TEST REPORT

Applicant	:	Henan Hengyi lithium energy technology Co., Ltd
Address	:	Building 3, Xinhua Industrial Park, Longmen Avenue, Xinhua District, Pingdingshan City, Henan, P.R.China
Manufacturer's name	:	Henan Hengyi lithium energy technology Co., Ltd
Address	:	Building 3, Xinhua Industrial Park, Longmen Avenue, Xinhua District, Pingdingshan City, Henan, P.R.China

Report on the submitted samples said to be:

Sample Name	:	Cylindrical lithium-ion rechargeable battery
Trade Mark	:	N/A
Tested model	:	HYLN IMR18650-1200mAh
Series models	:	N/A
Testing Period	:	Apr. 07, 2025 ~ Apr. 14, 2025
Date of issue	:	Apr. 14, 2025
Results	:	Please refer to next page(s).

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TEST REQUEST

According to the customer's request, based on the performed tests on submitted sample, the result of Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs, PBDEs, Dibuyl Phthalate(DBP), Benzylbutyl Phthalate(BBP), Bis(2-ethylhexyl) Phthalate(DEHP), Diispbutyl phthalate(DIBP) content comply with the limit as set of RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Conclusion

Pass

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Prepared by(Engineer): Jack Su

Approved(Manager): Justin Liu

JIYA Laboratories, Inc. JIYA Approved

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	Apr. 14, 2025	Original

Results:

A.EU RoHS Directive 2011/65/EU and its amendment directives on XRF

Test method: With reference to IEC 62321-3-1:2013, Screening by X-ray Fluorescence Spectroscopy (XRF)

Seq. No.	Tested Part(s)	Results					
		Cd	Pb	Hg	Cr▼	Br▼	
						PBBs	PBDEs
1	Purple plastic	BL	BL	BL	BL	BL	BL
2	White plastic	BL	BL	BL	BL	BL	BL
3	Silver metal	BL	BL	BL	BL	/	/

Note:

(1) Results were obtained by XRF for primary screening, and further chemical testing by ICP (for Cd, Pb, Hg), UV-Vis (for Cr(Ⅵ)) and GC-MS (for PBBs, PBDEs) are recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1:2013.

Element	Unit	Non-metal	Metal	Composite Material
Cd	mg/kg	BL≤70-3σ<X <130+3σ≤OL	BL≤70-3σ<X <130+3σ≤OL	BL≤50-3σ<X <150+3σ≤OL
Pb	mg/kg	BL≤700-3σ<X <1300+3σ≤OL	BL≤700-3σ<X <1300+3σ≤OL	BL≤500-3σ<X <1500+3σ≤OL
Hg	mg/kg	BL≤700-3σ<X <1300+3σ≤OL	BL≤700-3σ<X <1300+3σ≤OL	BL≤500-3σ<X <1500+3σ≤OL
Cr	mg/kg	BL≤700-3σ<X	BL≤700-3σ<X	BL≤500-3σ<X
Br	mg/kg	BL≤300-3σ<X	--	BL≤250-3σ<X

Note:

BL = Below Limit
OL = Over Limit
X = Inconclusive

(2) The XRF screening test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.

(3) The maximum permissible limit is quoted from the document 2015/863/EC amending RoHS directive 2011/65/EU:

(4) ▼=For restricted substances PBBs and PBDEs, the results show the total Br content; The restricted substance was Cr(VI), and the results showed the total Cr content

RoHS Restricted Substances	Maximum Concentration Value (mg/kg) (by weight in homogenous materials)
Cadmium (Cd)	100
Lead (Pb)	1000
Mercury (Hg)	1000
Hexavalent Chromium (Cr(Ⅵ))	1000
Polybrominated biphenyls (PBBs)	1000
Polybrominated diphenylethers (PBDEs)	1000
Dibuyl Phthalate(DBP)	1000
Benzylbutyl Phthalate(BBP)	1000
Bis(2-ethylhexyl) Phthalate(DEHP)	1000
Diispbutyl phthalate(DIBP)	1000

Disclaimers:

This XRF Screening report is for reference purposes only. The applicant shall make its/his/her own judgment as to whether the information provided in this XRF screening report is sufficient for its/his/her purposes.

The result shown in this XRF screening report will differ based on various factors, including but not limited to, the sample size, thickness, area, surface flatness, equipment parameters and matrix effect (e.g. plastic, rubber, metal, glass, ceramic etc.). Further wet chemical pre-treatment with relevant chemical equipment analysis are required to obtain quantitative data.

B. EU RoHS Directive 2011/65/EU and its amendment Directives 2015/863/EU on Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs, PBDEs, DBP, BBP, DEHP, DIBP content.

Test method:

Lead(Pb) & Cadmium(Cd) Content:

With reference to IEC 62321-5:2013, by acid digestion and analysis was performed by inductively coupled plasma atomic emission spectrometer (ICP-OES)

Mercury(Hg) Content:

With reference to IEC 62321-4:2013+AMD1:2017 CSV, by acid digestion and analysis was performed by inductively coupled plasma atomic emission spectrometer (ICP-OES)

Hexavalent Chromium(Cr^{6+}) Content:

With reference to IEC 62321-7-1:2015 or IEC 62321-7-2:2017, by alkaline digestion and analysis was performed by UV-visible spectrophotometer (UV-Vis)

PBBs & PBDEs Content:

With reference to IEC 62321-6:2015, by solvent extraction and analysis was performed by gas chromatographic-mass spectrometer (GC-MS)

BBP DBP DEHP & DIBP Content:

With reference to IEC 62321-8:2017, by solvent extraction and analysis was performed by gas chromatographic-mass spectrometer (GC-MS)

1) The test results of Hexavalent Chromium (Cr^{6+})(metal)

Item	Unit	MDL	Results	Limit
			N/A	
Hexavalent Chromium(Cr(VI))	ug/cm^2	0.10	N/A	-

2) The test results of Hexavalent Chromium (Cr^{6+})(non-metal)

Item	Unit	MDL	Results	Limit
			N/A	
Hexavalent Chromium(Cr(VI))	ug/cm^2	8	N/A	1000

3) The test results of Lead(Pb) and Cadmium (Cd)

Item	Unit	MDL	Results	Limit
			N/A	
Lead (Pb)	mg/kg	2	N/A	1000

Item	Unit	MDL	Results	Limit
			N/A	
Cadmium (Cd)	mg/kg	2	N/A	100

Note:

- MDL = Method Detection Limit
- /= Not apply
- LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10 μg/cm^2
- mg/kg = ppm=parts per million
- N.D.=Not Detected(<MDL or LOQ)
- ▼ = a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13ug/cm^2. The sample coating is considered to contain Cr(VI)
  b. The sample is negative for Cr(VI) if Cr(VI) is N.D.(concentration less than 0.10ug/cm^2). The sample coating is considered a non- Cr(VI) based coating
  c. The result between 0.10μg/cm^2 and 0.13μg/cm^2 is considered to be inconclusive, unavoidable coating variations may influence the determination

#1 According to RoHS directive 2011/65/EU and its amendments, Lead is exempted in glass of cathode ray tubes, electronic components and fluorescent tubes.

#2 According to RoHS directive 2011/65/EU and its amendments, Lead is exempted in electronic ceramic parts (e.g. piezoelectronic devices).

#3 According to RoHS directive 2011/65/EU and its amendments, Lead is exempted as an alloying element in Copper containing up to 4% (40000ppm) by weight.

#4 According to RoHS directive 2011/65/EU and its amendments, Lead is exempted in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead).

#5 According to the statement provided by the customer, according to RoHS directive 2011/65/EU and its amendments, Lead is exempted as an alloying element in Aluminum containing up to 0.4% (4000ppm) by weight.

#6 According to the statement provided by the customer, according to RoHS directive 2011/65/EU and its amendments, Cadmium and its compounds in electrical contact is exempted.

#7 According to the statement provided by the customer, according to RoHS directive 2011/65/EU and its Amendments，Lead is exempted in steel for machining purposes and in galvanised steel containing up to 0.35% (3500ppm) by weight.

4) The test results of DBP、BBP、DEHP & DIBP

Item	Unit	MDL	Results		Limit
			01	02	
Dibuyl Phthalate(DBP)	mg/kg	50	N.D.	N.D.	1000
Benzylbutyl Phthalate(BBP)	mg/kg	50	N.D.	N.D.	1000
Bis(2-ethylhexyl) Phthalate(DEHP)	mg/kg	50	N.D.	N.D.	1000
Diispbutyl phthalate(DIBP)	mg/kg	50	N.D.	N.D.	1000

4) The test results of PBBs & PBDEs

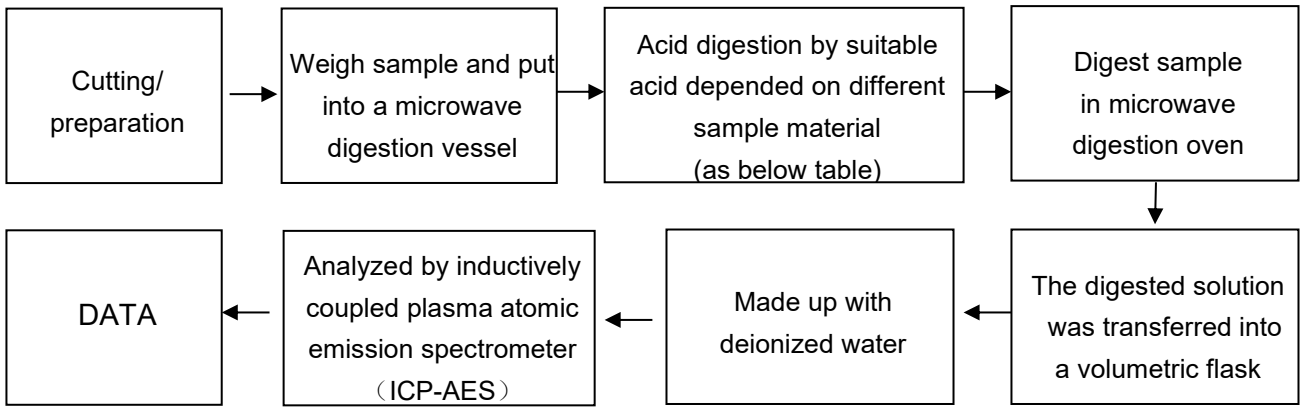
Item	Unit	MDL	Results	Limit
			N/A	
Polybrominated Biphenyls (PBBs)				
Monobromobiphenyl	mg/kg	5	N/A	
Dibromobiphenyl	mg/kg	5	N/A	
Tribromobiphenyl	mg/kg	5	N/A	
Tetrabromobiphenyl	mg/kg	5	N/A	
Pentabromobiphenyl	mg/kg	5	N/A	
Hexabromobiphenyl	mg/kg	5	N/A	
Heptabromobiphenyl	mg/kg	5	N/A	
Octabromobiphenyl	mg/kg	5	N/A	
Nonabromodiphenyl	mg/kg	5	N/A	
Decabromodiphenyl	mg/kg	5	N/A	
Total content	mg/kg	/	N/A	1000
Polybrominated Diphenylethers (PBDEs)(Mon-Deca)				
Monobromodiphenyl ether	mg/kg	5	N/A	
Dibromodiphenyl ether	mg/kg	5	N/A	
Tribromodiphenyl ether	mg/kg	5	N/A	
Tetrabromodiphenyl ether	mg/kg	5	N/A	
Pentabromodiphenyl ether	mg/kg	5	N/A	
Hexabromodiphenyl ether	mg/kg	5	N/A	
Heptabromodiphenyl ether	mg/kg	5	N/A	
Octabromodiphenyl ether	mg/kg	5	N/A	
Nonabromodiphenyl ether	mg/kg	5	N/A	
Decabromodiphenyl ether	mg/kg	5	N/A	
Total content	mg/kg	/	N/A	1000

Remark:

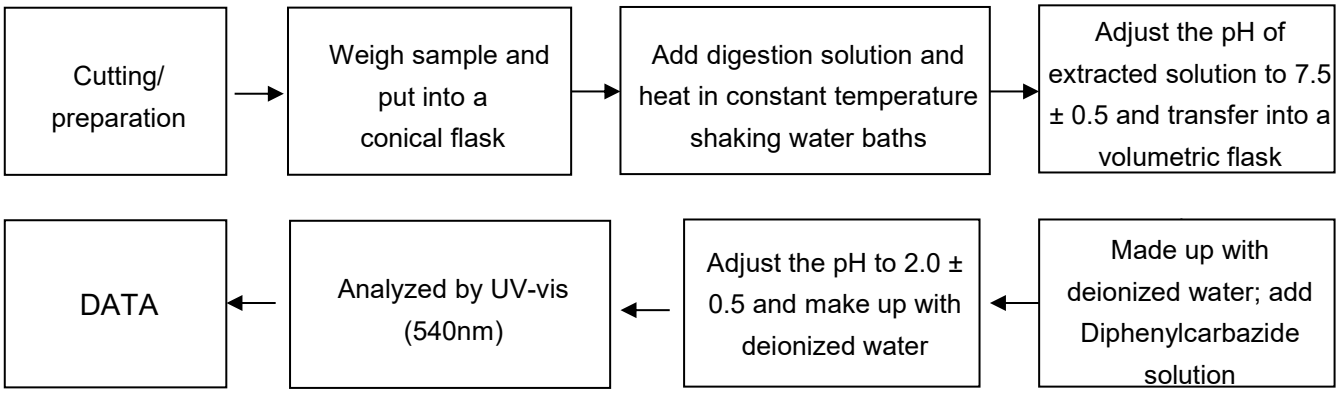
- mg/kg = ppm
- N.D. = Not detected
- MDL=Method detected limited
- Flow chart appendix is included
- Photo appendix is included.

Appendix

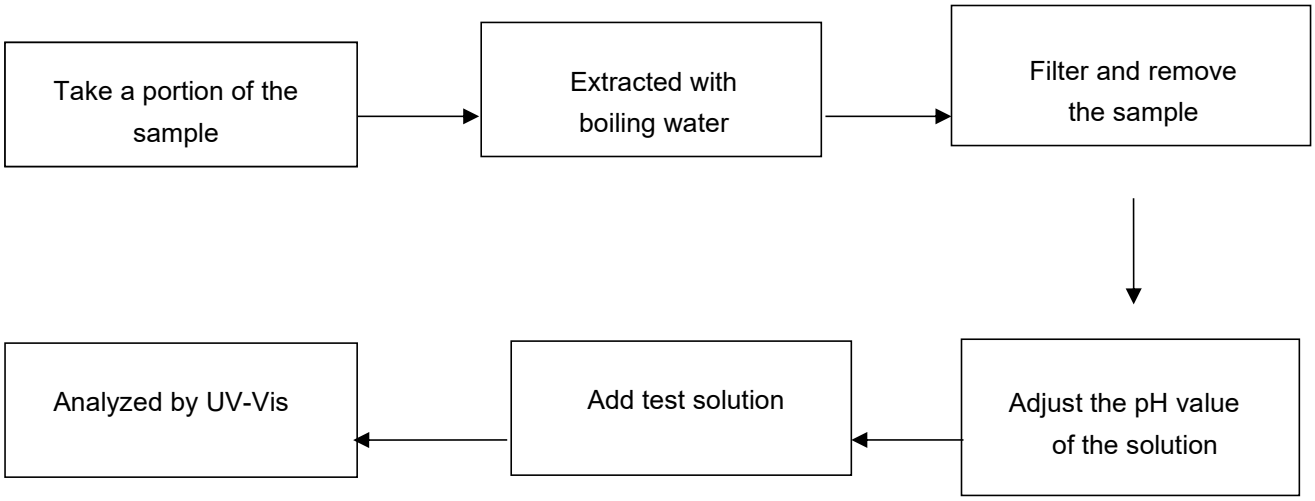
1. Test Flow chart for Cd/Pb /Hg content



2. Test Flowchart for Cr^{6+} content (For non-metal material)



Test Flowchart for Cr^{6+} content (For metal material)



3. Test Flow chart for PBBs & PBDEs & DBP & BBP & DEHP & DIBP content

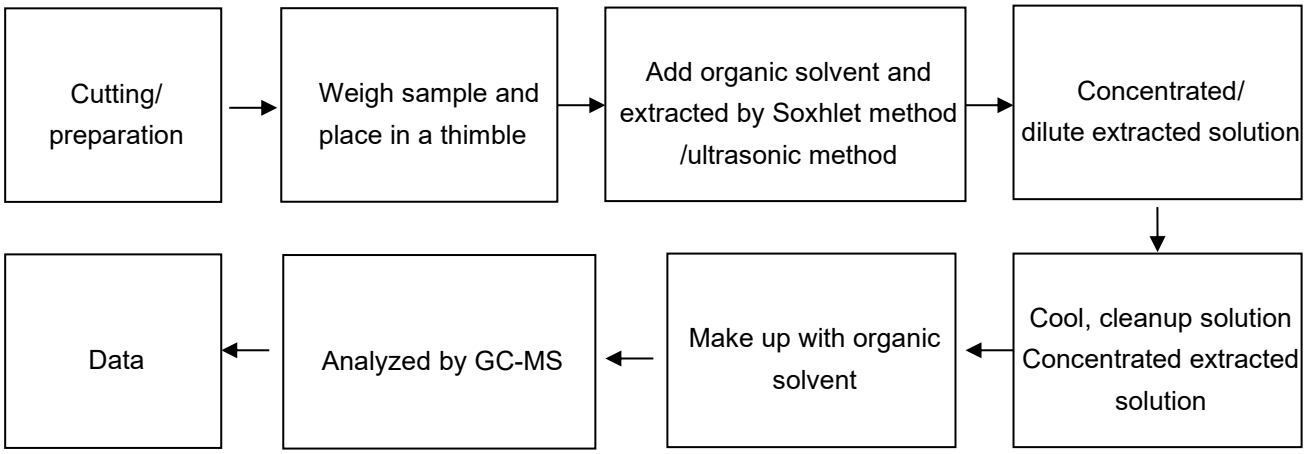
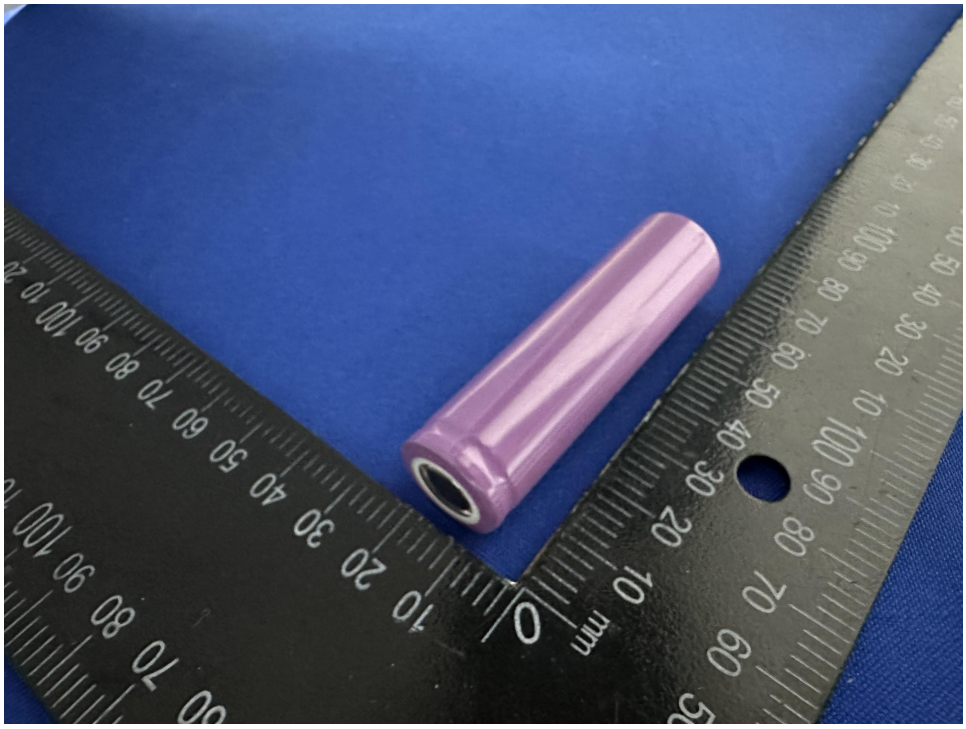


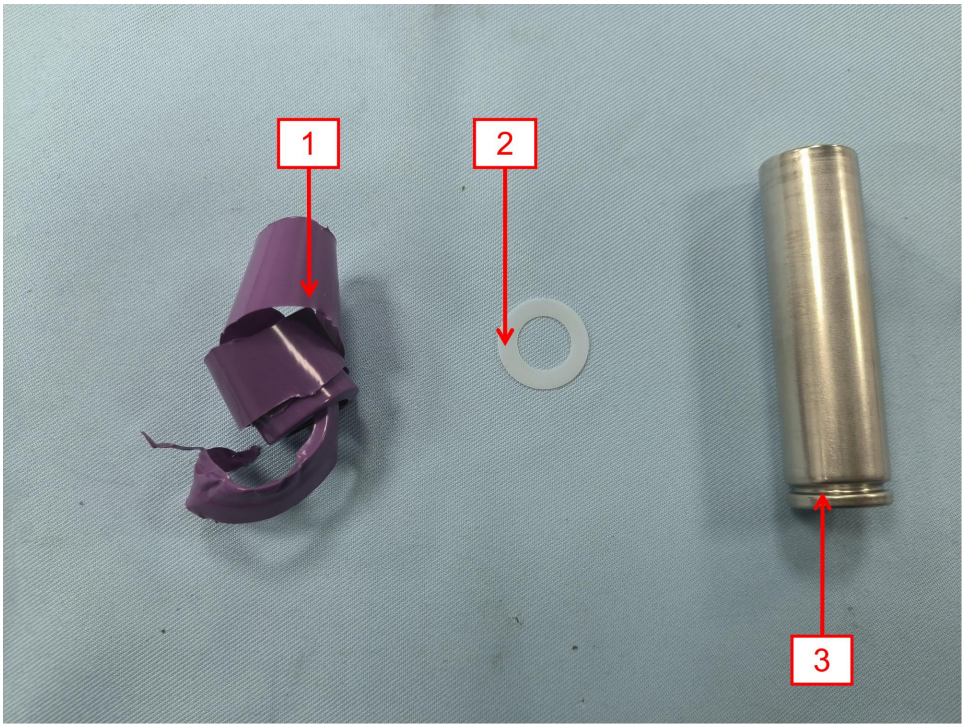
Photo of the sample











※※※※※ END OF REPORT ※※※※※

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