



中国认可
国际互认
检测
TESTING
CNAS L6478



TEST REPORT

Report No : WTF24F09225472C
Applicant : Mid Ocean Brands B.V.
Address : 7-F., Kings Tower, 111 King Lam Street, Cheung Sha Wan,
Kowloon, Hong Kong
Manufacturer : 118051
Sample Name : Magnetic wireless charger
Sample Model : MO2521
Test Requested : With reference to EU RoHS Directive 2011/65/EU and its
amendment Directive EU 2015/863, to determine the Lead,
Mercury, Cadmium, Hexavalent Chromium, PBBs and PBDEs,
DBP, BBP, DEHP, DIBP content in the submitted sample.
Test Method : Refer to next page (s)
Test Conclusion : **Pass**
Date of Receipt sample : 2024-10-22
Testing period : 2024-10-22 to 2024-10-29
Date of Issue : 2024-10-29
Test Result : Refer to next page (s)

Prepared By:

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Signed for and on behalf of
Waltek Testing Group (Foshan) Co., Ltd.

Swing Liang



WTF24F09225472C

Swing Liang
Waltek Testing Group (Foshan) Co., Ltd.
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Sample photo:



MO2521



MO2521

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Test Results:**1. Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs and PBDEs**

Test Method/Equipment:

- 1) With reference to IEC 62321-2:2021, disassembly, disjunction and mechanical sample preparation
- 2) With reference to IEC 62321-3-1:2013, screening –Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry
- 3) With reference to IEC 62321-4:2013+AMD1:2017 CSV, determination of Mercury by ICP-OES
- 4) With reference to IEC 62321-5:2013, determination of Lead and Cadmium by ICP-OES
- 5) With reference to IEC 62321-7-2: 2017 and IEC 62321-7-1: 2015, determination of Hexavalent Chromium by UV-Vis
- 6) With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
1	Black plastic shell	BL	BL	BL	BL	BL	NA
2	Black plastic sheet with grey printing and adhesive	BL	BL	BL	BL	BL	NA
3	Dark grey magnetic core	BL	BL	BL	BL	--	Cr ⁶⁺ : ND
4	Copper varnished wire	BL	BL	BL	BL	BL	NA
5	Silvery metal shell	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
6	Silvery metal pin	BL	BL	BL	BL	--	NA
7	Grey plastic core	BL	BL	BL	BL	BL	NA
8	Chip diode	BL	BL	BL	BL	BL	NA
9	Chip audion	BL	BL	BL	BL	BL	NA
10	Chip capacitor	BL	BL	BL	BL	BL	NA
11	Dark grey magnetic sheet	BL	BL	BL	BL	--	NA
12	Copper varnished wire	BL	BL	BL	BL	BL	NA
13	Yellow transparent plastic adhesive tape	BL	BL	BL	BL	BL	NA



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Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
14	Chip LED	BL	BL	BL	BL	BL	NA
15	Chip IC	BL	BL	BL	BL	BL	NA
16	Chip resistor	BL	BL	BL	BL	BL	NA
17	Green PCB	BL	BL	BL	BL	IN	PBBs: ND PBDEs: ND
18	Solder	BL	BL	BL	BL	--	NA
19	Black sponge with adhesive	BL	BL	BL	BL	BL	NA
20	Black plastic sheet with adhesive	BL	BL	BL	BL	BL	NA
21	Red varnished wire	BL	BL	BL	BL	BL	NA
22	Green varnished wire	BL	BL	BL	BL	BL	NA
23	White fibrous wire	BL	BL	BL	BL	BL	NA
24	Silvery magnetic sheet	BL	BL	BL	BL	--	NA
25	Silvery metal ring	BL	BL	BL	BL	--	Cr ⁶⁺ : Negative
26	Silvery metal sheet	BL	BL	BL	BL	--	NA
27	White plastic tube	BL	BL	BL	BL	BL	NA
28	Black plastic shell	BL	BL	BL	BL	BL	NA
29	Silvery metal screw	BL	BL	BL	BL	--	NA
30	White plastic wire covering	BL	BL	BL	BL	BL	NA
31	Green plastic wire covering	BL	BL	BL	BL	BL	NA



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Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
32	Black plastic jacket	BL	BL	BL	BL	BL	NA
33	White plastic core	BL	BL	BL	BL	BL	NA
34	Silvery metal pin	BL	BL	BL	BL	--	NA
35	Solder	BL	BL	BL	BL	--	NA
36	Coppery metal wire	BL	BL	BL	BL	--	NA
37	Red plastic wire covering	BL	BL	BL	BL	BL	NA
38	Black plastic wire covering	BL	BL	BL	BL	BL	NA
39	Black plastic wire jacket	BL	BL	BL	BL	BL	NA
40	Silvery metal shell	BL	BL	BL	BL	--	NA
41	Blue PCB	BL	BL	BL	BL	IN	PBBs: ND PBDEs: ND
42	Solder	BL	BL	BL	BL	--	NA
43	Silvery metal shell	BL	BL	BL	IN	--	Cr ⁶⁺ : Negative
44	Silvery metal pin	BL	BL	BL	BL	--	NA
45	Grey plastic core	BL	BL	BL	BL	BL	NA
56	Chip resistor	BL	BL	BL	BL	BL	NA



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2. Phthalates

Test Method/Equipment:

1) With reference to IEC 62321-8:2017, determination of DBP, BBP, DEHP, DIBP by GC-MS

Serial No.	Part No.	Result (mg/kg)			
		DBP	BBP	DEHP	DIBP
T01	1+2+7+27+28 [△]	ND	ND	ND	ND
T03	3	--	--	--	--
T04	4+12+21+22 [△]	ND	ND	ND	ND
T05	5	--	--	--	--
T06	6	--	--	--	--
T08	8+9+10+14+15 [△]	ND	ND	ND	ND
T11	11	--	--	--	--
T13	13+19+20 [△]	ND	ND	ND	ND
T16	16+46 [△]	ND	ND	ND	ND
T17	17+41 [△]	ND	ND	ND	ND
T18	18	--	--	--	--
T23	23	ND	ND	ND	ND
T24	24	--	--	--	--
T25	25	--	--	--	--
T26	26	--	--	--	--
T29	29	--	--	--	--
T30	30+31+32 [△]	ND	ND	133	ND
T33	33+45 [△]	ND	ND	ND	ND
T34	34	--	--	--	--
T35	35	--	--	--	--
T36	36	--	--	--	--
T37	37+38+39 [△]	ND	ND	ND	ND
T40	40	--	--	--	--
T42	42	--	--	--	--
T43	43	--	--	--	--
T44	44	--	--	--	--



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Remark:

- (1) Results are obtained by XRF for primary screening, and further chemical testing by ICP (for Cd, Pb, Hg), UV-VIS (for Cr⁶⁺) and GC-MS (for PBBs, PBDEs) is recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1: 2013 (unit: mg/kg)

Element	Polymer	Metal	Composite Materials
Cd	$ND \leq (70-3\sigma) < IN < (130+3\sigma) \leq OL$	$ND \leq (70-3\sigma) < IN < (130+3\sigma) \leq OL$	$LOD < IN < (150+3\sigma) \leq OL$
Pb	$ND \leq (700-3\sigma) < IN < (1300+3\sigma) \leq OL$	$ND \leq (700-3\sigma) < IN < (1300+3\sigma) \leq OL$	$ND \leq (500-3\sigma) < IN < (1500+3\sigma) \leq OL$
Hg	$ND \leq (700-3\sigma) < IN < (1300+3\sigma) \leq OL$	$ND \leq (700-3\sigma) < IN < (1300+3\sigma) \leq OL$	$ND \leq (500-3\sigma) < IN < (1500+3\sigma) \leq OL$
Cr	$ND \leq (700-3\sigma) < IN$	$ND \leq (700-3\sigma) < IN$	$ND \leq (500-3\sigma) < IN$
Br	$ND \leq (300-3\sigma) < IN$	--	$ND \leq (250-3\sigma) < IN$

ND= Below Limit

OL= Over Limit

LOD = Limit of Detection

-- = Not Regulated

- (2) "IN" expresses the inconclusive region, and further chemical testing to confirm whether it complies with the requirement of RoHS Directive.
- (3) The XRF screening test for RoHS elements – the reading may be different to the actual content in the sample be of non-uniformity composition.
- (4) mg/kg =milligram per kilogram=ppm, $\mu\text{g}/\text{cm}^2$ = Micrograms per square centimetre.
- (5) ND = Not Detected or lower than limit of quantitation.
- (6) NA = Not Applicable, as the XRF screening test result was below the limit or as the XRF screening directly determine that test result was over the limit, it was not need to conduct the wet chemical testing.
- (7) LOQ = Limit of quantitation.

Test Items	Pb	Cd	Hg	Cr ⁶⁺		PBB	PBDE	DBP	BBP	DEHP	DIBP
Units	mg/kg	mg/kg	mg/kg	mg/kg	$\mu\text{g}/\text{cm}^2$	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOQ	2	2	2	8	0.1	5	5	50	50	50	50

The LOQ for single compound of PBBs and PBDEs is 5mg/kg, LOQ of Cr⁶⁺ for polymer and composite sample is 8mg/kg and LOQ of Cr⁶⁺ for metal sample is 0.1 $\mu\text{g}/\text{cm}^2$.



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(8) RoHS Requirement

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr ⁶⁺)	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)
Dibutyl phthalate (DBP)	0.1% (1000 mg/kg)
Benzyl butyl phthalate (BBP)	0.1% (1000 mg/kg)
Di(2-ethylhexyl) phthalate (DEHP)	0.1% (1000 mg/kg)
Di-iso-butyl phthalate (DIBP)	0.1% (1000 mg/kg)

(9) According to IEC 62321-7-1:2015, determined of Cr⁶⁺ on metal sample by boiling water extraction test method, and result is shown as Positive/Negative.

Boiling water extraction:

Negative = Absence of Cr⁶⁺ coating, the detected concentration in boiling water extraction solution is less than 0.10µg/cm².

Positive = Presence of Cr⁶⁺ coating, the detected concentration in boiling water extraction solution is greater than 0.13µg/cm².

Information on storage conditions and production date of the tested sample is unavailable and thus Cr⁶⁺ results represent status of the sample at the time of testing.

(10) Abbreviation:

"Pb" denotes Lead, "Cd" denotes Cadmium, "Hg" denotes Mercury, "Cr" denotes Chromium, "Cr⁶⁺" denotes Hexavalent Chromium, "Br" denotes Bromine, "PBBs" denotes Total Polybrominated Biphenyls, "PBDEs" denotes Total Polybrominated Diphenyl Ethers.

"DBP" denotes Dibutyl phthalate, "BBP" denotes Benzyl butyl phthalate (BBP), "DEHP" denotes Bis(2-ethylhexyl)-phthalate, "DIBP" denotes Diisobutyl phthalate, "PHT" denotes Phthalates.

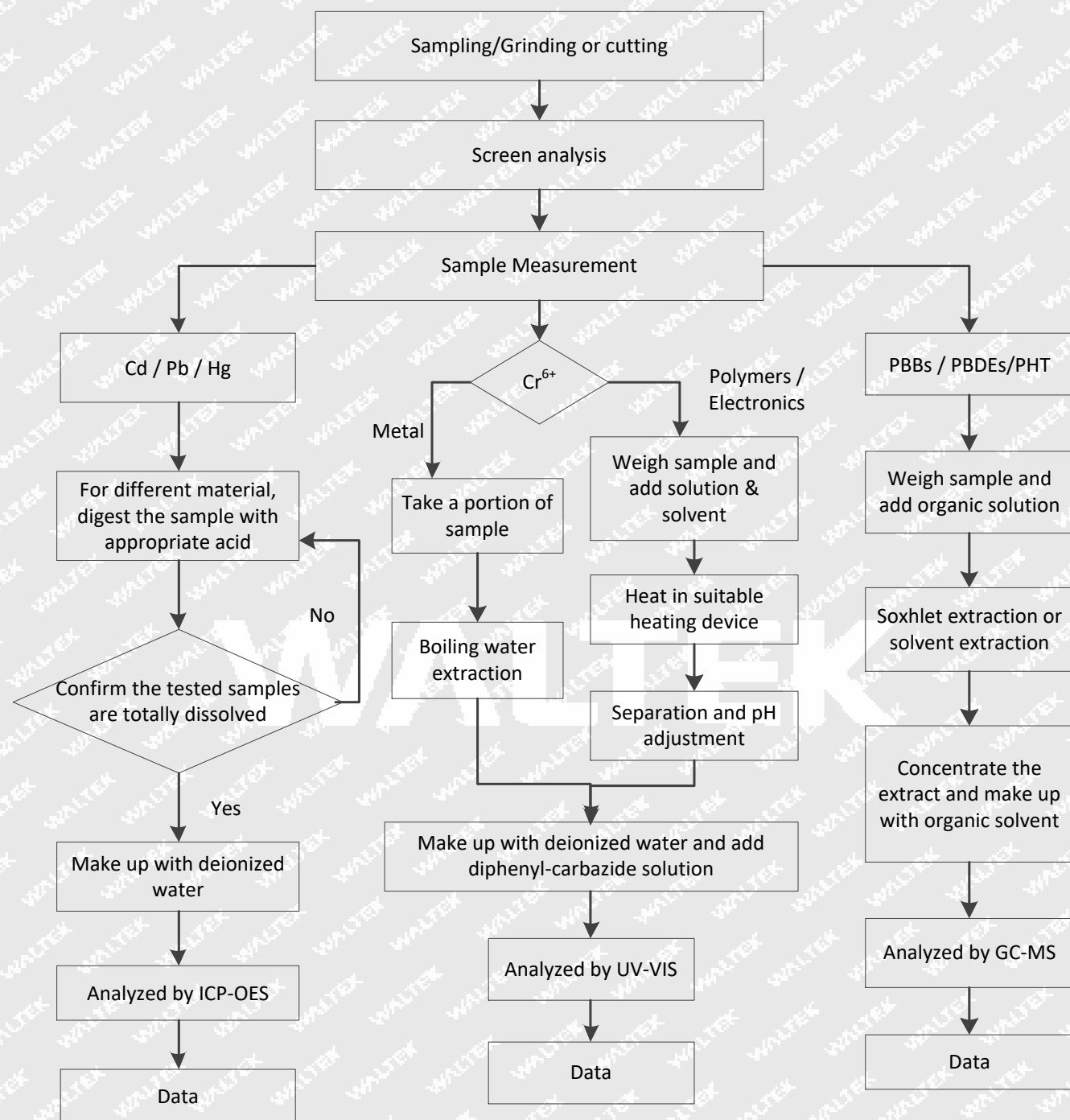
(11) "△"=As client's requirement, the testing was conducted based on mixed components. Results are calculated by the minimum weight of mixed components.



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Testing Flow chart:

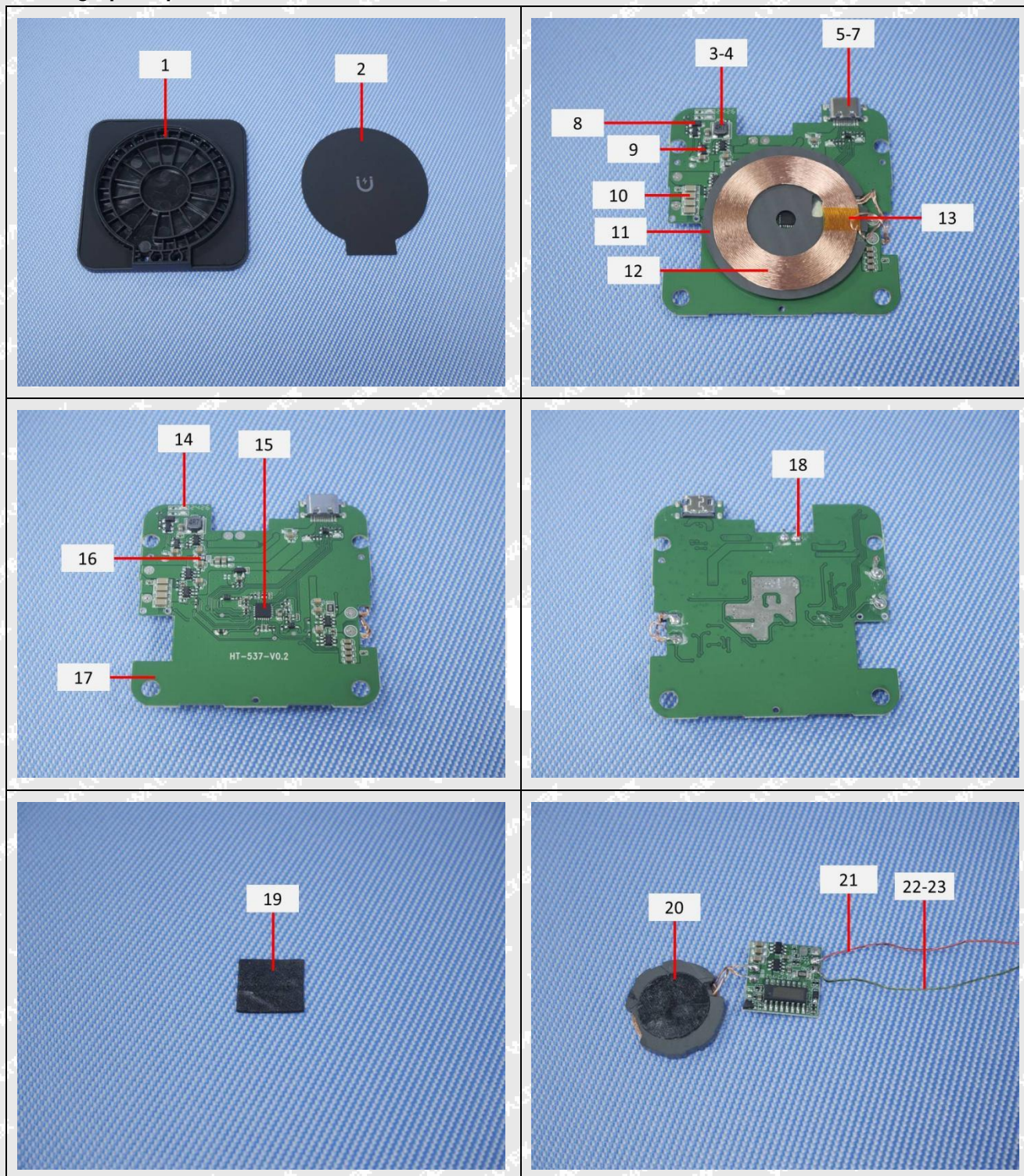




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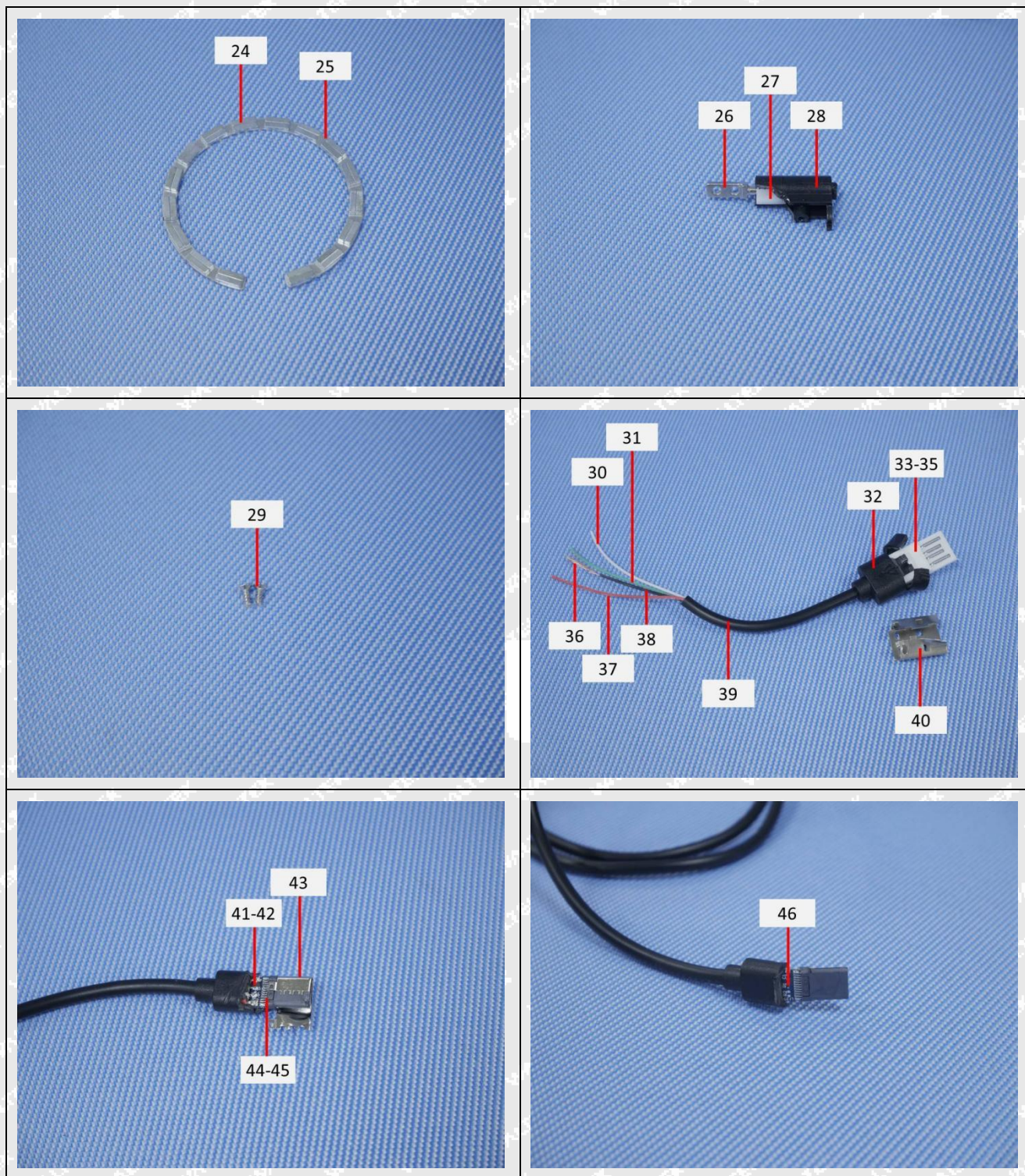
Photograph of parts tested:





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Remarks:

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===== End of Report =====

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