



TEST REPORT

Report No. : ZKS200500622-1

Date: June 2, 2020

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Applicant :Shenzhen Honcell Energy Co., Ltd.

Address :612B, Bldg. A, Weidonglong Industrial Zone, Meilong Ave.194#, Longhua New District, Shenzhen, 518109, China.

Report on the submitted sample said to be:

Sample Name : Lithium-ion Polymer Battery

Model No. : HCP322545ZC

Sample Received Date : May 29, 2020

Test Period : May 29, 2020 to June 2, 2020

Test Site : Building D, No.2, Jinyuyuan Mansion, No.18, Industrial West Road, Songshan Lake High-tech Industrial Development Zone, Dongguan, Guangdong, China

Test Requested	Result
1 As specified by the client, to determine Pb, Cd, Hg, Cr(VI), PBBs & PBDEs, DIBP, BBP, DBP, DEHP content in the submitted sample in accordance with EU Directive 2011/65/EU (ROHS 2.0)&(EU)2015/863	Pass

***** FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S)*****

Tested by: Barry Peng

Reviewed by: Ailis Ma

Approved by: Ailis Ma
Lab manager

Date : 2020.06.02





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Test Result:

1.1 EU Directive 2011/65/EU (RoHS, Previously 2002/95/EC) - XRF

Method: With reference to IEC 62321-3-1:2013

Analysis was performed by X-ray Fluorescence Spectrometry (XRF)

No.	Specimen Description	Result(s)				
		Br	Pb	Hg	Cd	Cr
1	Silvery metal	NC	BL	BL	BL	BL
2	Silvery metal	NC	BL	BL	BL	BL
3	Yellow plastic	BL	BL	BL	BL	BL
4	Yellow plastic	BL	BL	BL	BL	BL
5	Black electronic wire	BL	BL	BL	BL	BL
6	Pink electronic wire	BL	BL	BL	BL	BL
7	Silvery metal	NC	BL	BL	BL	BL
8	White plastic	BL	BL	BL	BL	BL
9	PCB	BL	BL	BL	BL	BL
10	Chip IC	BL	BL	BL	BL	BL
11	Chip resistor	BL	BL	BL	BL	BL
12	Chip capacitor	BL	BL	BL	BL	BL

- Note:
- BL = Below Limit by XRF analysis
 - OL = Over Limit by XRF analysis
 - IN = Inconclusive (questionable, need further chemical analysis)
 - NC = Not Conducted
 - 1% = 10000 mg/kg = 10000 ppm



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Element	Unit	Polymer	Metal	Composite Material
Cd	mg/kg	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	mg/kg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Hg	mg/kg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Br	mg/kg	$BL \leq (300-3\sigma) < X$	--	$BL \leq (250-3\sigma) < X$
Cr	mg/kg	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

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

BL = Below Limit by XRF analysis

OL = Over Limit by XRF analysis

X = Inconclusive

LOD = Limit of Detection

(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 EU Directive 2011/65/EU Annex II

RoHS Restricted Substances	Maximum Concentration Value (by weight in homogenous materials)
Lead (Pb)	0.1%
Cadmium (Cd)	0.01%
Mercury (Hg)	0.1%
Hexavalent Chromium (Cr VI)	0.1%
Polybrominated biphenyls (PBBs)	0.1%
Polybrominated Diphenylethers (PBDEs)	0.1%

Dongguan ZRLK Testing Technology Co., Ltd.
 Building D, No.2, Jinyuyuan Mansion, No.18, Industrial West Road, Songshan Lake High-tech Industrial Development Zone, Dongguan, Guangdong, China



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1.2 Phthalates Content

Method: With reference to IEC 62321-8-2017

Analysis was performed by Gas Chromatography Mass Spectrometer (GC-MS)

Test Item(s)	No.3	No.4	No.5	No.6	No.8	MDL	Client's Limit
Di-iso-butyl ortho-phthalate(DIBP)	ND	ND	ND	ND	ND	0.01%	0.1%
Dibutyl Phthalate (DBP)	ND	ND	ND	ND	ND	0.01%	0.1%
Benzylbutyl Phthalate (BBP)	ND	ND	ND	ND	ND	0.01%	0.1%
Bis-(2-ethylhexyl) Phthalate (DEHP)	ND	ND	ND	ND	ND	0.01%	0.1%

Test Item(s)	No.9	No.10	No.11	No.12	/	MDL	Client's Limit
Di-iso-butyl ortho-phthalate(DIBP)	ND	ND	ND	ND	/	0.01%	0.1%
Dibutyl Phthalate (DBP)	ND	ND	ND	ND	/	0.01%	0.1%
Benzylbutyl Phthalate (BBP)	ND	ND	ND	ND	/	0.01%	0.1%
Bis-(2-ethylhexyl) Phthalate (DEHP)	ND	ND	ND	ND	/	0.01%	0.1%

- Note:
- % = percentage by weight
 - ND = lower than MDL
 - MDL = Method Detection Limit
 - 1% = 10000 mg/kg = 10000 ppm



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Specimen Description:

- | | |
|----|-----------------------|
| 3 | Yellow plastic |
| 4 | Yellow plastic |
| 5 | Black electronic wire |
| 6 | Pink electronic wire |
| 8 | White plastic |
| 9 | PCB |
| 10 | Chip IC |
| 11 | Chip resistor |
| 12 | Chip capacitor |

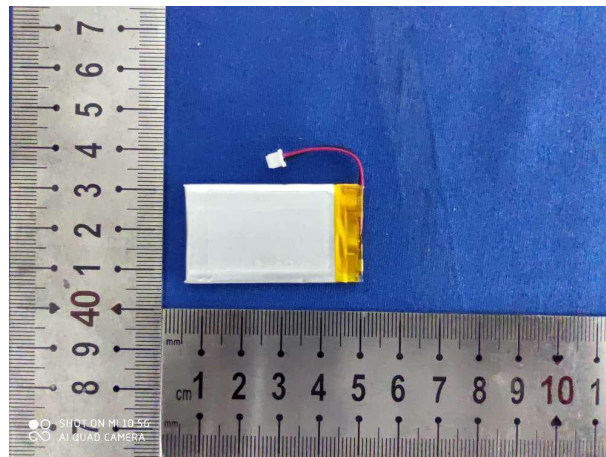
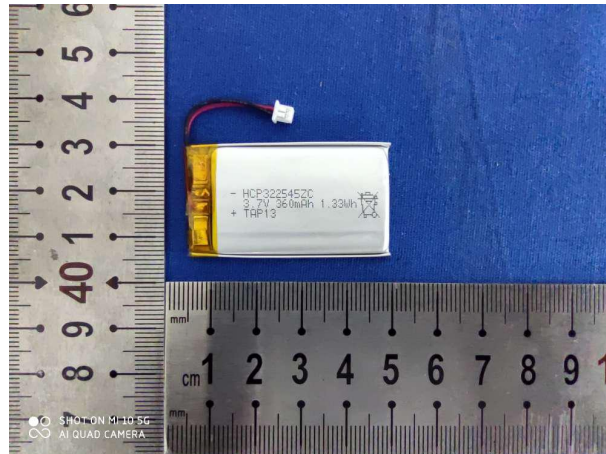
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Photo of the sample

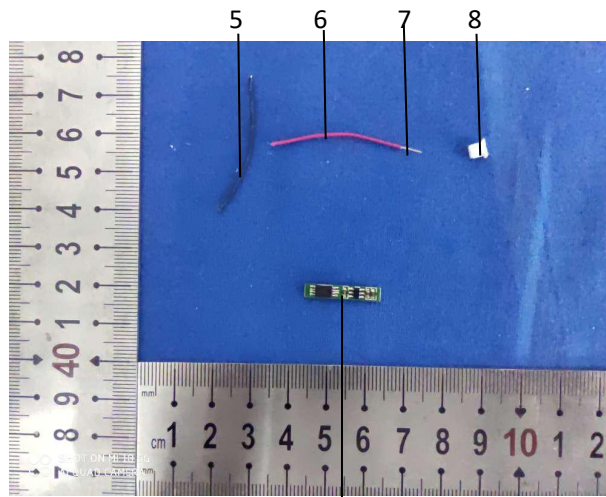
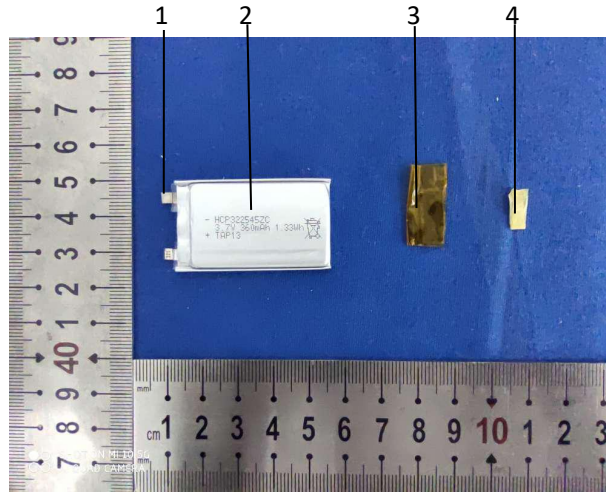


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***** End of report *****