TEST REPORT

Applicant	:	
Address	:	
Manufacturer's name	:	
Address	:	

Report on the submitted samples said to be:

Sample Name	:	Cylindrical lithium-ion rechargeable battery
Trade Mark	:	N/A
Model	:	HYLN IMR14500-500mAh
Testing Period	:	Dec. 19, 2024 ~ Apr. 01, 2025
Date of issue	:	Apr. 01, 2025
Results	:	Please refer to next page(s).

Prepared by(Engineer): Jack Su

Approved(Manager): Justin Liu

This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of JIYA Laboratories,Inc.

Version

Version No.	Date	Description
00	Dec. 25, 2024	Original
01	Apr. 01, 2025	Report JIYA-241219007RR is invalid

****

TEST REQUEST

As specified client, according to EU Directive 2023/1542/EU, test the contents of total Lead(Pb), Cadmium(Cd), Mercury(Hg) in the submitted samples.

CONCLUSION

Pass

****

Results:

Test method: With reference to IEC 62321-5:2013 & IEC 62321-4:2013+AMD1:2017 CSV. Analysis was performed by inductively coupled plasma atomic emission spectrometer (ICP-OES)

MDL	Unit	MDL	Results	Limit
Mercury (Hg)	%	0.0002	N.D.	0.0005
Cadmium (Cd)	%	0.0002	N.D.	0.002
Lead (Pb)	%	0.0002	N.D.	0.01*

Remark:

According to EU Directive 2023/1542/EU:

※1 = The prohibition not apply to portable batteries and accumulators intended for use in:

(a) emergency and alarm systems, including emergency lighting;

(b) medical equipment;

(c) cordless power tools.

※2 =All batteries, accumulators and battery packs shall be marked with forked pulley dustbin

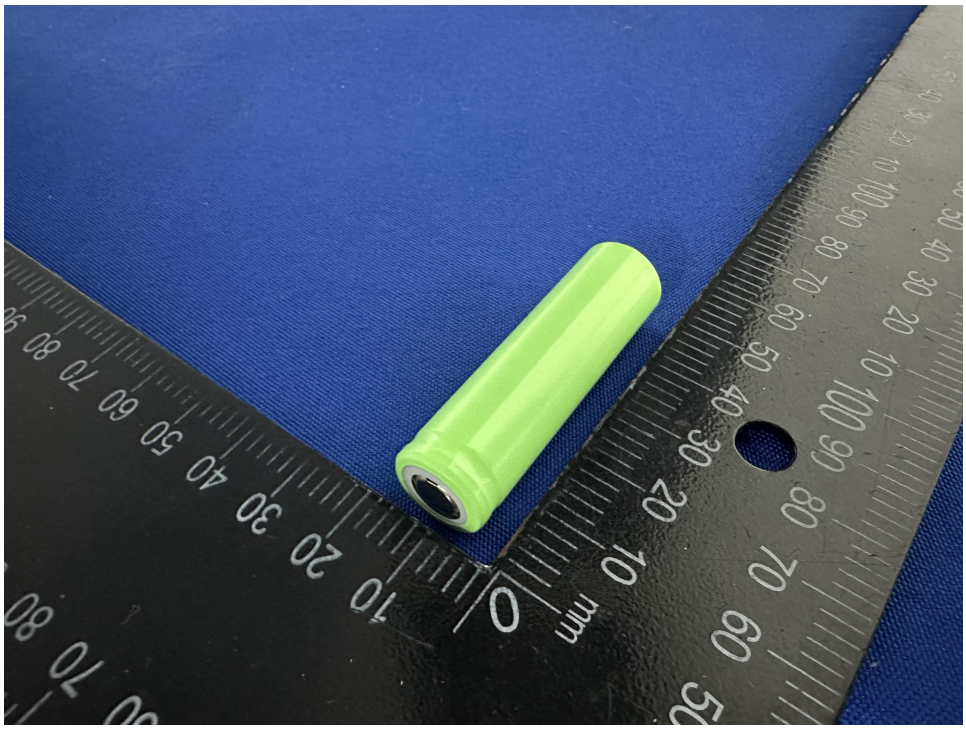
※3 = If batteries, accumulators and button cells containing more than 5 mg/kg Mercury, or more than 20 mg/kg Cadmium, or more than 100 mg/kg Lead, the chemical conformity of metal that should exceed the limit under the marking of forked pulley dustbin is Hg, Cd and Pb, and the chemical conformity occupies at least one fourth of the area of the marking of forked pulley dustbin.

※4 = If batteries or accumulators contain more than one of the above metals, the corresponding chemical conformity should be added separately.

Remark:

- mg/kg = ppm
- N.D. = Not detected or less than MDL
  MDL = Method Detection Limit
- Results shown are of total weight of the battery sample.
- Flow chart appendix is included.
- Photo appendix is included.

Photo of the sample



※※※※※ **END OF REPORT** ※※※※※

Statement:

1. The test report is considered invalidated without approval signature, special seal on the perforation.
2. The result(s) shown in this report refer only to the sample(s) tested.
3. Without written approval of JIYA, this report can't be reproduced except in full.
4. The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which JIYA hasn’t verified.
5. In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

Test Report issued under the responsibility of:

TÜVRheinland®

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. ..... :	**CN24LSLJ 002**
Date of issue ..... :	2025-04-01
Total number of pages ..... :	6 pages
Name of Testing Laboratory preparing the Report ..... :	Guangzhou MCM Certification & Testing 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

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

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.
This report shall not be reproduced, except in full, without the written approval of the Issuing NCB. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description ..... :	Cylindrical Lithium-ion Rechargeable Cell
Trade Mark(s) ..... :	N/A
Manufacturer ..... :	Same as applicant
Model/Type reference ..... :	IMR14500-400mAh, IMR14500-500mAh, IMR14500-600mAh, IMR14500-300mAh
Ratings ..... :	3.7V, 400mAh, 1.48Wh 3.7V, 500mAh, 1.85Wh 3.7V, 600mAh, 2.22Wh 3.7V, 300mAh, 1.11Wh

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

☒	**CB Testing Laboratory:**	Guangzhou MCM Certification & Testing Co., Ltd.	
Testing location/ address ..... :		Room 101 to 116 & 216, Building 2 (Office Building and Workshop)No. 45 Zhong Er Section of Shiguang Road, Zhongcun Street, Panyu District, Guangzhou City, Guangdong Province, China	
Tested by (name, function, signature) ..... :		Lena Lee (Engineer)	Lena Lee
Approved by (name, function, signature) .. :		Liang Hongcheng (Authorizer)	Liangzhongcheng
☐	**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: Photo Documentation (4 pages)

See original report CN24LSLJ 001.

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
N/A	**Guangzhou MCM Certification & Testing Co., Ltd.** N/A

Summary of compliance with National Differences (List of countries addressed):

KR

KR=Republic of Korea

☒ **The product fulfils the requirements of EN 62133-2:2017, EN 62133-2:2017/A1:2021.**

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: N/A (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)

Information on uncertainty of measurement:

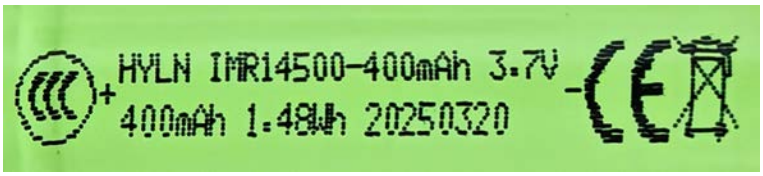
The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.

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.

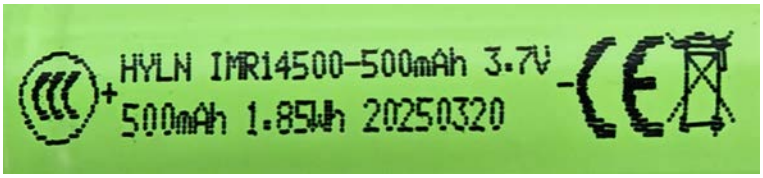
Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

Copy of marking plate:

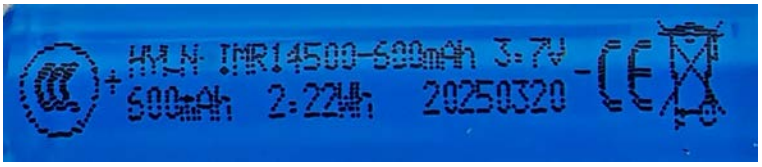
The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



Model: IMR14500-400mAh



Model: IMR14500-500mAh



Model: IMR14500-600mAh

Model: IMR14500-300mAh

Remark: The agreement about marking plate between battery pack manufacturer and cell factory provided.

Test item particulars.....:	
Classification of installation and use.....:	To be defined in final product
Supply Connection.....:	DC terminal
Recommend charging method declared by the manufacturer.....:	Charging the cell with 0.2C constant current until 4.2V, then constant voltage until charge current reduces to 40mA at ambient 20°C±5°C.
Discharge current (0,2 It A).....:	IMR14500-400mAh:80mA, IMR14500-500mAh:100mA, IMR14500-600mAh:120mA, IMR14500-300mAh:60mA.
Specified final voltage.....:	3.0V
Upper limit charging voltage per cell.....:	4.2V
Maximum charging current.....:	IMR14500-400mAh:200mA, IMR14500-500mAh:250mA, IMR14500-600mAh:300mA , IMR14500-300mAh:150mA.
Charging temperature upper limit.....:	45°C
Charging temperature lower limit.....:	0°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 .....:	N/A
Date (s) of performance of tests.....:	N/A
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:

This test report shall be read in conjunction with the original report CN24LSLJ 001.

Description of change(s):

1. Changed the marking plate of the cell (IMR14500-400mAh, IMR14500-500mAh, IMR14500-600mAh, IMR14500-300mAh), Details see page 4 and attachment 1.

For the above described change(s) the following was considered to be necessary:

Change	Testing	Comments	Result
1	N/A	No safety impact, no further testing considered as necessary.	P

History of amendments and modifications:

Ref. No. CN24LSLJ 001, dated 2024-04-10 (original test report)
Ref. No. CN24LSLJ 002, dated 2025-04-01 (1st modification)

Attachment 1 Photo Documentation

Product: Cylindrical Lithium-ion Rechargeable Cell

Type Designation: IMR14500-400mAh, IMR14500-500mAh, IMR14500-600mAh, IMR14500-300mAh

Figure 1 Front view of cell (Model: IMR14500-400mAh)

Figure 2 Side view of cell (Model: IMR14500-400mAh)

Attachment 1 Photo Documentation

Product: Cylindrical Lithium-ion Rechargeable Cell

Type Designation: IMR14500-400mAh, IMR14500-500mAh, IMR14500-600mAh, IMR14500-300mAh

Figure 3 Front view of cell (Model: IMR14500-500mAh)

Figure 4 Side view of cell (Model: IMR14500-500mAh)

Product: Cylindrical Lithium-ion Rechargeable Cell

Type Designation: IMR14500-400mAh, IMR14500-500mAh, IMR14500-600mAh, IMR14500-300mAh

Figure 5 Front view of cell (Model: IMR14500-600mAh)

Figure 6 Side view of cell (Model: IMR14500-600mAh)

Product: Cylindrical Lithium-ion Rechargeable Cell

Type Designation: IMR14500-400mAh, IMR14500-500mAh, IMR14500-600mAh, IMR14500-300mAh

Figure 7 Front view of cell (Model: IMR14500-300mAh)

Figure 8 Side view of cell (Model: IMR14500-300mAh)