

Test Report

Report No.: AGC04094190104-001

Date: Jan.18, 2019

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Applicant: Xindao B.V.

Address: P.O. Box 3082, 2280 GB, Rijswijk, The Netherlands

Report on the submitted sample(s) said to be:

Sample Name: 4.000 mAh wireless charging powerbank

Sample Model: P324.87

Sample Received Date: Jan.10, 2019

Testing Period: Jan.10, 2019 to Jan.18, 2019

Test site: 1,6/F.,Building 2,No.1-4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Baoan District, Shenzhen, Guangdong, China

Test Requested: Please refer to following page(s).

Test Method: Please refer to following page(s).

Test Result: Please refer to following page(s).

Approved by: 

Liulinwen, Lewis

Technical Director



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Test Requested:

Conclusion

As specified by client, to determine the Pb, Cd, Hg, Cr⁶⁺, PBBs, PBDEs content in the submitted sample in accordance with EU RoHS Directive 2011/65/EU(RoHS) and its amendment directives on XRF and Chemical Method.

Pass

Test Methods:

A: Screening by X-ray Fluorescence Spectrometry (XRF) :With reference to IEC 62321-3-1:2013 Ed 1.0 Screening – Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry

B: Chemical test:

Test Item	Test Method	Measuring Instrument	MDL
Cadmium (Cd)	IEC 62321-5:2013 Ed 1.0	ICP-OES	2 mg/kg
Lead (Pb)	IEC 62321-5:2013 Ed 1.0	ICP-OES	2 mg/kg
Mercury (Hg)	IEC 62321-4:2013+A1:2017 Ed 1.1	ICP-OES	2 mg/kg
Non-metal Hexavalent Chromium (Cr ⁶⁺)	IEC 62321-7-2:2017 Ed 1.0	UV-Vis	1 mg/kg
Metal Hexavalent Chromium (Cr ⁶⁺)	IEC 62321-7-1:2015 Ed 1.0	UV-Vis	/
PBBs/PBDEs	IEC 62321-6:2015 Ed 1.0	GC-MS	5 mg/kg

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Test Results:
A、EU RoHS Directive 2011/65/EU and its amendment directives on XRF

Seq. No.	Tested Part(s)	Results(mg/kg)				
		Cd	Pb	Hg	Cr	Br
1	Silver aluminum shell(outer shell)	BL	BL	BL	BL	-
2	Gray rubber pad (outer shell)	BL	BL	BL	BL	BL
3	Gray plastic frame(outer shell)	BL	BL	BL	BL	BL
4	Black plastic sheet(outer shell)	BL	BL	BL	BL	X*
5	Silver screw(outer shell)	BL	BL	BL	BL	-
6	Coil wire jacket(induction coil)	BL	BL	BL	BL	BL
7	Green tape(induction coil)	BL	BL	BL	BL	BL
8	Wire core(induction coil)	BL	BL	BL	BL	-
9	Black ceramic(induction coil)	BL	BL	BL	BL	BL
10	Black thermistor head(thermistor) (circuit board)	BL	BL	BL	BL	BL
11	Enameled wire(thermistor) (circuit board)	BL	BL	BL	BL	-
12	Tin solder(circuit board) (circuit board)	BL	BL	BL	BL	-
13	PCB board(circuit board)	BL	BL	BL	BL	BL
14	Metal film capacitor(circuit board)	BL	BL	BL	BL	BL
15	IC body(IC)(circuit board)	BL	BL	BL	BL	BL
16	Tin plating pin(IC)(circuit board)	BL	BL	BL	BL	-
17	Glass diode(circuit board)	BL	OL*	BL	BL	BL
18	Chip resistor(circuit board)	BL	BL	BL	BL	BL
19	Chip capacitor(circuit board)	BL	BL	BL	BL	BL
20	Black wire jacket(connecting line)	BL	BL	BL	BL	BL
21	Green enameled wire(connecting line)	BL	BL	BL	BL	-
22	Red enameled wire(connecting line)	BL	BL	BL	BL	-
23	Black wire jacket(connecting line)	BL	BL	BL	BL	BL
24	Wire core(connecting line)	BL	BL	BL	BL	-

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Seq. No.	Tested Part(s)	Results(mg/kg)				
		Cd	Pb	Hg	Cr	Br
25	Red wire jacket(connecting line)	BL	BL	BL	BL	BL
26	Gray inductance(circuit board)	BL	BL	BL	X*	BL
27	Black plastic button(touch switch)(circuit board)	BL	BL	BL	BL	BL
28	White plastic seat(touch switch)(circuit board)	BL	BL	BL	BL	BL
29	Chip LED(circuit board)	BL	BL	BL	BL	BL
30	Tin solder(circuit board)	BL	BL	BL	BL	-
31	PCB board(circuit board)	BL	BL	BL	BL	X*
32	IC body(IC)(circuit board)	BL	BL	BL	BL	BL
33	Tin plating pin(IC)(circuit board)	BL	BL	BL	BL	-
34	USB metal joint(USB joint)(circuit board)	BL	BL	BL	BL	-
35	Black plastic contact(USB joint)(circuit board)	BL	BL	BL	BL	BL
36	Contact pin(USB joint)(circuit board)	BL	BL	BL	BL	-
37	Micro metal joint(micro joint)(circuit board)	BL	BL	BL	BL	-
38	Black plastic joint(micro joint)(circuit board)	BL	BL	BL	BL	BL
39	Pin(micro joint)(circuit board)	BL	BL	BL	BL	-
40	Brown tape(battery)	BL	BL	BL	BL	BL
41	Blue tape(battery)	BL	BL	BL	BL	BL
42	Black double-sided adhesive(battery)	BL	BL	BL	BL	BL
43	Electric core(battery)	BL	BL	BL	BL	BL
44	Red wire jacket(battery)	BL	BL	BL	BL	BL
45	Tin solder(battery)	BL	BL	BL	BL	-
46	Black wire jacket(battery)	BL	BL	BL	BL	BL
Different						
47	Blue metal aluminum shell(outer shell)	BL	BL	BL	BL	-

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Element	Unit	Non-metal	Metal	Composite Material
Cd	mg/kg	$BL \leq 70-3\sigma < X$ $< 130+3\sigma \leq OL$	$BL \leq 70-3\sigma < X$ $< 130+3\sigma \leq OL$	$BL \leq 50-3\sigma < X$ $< 150+3\sigma \leq OL$
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	$BL \leq 700-3\sigma < X$ $< 1300+3\sigma \leq OL$	$BL \leq 700-3\sigma < X$ $< 1300+3\sigma \leq OL$	$BL \leq 500-3\sigma < X$ $< 1500+3\sigma \leq OL$
Cr	mg/kg	$BL \leq 700-3\sigma < X$	$BL \leq 700-3\sigma < X$	$BL \leq 500-3\sigma < X$
Br	mg/kg	$BL \leq 300-3\sigma < X$	-	$BL \leq 250-3\sigma < X$

Note: BL= Below Limit

OL= Over limited

X= Inconclusive

“-“= Not regulated

*= Scanning by XRF and detected by chemical method. The test results of chemical method please refer to next pages.

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Remark:

- i Results were obtained by XRF for primary scanning, 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 above warning value according to IEC 62321-3-1:2013 Ed 1.0.
- ii The XRF scanning test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.
- iii The maximum permissible limit is quoted from RoHS directive 2011/65/EU:

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

Disclaimers:

This XRF Scanning 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 scanning 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.

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B、The Test Results of Chemical Method:

1) The Test Results of Pb

Test Item(s)	Unit	Result(s)
		17
Lead(Pb)	mg/kg	14074*

Note: N.D. = Not Detected or less than MDL

mg/kg = parts per million

MDL = Method Detection Limit

* = As claimed by the material declaration submitted by the client, the materials of the sample No.17 is glass, according to the ROHS 2011/65 / EU, lead in glass of electronic components is exempted.

2) The Test Results of non-metal Cr⁶⁺

Test Item(s)	Unit	Result(s)	Limit
		26	
Hexavalent Chromium(Cr ⁶⁺)	mg/kg	N.D.	1000

Note: N.D. = Not Detected or less than MDL

mg/kg = parts per million

MDL = Method Detection Limit

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3) The Test Results of PBBs & PBDEs

Unit: mg/kg

Item(s)	MDL	Result(s)		Limit
		4	31	
Polybrominated Biphenyls (PBBs)				
Monobromobiphenyl	5	N.D.	N.D.	Total PBBs Content <1000
Dibromobiphenyl	5	N.D.	N.D.	
Tribromobiphenyl	5	N.D.	N.D.	
Tetrabromobiphenyl	5	N.D.	N.D.	
Pentabromobiphenyl	5	N.D.	N.D.	
Hexabromobiphenyl	5	N.D.	N.D.	
Heptabromobiphenyl	5	N.D.	N.D.	
Octabromobiphenyl	5	N.D.	N.D.	
Nonabromodiphenyl	5	N.D.	N.D.	
Decabromodiphenyl	5	N.D.	N.D.	
Total content	/	N.D.	N.D.	
Polybrominated Diphenylethers (PBDEs)				
Monobromodiphenyl ether	5	N.D.	N.D.	Total PBDEs Content <1000
Dibromodiphenyl ether	5	N.D.	N.D.	
Tribromodiphenyl ether	5	N.D.	N.D.	
Tetrabromodiphenyl ether	5	N.D.	N.D.	
Pentabromodiphenyl ether	5	N.D.	N.D.	
Hexabromodiphenyl ether	5	N.D.	N.D.	
Heptabromodiphenyl ether	5	N.D.	N.D.	
Octabromodiphenyl ether	5	N.D.	N.D.	
Nonabromodiphenyl ether	5	N.D.	N.D.	
Decabromodiphenyl ether	5	N.D.	N.D.	
Total content	/	N.D.	N.D.	
Conclusion	/	Pass	Pass	/

Note: N.D. = Not Detected or less than MDL
 mg/kg = parts per million
 MDL = Method Detection Limit

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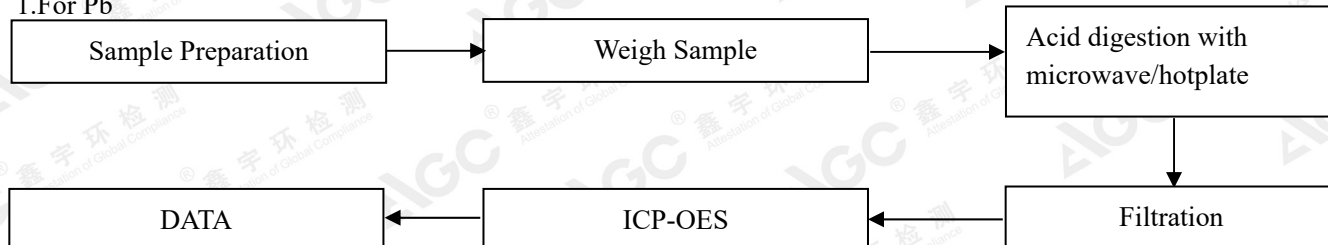
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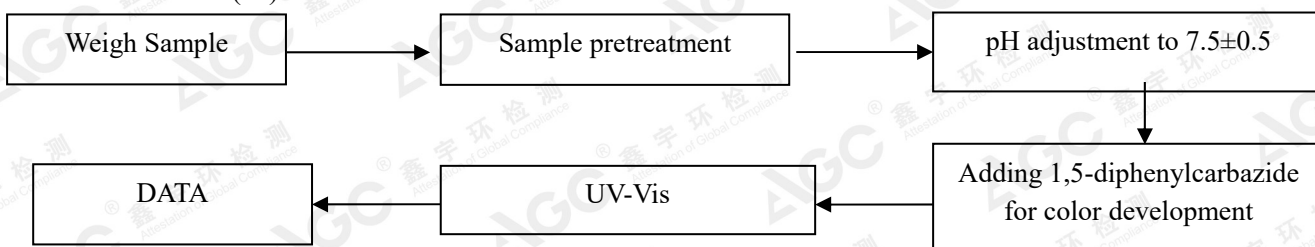
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Test Flow Chart

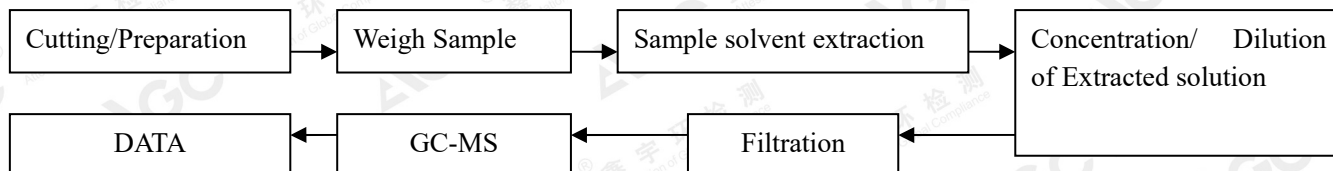
1.For Pb



2.For non-metal Cr(VI)



3.For PBBs & PBDEs



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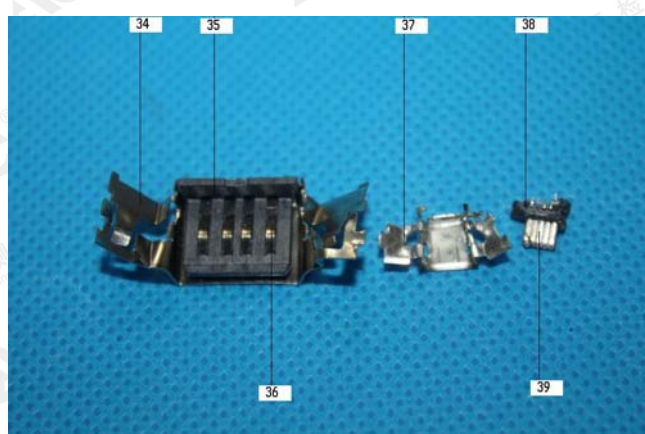
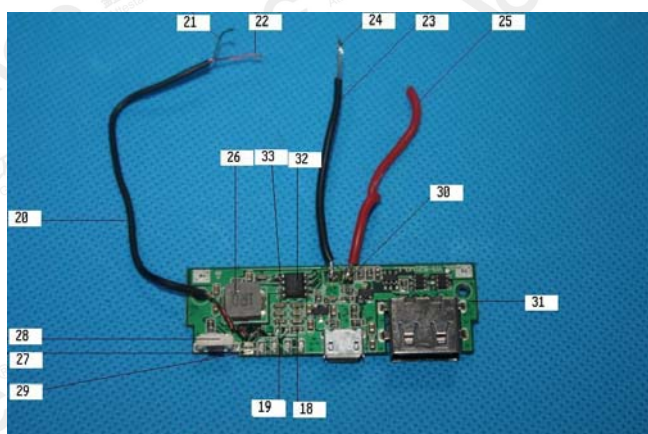
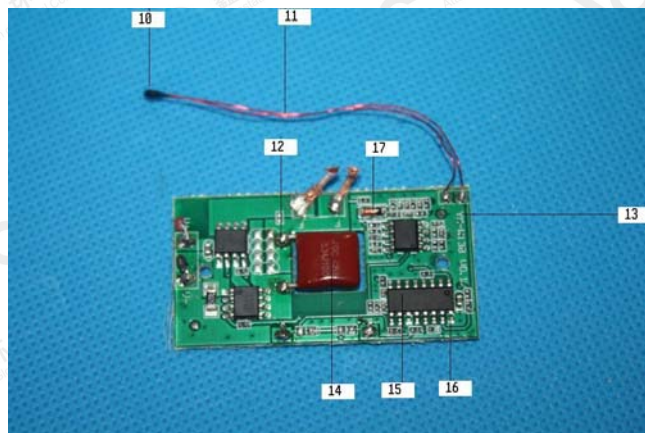
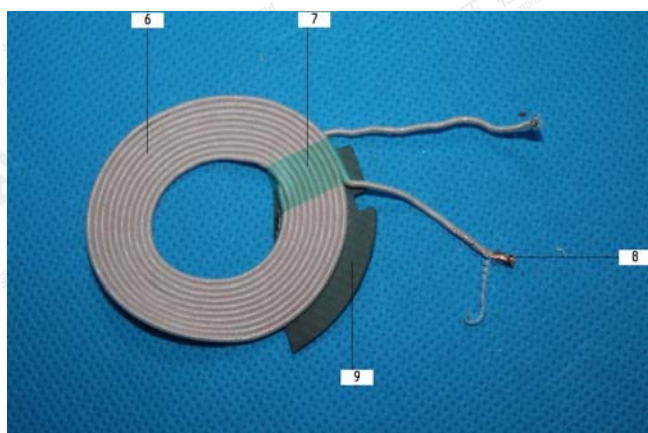
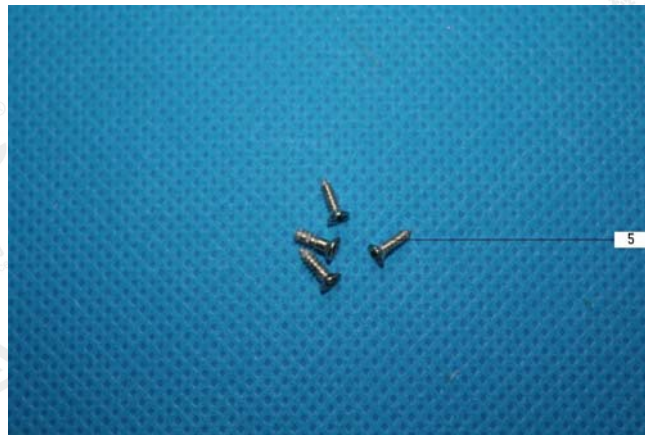
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The photo of the sample



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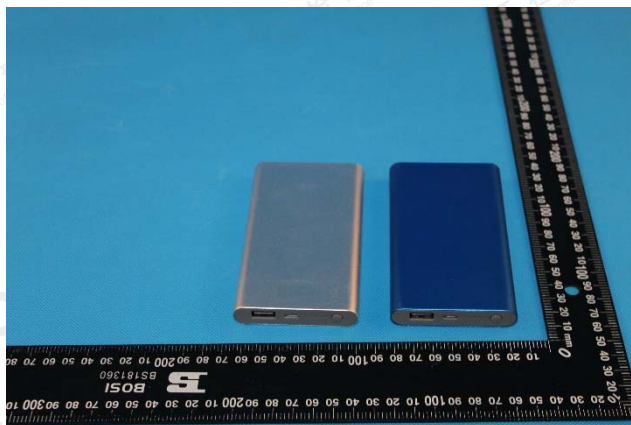
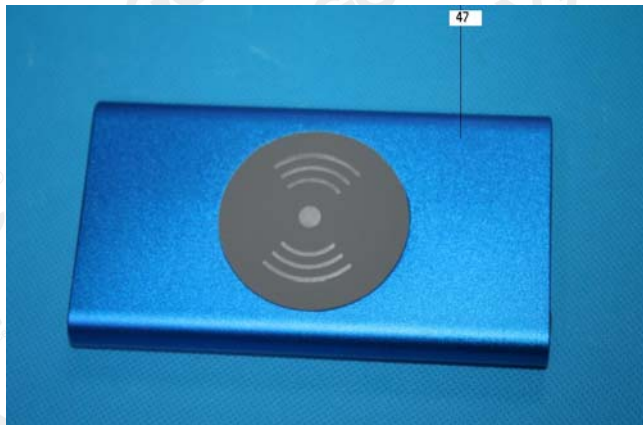
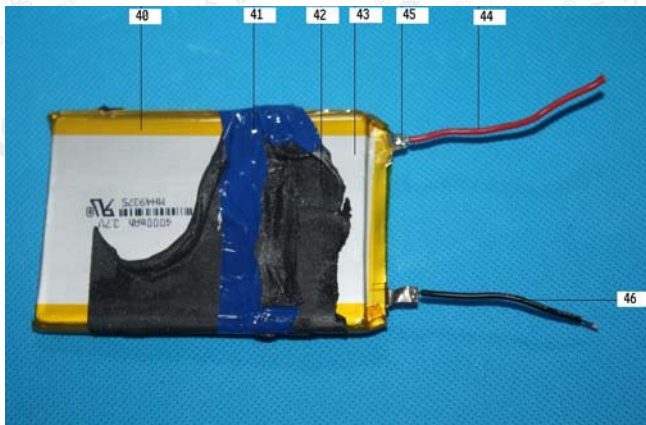
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