



# TEST REPORT

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**Applicant Name:** ZHIWEI ROBOTICS CORP.  
**Applicant Address:** ROOM 603, PU SOFT BUILDING, 2 BOYUN ROAD, PUDONG NEW AREA, SHANGHAI  
**Date of Submission:** SEP 16, 2022  
**Test Period:** SEP 16, 2022 TO OCT 10, 2022  
**Sample Description:** UNIHAKER  
**Manufacturer :** CHENGDU GEEKER TECHNOLOGY CO., LTD/成都极趣科技有限公司  
**Style No. :** DFR0706 **Sample Size:** 2

RT/ Daisy Cai

## REMARK

If there are questions or concerns on this report, please contact the following persons:

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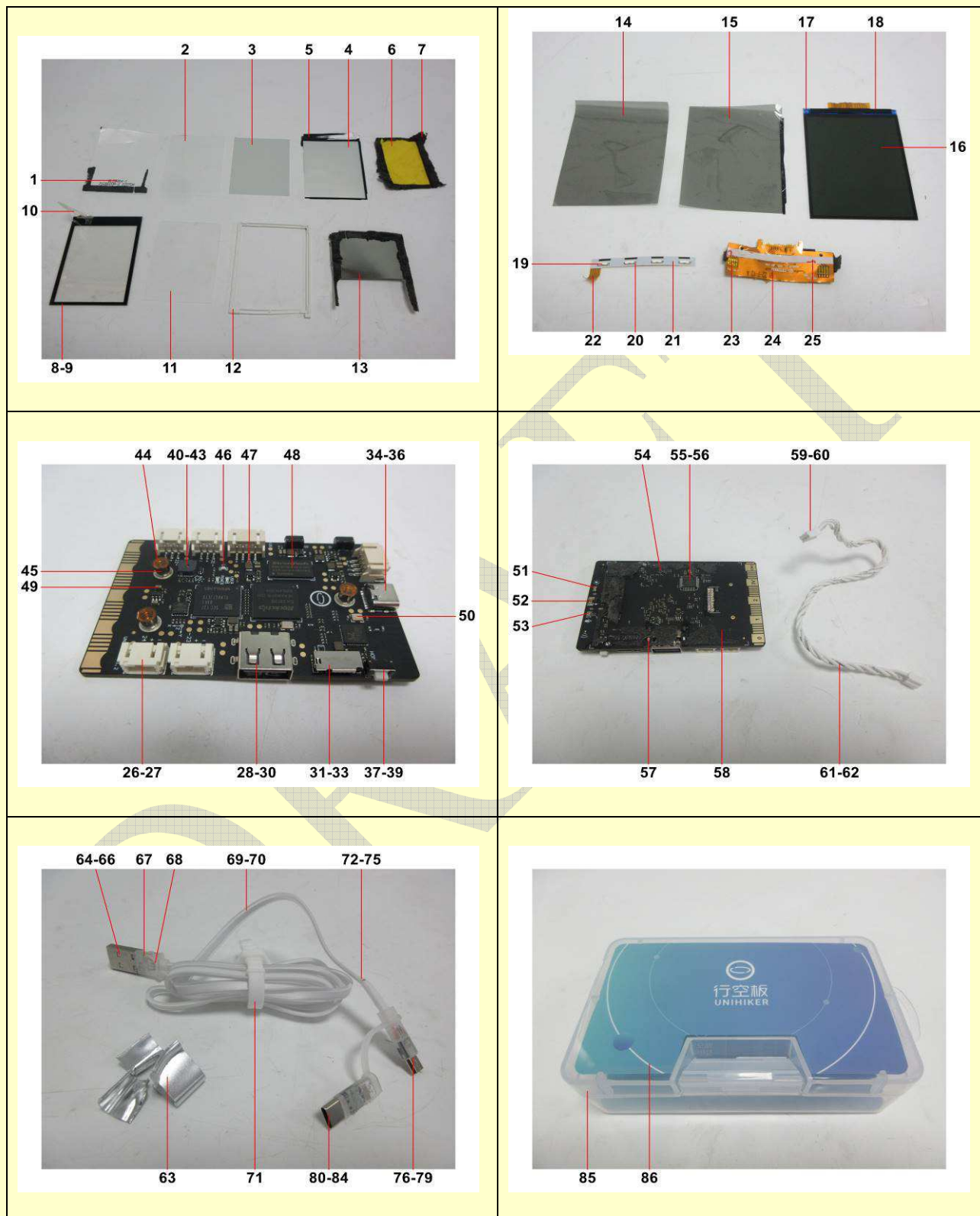
<b>SUMMARY OF TEST RESULTS</b>
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TEST REQUESTED	CONCLUSION	REMARK
European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendment Directive (EU)2015/863	PASS	-

**Photo of the Submitted Sample**



**Photo of Test Item(s)**



**Component Description List**

Test Item(s)	Component Description(s)	Location	Style(s)
1	Black printed white plastic	Diaphragm, display screen	-
2	Translucent/white plastic	Diaphragm, display screen	-
3	Silver coated translucent plastic	Diaphragm, display screen	-
4	Silver/translucent plastic	Diaphragm, display screen	-
5	Black plastic	Adhesive tape, display screen	-
6	Yellow/translucent plastic	Adhesive tape, display screen	-
7	Black foam	Foam, display screen	-
8	Black coated transparent glass	Display screen	-
9	Grey coated transparent plastic	Diaphragm, display screen	-
10	Transparent adhesive	Adhesive, display screen	-
11	Transparent plastic	Board, display screen	-
12	White plastic	Frame, diaphragm, display screen	-
13	Silvery metal	Holder, display screen	-
14	Grey/translucent plastic	Diaphragm, display screen	-
15	Grey/translucent plastic	Diaphragm, display screen	-
16	Black coated transparent glass	Display screen	-
17	Blue glue	Glue, display screen	-
18	Black foam	Foam, display screen	-
19	White body	SMD LED, FPC, display screen	-
20	Silvery solder	Solder, FPC, display screen	-
21	Light blue/black plastic	Adhesive tape, FPC, display screen	-
22	Black/brown FPC	FPC, display screen	-
23	Silvery solder	Solder, FPC, display screen	-
24	Brown FPC	FPC, display screen	-
25	Black printed white paper	Sticker, FPC, display screen	-
26	Beige plastic	Socket, PCB	-
27	Silvery metal	Pin, socket, PCB	-
28	Silvery metal	Contact plate, USB plug, PCB	-
29	Silvery metal	Pin, USB plug, PCB	-
30	Black plastic	Pin holder, USB plug, PCB	-
31	Silvery metal	Contact plate, card slot, PCB	-
32	Silvery metal	Pin, card slot, PCB	-
33	Black plastic	Pin holder, card slot, PCB	-
34	Silvery metal	Contact plate, type c plug, PCB	-
35	Silvery metal	Pin, type c plug, PCB	-
36	Black plastic	Pin holder, type c plug, PCB	-
37	White plastic	Switch, PCB	-
38	Black plastic	Switch, PCB	-

**Component Description List**

Test Item(s)	Component Description(s)	Location	Style(s)
39	Silvery metal	Switch, PCB	-
40	Black plastic	Case, buzzer, PCB	-
41	Silvery metal	Contact plate, buzzer, PCB	-
42	Coppery metal	Coil, buzzer, PCB	-
43	Silvery metal	Coil holder, buzzer, PCB	-
44	Yellow/translucent plastic	Film, nut, PCB	-
45	Silvery metal	Nut, PCB	-
46	White body	SMD LED, PCB	-
47	Grey/coppery metal	Inductor, PCB	-
48	Black body	SMD IC, PCB	-
49	Brown body	SMD capacitor, PCB	-
50	Golden/silvery body	SMD EC, PCB	-
51	Beige body	SMD LED, PCB	-
52	Black printed white body	SMD resistor, PCB	-
53	Silvery body	SMD EC, PCB	-
54	Black body	SMD diode, PCB	-
55	Black body	IC, PCB	-
56	Silvery/coppery metal	Plate, IC, PCB	-
57	Silvery solder	Solder, PCB	-
58	Black PCB	PCB	-
59	White plastic	Socket, cable	-
60	Silvery metal	Pin, socket, cable	-
61	White soft plastic	Wire insulation, cable	-
62	Silvery metal	Wire, cable	-
63	Silvery metal	Case, plug, cable	-
64	Silvery metal	Contact plate, USB plug, cable	-
65	Silvery metal	Pin, USB plug, cable	-
66	White plastic	Pin holder, USB plug, cable	-
67	Silvery solder	Solder, USB plug, cable	-
68	Translucent soft plastic	Connector, USB plug, cable	-
69	Transparent soft plastic	Wire jacket, cable	-
70	White soft plastic	Wire insulation, cable	-
71	White soft plastic	Buckle, cable	-
72	Red metal	Wire, cable	-
73	Green metal	Wire, cable	-
74	Blue metal	Wire, cable	-
75	Coppery metal	Wire, cable	-
76	Silvery metal	Contact plate, micro USB plug, cable	-
77	Silvery metal	Pin, micro USB plug, cable	-



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Test Item(s)	Component Description(s)	Location	Style(s)
78	Black plastic	Pin holder, micro USB plug, cable	-
79	Silvery solder	Solder, micro USB plug, cable	-
80	Silvery metal	Contact plate, type c plug, cable	-
81	Golden metal	Pin, type c plug, cable	-
82	Black plastic	Pin holder, type c plug, cable	-
83	Silvery solder	Solder, PCB, type c plug, cable	-
84	Green PCB	PCB, type c plug, cable	-
85	Transparent plastic	Box	-
86	Clear laminated multi-color printed white paper	Board, box	-





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### TEST RESULT

#### Compliance Test – European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendment Directive (EU)2015/863

Test Method : See Appendix.

-	Result (s)									
Parameter	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Chromium VI (Cr VI)	PBBs & PBDEs	BBP	DBP	DEHP	DIBP	Conclusion
Unit	mg/kg									
Test Item(s)	-	-	-	-	-	-	-	-	-	-
1	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
2	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
3	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
4	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
5	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
6	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
7	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
8	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
9	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
10	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
11	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
12	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
13	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
14	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
15	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
16	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
17	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
18	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
19	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
20	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
21	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
22	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
23	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
24	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
25	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
26	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
27	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
28	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS





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### TEST RESULT

-	Result (s)									
Parameter	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Chromium VI (Cr VI)	PBBs & PBDEs	BBP	DBP	DEHP	DIBP	Conclusion
Unit	mg/kg									-
Test Item(s)	-	-	-	-	-	-	-	-	-	-
29	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
30	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
31	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
32	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
33	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
34	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
35	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
36	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
37	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
38	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
39	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
40	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
41	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
42	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
43	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
44	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
45	28080*	BL	BL	BL	NA	NA	NA	NA	NA	EXEMPTED#
46	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
47	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
48	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
49	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
50	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
51	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
52	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
53	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
54	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
55	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
56	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS



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### TEST RESULT

-	Result (s)									
Parameter	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Chromium VI (Cr VI)	PBBs & PBDEs	BBP	DBP	DEHP	DIBP	Conclusion
Unit	mg/kg									-
Test Item(s)	-	-	-	-	-	-	-	-	-	-
57	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
58	BL	BL	BL	BL	BL*	BL*	BL*	BL*	BL*	PASS
59	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
60	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
61	BL	BL	BL	BL	BL	BL*	150*	BL*	BL*	PASS
62	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
63	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
64	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
65	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
66	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
67	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
68	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
69	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
70	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
71	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
72	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
73	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
74	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
75	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
76	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
77	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
78	BL	BL	BL	ND*	BL	BL*	BL*	BL*	BL*	PASS
79	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
80	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
81	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
82	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
83	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
84	BL	BL	BL	BL	BL*	BL*	BL*	BL*	BL*	PASS



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**TEST RESULT**

-	Result (s)									
Parameter	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Chromium VI (Cr VI)	PBBs & PBDEs	BBP	DBP	DEHP	DIBP	Conclusion
Unit	mg/kg									
Test Item(s)	-	-	-	-	-	-	-	-	-	-
85	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS
86	BL	BL	BL	BL	BL	BL*	BL*	BL*	BL*	PASS

Note / Key:

BL = Below limit

OL = Over limit

ND = Not detected

NA = Not applicable

mg/kg = milligram(s) per kilogram = ppm = part(s) per million

Detection Limit : See Appendix.

Remark:

- \*Denotes as reported result(s) was (were) performed by wet chemistry method. Others were screened by XRF. For XRF screening, the result(s) of Cr VI was (were) reported as total chromium and the result(s) of PBBs and PBDEs was (were) reported as total bromine. Also, the XRF result(s) may be different to the actual content based on various factors including, but not limit to, sample size, thickness, area, non-uniformity composition, surface flatness.
- \*Result(s) of Cr VI for metallic material(s) was (were) expressed in term of positive and negative. Negative means the absence of Cr VI on the tested areas and the result(s) was (were) regarded as in compliance with European Council Directive 2011/65/EU, Article 4(1). While, positive means the presence of Cr VI on tested areas and the result(s) was (were) regarded as in conflict with European Council Directive 2011/65/EU, Article 4(1).
- According to European Council Directive 2011/65/EU, Article 5 "Adaptation of the Annexes to scientific and technical progress", exemption(s) should be granted to the materials and components of Test Item(s) in the lists in Annexes III and IV of this directive.
- #According to Annex III of European Council Directive 2011/65/EU, exemptions were granted a few materials and Clause 6(c) is reiterated here "Copper alloy containing up to 4 % lead by weight". Test Item(s) 45 was claimed as is by client (received as is). Therefore, this (these) Test Item(s) containing the found lead level should be exempted.

### APPENDIX

List of Analytes and their Corresponding Test Methods, Detection Limit and Maximum Allowable Limit [ Compliance Test for European Parliament and Council Directive 2011/65/EU ] :						
No.	Name of Analytes	Detection Limit(mg/kg)				Maximum Allowable Limit (mg/kg)
		X-ray fluorescence (XRF) <sup>[a]</sup>			Wet Chemistry	
		Plastic	Metal/Glass/ Ceramic	Others		
1	Lead (Pb)	100	200	200	10 <sup>[b]</sup>	1000
2	Cadmium (Cd)	50	50	50	10 <sup>[b]</sup>	100
3	Mercury (Hg)	100	200	200	10 <sup>[c]</sup>	1000
4	Chromium (Cr)	100	200	200	NA	NA
5	Chromium VI (Cr VI)	NA	NA	NA	See <sup>[d]</sup> /10 <sup>[e]</sup> /3 <sup>[f,g]</sup>	1000 / Negative <sup>[h]</sup>
6	Bromine (Br)	200	NA	200	NA	NA
7	Polybromobiphenyls (PBBs) - Bromobiphenyl (MonoBB) - Dibromobiphenyl (DiBB) - Tribromobiphenyl (TriBB) - Tetrabromobiphenyl (TetraBB) - Pentabromobiphenyl (PentaBB) - Hexabromobiphenyl (HexaBB) - Heptabromobiphenyl (HeptaBB) - Octabromobiphenyl (OctaBB) - Nonabromobiphenyl (NonaBB) - Decabromobiphenyl (DecaBB)	NA	NA	NA	Each 50 <sup>[i]</sup>	Sum 1000
8	Polybromodiphenyl ethers (PBDEs) - Bromodiphenyl ether (MonoBDE) - Dibromodiphenyl ether (DiBDE) - Tribromodiphenyl ether (TriBDE) - Tetrabromodiphenyl ether (TetraBDE) - Pentabromodiphenyl ether (PentaBDE) - Hexabromodiphenyl ether (HexaBDE) - Heptabromodiphenyl ether (HeptaBDE) - Octabromodiphenyl ether (OctaBDE) - Nonabromodiphenyl ether (NonaBDE) - Decabromodiphenyl ether (DecaBDE)	NA	NA	NA	Each 50 <sup>[i]</sup>	Sum 1000
9	- Dibutyl phthalate (DBP) - Butyl benzyl phthalate (BBP) - Di-2-ethylhexyl phthalate (DEHP) - Diisobutyl phthalate (DIBP)	NA	NA	NA	Each 50 <sup>[j]</sup>	Each 1000

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NA = Not applicable IEC = International Electrotechnical Commission

- [a] Test method with reference to International Standard IEC 62321-3-1: 2013.
- [b] Test method with reference to International Standard IEC 62321-5: 2013.
- [c] Test method with reference to International Standard IEC 62321-4:2013+A1:2017.
- [d] Metal - Test method with reference to International Standard IEC 62321-7-1: 2015.
- [e] Polymers and Electronics - Test method with reference to European Standard EN 62321-7-2: 2017.
- [f] Leather - Test method International Standard ISO 17075-1:2017.
- [g] Other Than Metal, Leather, Polymers and Electronics - Test method with reference to International Standard ISO 17075-1:2017.
- Result(s) of Cr VI for metallic material(s) was (were) expressed in term of positive and negative. Negative means the absence of Cr VI on the tested areas and the result(s) was (were) regarded as in compliance with European Parliament and Council Directive 2011/65/EU, Article 4(1). While, positive means the presence of Cr VI on tested areas and the result(s) was (were) regarded as in conflict with European Parliament and Council Directive 2011/65/EU, Article 4(1).
- [h]
- [i] Test method with reference to International Standard IEC 62321-6: 2015.
- [j] Test method with reference to International Standard IEC 62321-8: 2017.

**Testing Approach [ Compliance Test for European Parliament and Council Directive 2011/65/EU ] :**

The testing approach was with reference to the following document(s).

- 1 International Standards IEC 62321-1: 2013 and IEC 62321-2: 2013
- 2 "RoHS Enforcement Guidance Document Version 1" by EU RoHS Enforcement Authorities Informal Network. (May 2006)
- 3 "RoHS Regulations - Government Guidance Notes" by United Kingdom Department for Business Innovation & Skills. (February 2011)
- 4 "Final Report to RoHS substances (Hg, Pb, Cr(VI), Cd, PBB and PBDE) in electrical and electronic equipment in Belgium" by Belgium Federal Public Service Health, Food Chain Safety and Environment. (November 2005)

**\*\*\* End of Report \*\*\***