221117026C32#	4.21	4.21	13.01	P
TS221117026C33#	4.20	4.20	13.02	P
Samples charged at charging temperature lower limit (10°C)				
TS221117026C34#	4.17	4.17	13.01	P
TS221117026C35#	4.18	4.18	13.02	P
TS221117026C36#	4.18	4.18	13.03	P
TS221117026C37#	4.17	4.17	13.01	P
TS221117026C38#	4.18	4.18	13.02	P
Note: A 13kN force applied at the wide side of prismatic cells. No voltage abrupt occurred. **Supplementary information:** - No fire or explosion				

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Clause	Requirement + Test	Result - Remark	Verdict

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:					

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
TS221117026C39#	3.28	8.0	3.0	P
TS221117026C40#	3.28	8.0	3.0	P
TS221117026C41#	3.26	8.0	3.0	P
TS221117026C42#	3.27	8.0	3.0	P
TS221117026C43#	3.28	8.0	3.0	P
Supplementary information: - No fire or explosion				

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:					

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Clause	Requirement + Test	Result - Remark	Verdict

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:						

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 (50°C)					
TS221117026C 44#	50	4.21	1	400	P
TS221117026C 45#	50	4.20	1	400	P
TS221117026C 46#	50	4.21	1	400	P
TS221117026C 47#	50	4.20	1	400	P
TS221117026C 48#	50	4.20	1	400	P
Samples charged at charging temperature lower limit (10°C)					
TS221117026C 49#	10	4.18	1	400	P
TS221117026C 50#	10	4.18	1	400	P
TS221117026C 51#	10	4.18	1	400	P
TS221117026C 52#	10	4.18	1	400	P
TS221117026C 53#	10	4.17	1	400	P

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.

- No fire

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Clause	Requirement + Test	Result - Remark	Verdict

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:				

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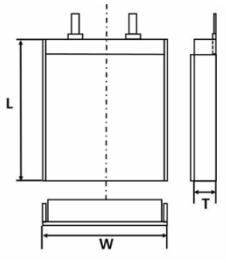
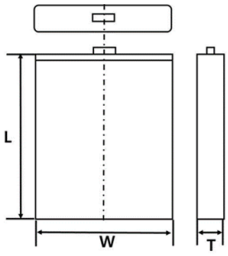
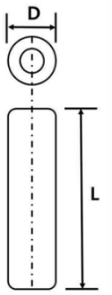
Clause	Requirement + Test	Result - Remark	Verdict

	TABLE: Critical components information				P
Object / part No.	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
Positive electrode	Ningxia Hanyao Graphene Storage Materials Technology Co., LTD	YHF-6M	$Li(Ni_{0.5}Co_{0.2}Mn_{0.3})O_2$, NMP, PVDF, Carbon Black, Conductive Additive	--	--
Negative electrode	Ganzhou RFT Technology Co., LTD	RFT-013	Graphite, CMC, SBR, Distilled Water, Conductive Additive	--	--
Electrolyte	Hunan Hangsheng New Material Co., LTD.	HS19095	$LiPF_6$+EMC+EC+DEC+VC+PS	--	--
Separator	Jiangxi Bolien New Material Co., LTD.	12+2+2μm	PE+Ceramic, Shutdown temperature: 135°C, thickness: 16μm	--	--
Supplementary information: [1)] Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

-- End of Report --

IEC62133_2B 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. ..... : **Attachment Originator** ..... : **Master Attachment**..... :	KR_ND_IEC62133_2B KTR Dated 2022-05-27		
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: • 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. **• 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,** **(e.g., quick charging power bank, etc.)**		N/A

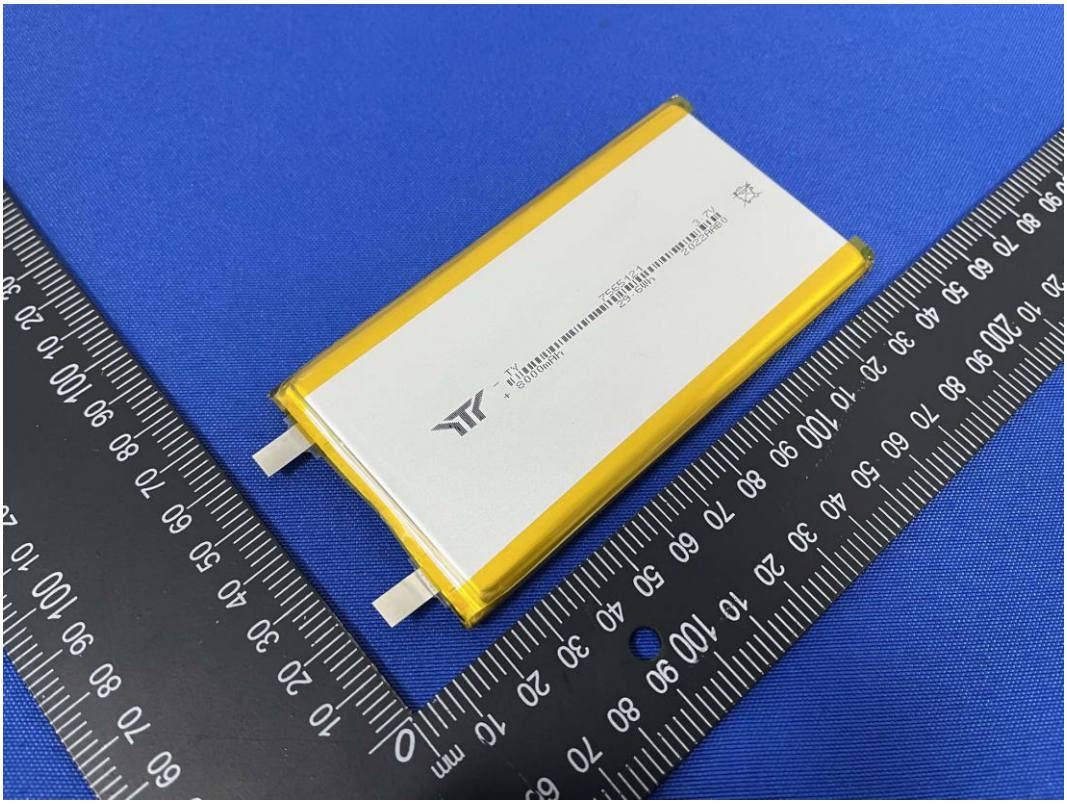
IEC62133_2B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	[Replace to the following statement] c) Acceptance criteria Filling beyond the manufacturer's specified limits should not result in ignition or explosion		N/A
Annex G	**Definition for shape and materials of outer case for cell**		—
(Addition)	G.1 General Annex G provides definitions for shape and materials of outer case for cell 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. G 2.2 Prismatic cell Cell having the shape of a parallelepiped whose faces are rectangular G.3 Materials of outer case for cell G.3.1 Soft case Non-metallic outer case or container for cell G.3.2 Hard case Metallic outer case or container for cell.	(Shape of outer cases) ☐Cylindrical ☒ Prismatic (Materials of outer cases) ☐Hard ☒Soft	—
Annex H	**Calculation method of the volumetric energy density for cell**		—
(Addition)	Annex H provide a calculation method of the volumetric energy density for cell in use of smart phone, tablet, notebook. 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.	501.8Wh/L	—

IEC62133_2B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	H.2 Calculation Method  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) $Volumetric\ energy\ density\ (Wh/L) = \frac{Nominal\ voltage\ (V) \times Rated\ capacity\ (Ah)}{Length\ (L) \times Width\ (W)\ \times Thickness\ (T)}$ [H.1 – Prismatic cell using soft case]  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) $Volumetric\ energy\ density\ (Wh/L) = \frac{Nominal\ voltage\ (V) \times Rated\ capacity\ (Ah)}{Length\ (L) \times Width\ (W)\ \times Thickness\ (T)}$ [H.2 – Prismatic cell using hard case]  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) $Volumetric\ energy\ density\ (Wh/L) = \frac{Nominal\ voltage\ (V) \times Rated\ capacity\ (Ah)}{3.14159\ \times \frac{Diameter\ (D)^2}{4} \times Length(L)}$ [H.3 – Cylindrical cell using hard case]		—

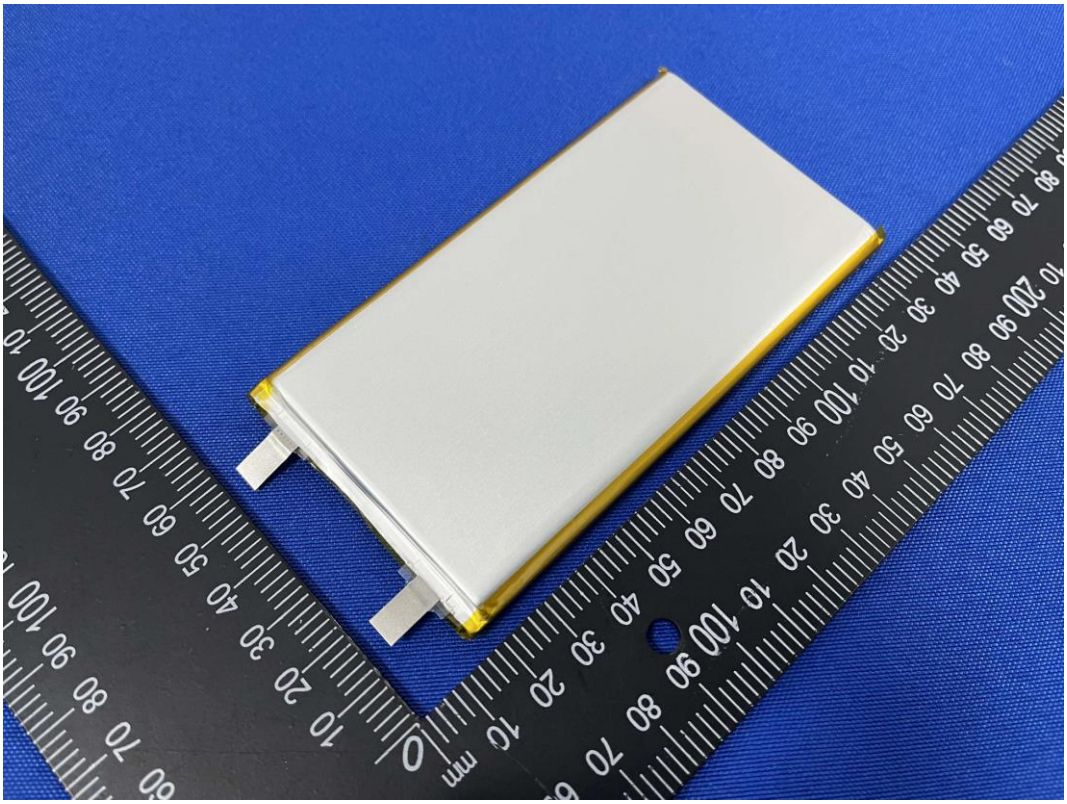
Attachment 2 Photo Documentation

Product: Rechargeable Polymer Li-ion Cell

Type Designation: 7565121



Picture 1. Front view of cell



Picture 2. Back view of cell