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检测
TESTING
CNAS L6478

TEST REPORT

Report No.	:	WTF24F06132190A1C
Applicant	:	Mid Ocean Brands B.V.
Address	:	7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong
Manufacturer	:	106613
Sample Name	:	Bottle with wireless speaker
Sample Model	:	MO2312
Test Requested	:	Refer to next page (s)
Test Method	:	Refer to next page (s)
Test Conclusion	:	Refer to next page (s)
Date of Receipt sample	:	2024-06-06 & 2024-06-26
Testing period	:	2024-06-06 to 2024-06-24 & 2024-06-26 to 2024-06-28
Date of Issue	:	2024-07-02
Test Result	:	Refer to next page (s)

Prepared By:
Waltek Testing Group (Foshan) Co., Ltd.
Address: No.13-19, 2/F., 2nd Building, Sunlink Machinery City, Xingye 4 Road, Guanglong Industrial Park, Chihua Neighborhood Committee, Chencun Town, Shunde District, Foshan, Guangdong, China
Tel:+86-757-23811398 Fax:+86-757-23811381 E-mail:info@waltek.com.cn

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

Swing.Liang

WTF24F06132190A1C

Summary:

Test Requested	Test Conclusion
In accordance with the RoHS Directive 2011/65/EU and its amendment (EU) No. 2015/863, to determine the 10 restricted substances content in the submitted sample.	**Pass** (Please refer to next pages for details)

Sample Photo(s):

Test Results:

1. Lead, Mercury, Cadmium, Hexavalent Chromium, PBBs and PBDEs

Test method:

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 wire jacket	BL	BL	BL	BL	BL	NA
2	Black plastic jacket（USB plug）	BL	BL	BL	BL	BL	NA
3	Black plastic jacket（Type-C plug）	BL	BL	BL	BL	BL	NA
4	White plastic core（USB plug）	BL	BL	BL	BL	BL	NA
5	Silvery metal pin（USB plug）	BL	BL	BL	IN	--	Cr^{6+} : Negative
6	Silvery metal shell（USB plug）	BL	BL	BL	BL	--	NA
7	Solder（USB plug）	BL	BL	BL	BL	--	NA
8	Coppery metal wire	BL	BL	BL	BL	--	NA
9	Black plastic wire covering	BL	BL	BL	BL	BL	NA
10	Red plastic wire covering	BL	BL	BL	BL	BL	NA
11	Silvery metal shell（Type-C plug）	BL	BL	BL	IN	--	Cr^{6+} : Negative
12	Black plastic core（Type-C plug）	BL	BL	BL	BL	BL	NA
13	Silvery metal pin（Type-C plug）	BL	BL	BL	IN	--	Cr^{6+} : Negative
14	Golden metal pin（Type-C plug）	BL	BL	BL	BL	--	NA
15	Solder（Type-C plug）	BL	BL	BL	BL	--	NA

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
16	Red PCB（Type-C plug）	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
17	Black plastic shell	BL	BL	BL	BL	BL	NA
18	Black soft plastic sheet	BL	BL	BL	BL	BL	NA
19	Transparent double faced adhesive tape	BL	BL	BL	BL	BL	NA
20	Black coating	BL	BL	BL	BL	BL	NA
21	Silvery metal net without black coating	BL	BL	BL	BL	--	NA
22	Silvery metal screw	BL	BL	BL	IN	--	Cr^{6+} : Negative
23	Black soft plastic shell	BL	BL	BL	BL	BL	NA
24	Silvery metal screw	BL	BL	BL	IN	--	Cr^{6+} : Negative
25	Black soft plastic shell	BL	BL	BL	BL	BL	NA
26	Black plastic shell	BL	BL	BL	BL	BL	NA
27	Black plastic sheet	BL	BL	BL	BL	BL	NA
28	Black synthetic leather	BL	BL	BL	BL	BL	NA
29	Red dry glue	BL	BL	BL	BL	BL	NA
30	Yellow transparent plastic adhesive tape	BL	BL	BL	BL	BL	NA
31	Solder	BL	BL	BL	BL	--	NA
32	Silvery metal sheet	BL	BL	BL	BL	--	NA
33	Red plastic wire covering	BL	BL	BL	BL	BL	NA
34	Silvery metal wire	BL	BL	BL	BL	--	NA
35	White plastic wire covering	BL	BL	BL	BL	BL	NA

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
36	Black plastic wire covering	BL	BL	BL	BL	BL	NA
37	Chip resistor	BL	BL	BL	BL	BL	NA
38	Chip IC	BL	BL	BL	BL	BL	NA
39	Chip capacitor	BL	BL	BL	BL	BL	NA
40	Green PCB	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
41(R1)	Solder	BL	IN	BL	BL	--	Pb :190
42	Chip crystal oscillator	BL	**OL**	BL	BL	BL	***Pb : 3.07×10^4**
43	Chip IC	BL	BL	BL	BL	BL	NA
44	Chip resistor	BL	**OL**	BL	BL	BL	***Pb : 4.59×10^3**
45	Green PCB	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
46	Chip capacitor	BL	BL	BL	BL	BL	NA
47	Black plastic core（socket）	BL	BL	BL	BL	BL	NA
48	Silvery metal shell（socket）	BL	BL	BL	BL	--	NA
49	Silvery metal pin（socket）	BL	BL	BL	BL	--	NA
50	Black plastic part（button）	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
51	Off-white plastic shell（button）	BL	BL	BL	BL	BL	NA
52	Silvery metal shell（button）	BL	**OL**	BL	BL	--	**$^{\#}$Pb : 2.68×10^4**
53	Silvery metal sheet（button）	BL	BL	BL	IN	--	Cr^{6+} : Negative
54	Chip MIC	BL	BL	BL	BL	BL	NA
55	Black magnetic rim	BL	BL	BL	IN	--	Cr^{6+} : ND

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
56	Silvery metal shell	BL	BL	BL	IN	--	Cr^{6+} : Negative
57	White paper sheet	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
58	Solder	BL	BL	BL	BL	--	NA
59	Black plastic wire covering	BL	BL	BL	BL	BL	NA
60	Silvery metal rivet	BL	BL	BL	BL	--	NA
61	Red plastic wire covering	BL	BL	BL	BL	BL	NA
62	Silvery metal wire	BL	BL	BL	BL	--	NA
63	Brown paper tube	BL	BL	BL	BL	BL	NA
64	Black paper sheet	BL	BL	BL	BL	BL	NA
65	Coppery metal wire	BL	BL	BL	BL	--	NA
66	Brown net fabric	BL	BL	BL	BL	BL	NA
67	Black plastic cap	BL	BL	BL	BL	BL	NA
68	Black soft plastic handle	BL	BL	BL	BL	BL	NA
69	White soft plastic gasket	BL	BL	BL	BL	BL	NA
70	Black coating	BL	BL	BL	IN	BL	Cr^{6+} : ND
71	Silvery metal shell	BL	BL	BL	IN	--	Cr^{6+} : Negative

Remark:

(1) Results are obtained by EDXRF for primary screening, and further chemical testing by ICP (for Cd, Pb, Hg), UV-VIS (for Cr^{6+}) 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	BL ≤ (70-3σ) < IN < (130+3σ) ≤ OL	BL ≤ (70-3σ) < IN < (130+3σ) ≤ OL	LOD < IN < (150+3σ) ≤ OL
Pb	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (500-3σ) < IN < (1500+3σ) ≤ OL
Hg	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (500-3σ) < IN < (1500+3σ) ≤ OL
Cr	BL ≤ (700-3σ) < IN	BL ≤ (700-3σ) <IN	BL ≤ (500-3σ) < IN
Br	BL ≤ (300-3σ) < IN	--	BL ≤ (250-3σ) < IN

BL= 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, $\mu g/cm^2$= 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
Units	mg/kg	mg/kg	mg/kg	mg/kg	$\mu g/cm^2$	mg/kg	mg/kg
LOQ	2	2	2	8	0.1	5	5

The LOQ for single compound of PBBs and PBDEs is 5 mg/kg, LOQ of Cr^{6+} for polymer and composite sample is 8 mg/kg and LOQ of Cr^{6+} for metal sample is 0.1 $\mu g/cm^2$.

(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)

(9) According to IEC 62321-7-1:2015, determined of Cr^{6+} on metal sample by boiling water extraction test method, and result is shown as Positive/Negative.
Boiling water extraction:
Negative = Absence of Cr^{6+} coating, the detected concentration in boiling water extraction solution is less than 0.10 ug/cm^2.
Positive = Presence of Cr^{6+} coating, the detected concentration in boiling water extraction solution is greater than 0.13 ug/cm^2.
Information on storage conditions and production date of the tested sample is unavailable and thus Cr^{6+} 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, "Cr (VI)" denotes Hexavalent Chromium, "Br" denotes Bromine, "PBBs" denotes Total Polybrominated Biphenyls, "PBDEs" denotes Total Polybrominated Diphenyl Ethers.

(11) * = According to the declaration from client, the source of lead in test sample is from the glass or ceramic material of that electronic component which is exempted by Directive 2011/65/EU ANNEX III-7(c)-I.

(12) # = According to the declaration from client, the source of lead in test sample is from copper alloy while lead as copper alloy containing up to 4% lead by weight is exempted by Directive 2011/65/EU ANNEX III-6(c).

2. Phthalates:

Test method:

With reference to IEC 62321-8:2017, determination of Phthalates content by GC-MS.

Serial No.	Part No.	Result (mg/kg)			
		DBP	BBP	DEHP	DIBP
T01	1+2+3+9△	ND	ND	271	ND
T02	4+12+17+18+26△	ND	ND	ND	ND
T03	5	--	--	--	--
T04	6	--	--	--	--
T05	7	--	--	--	--
T06	8	--	--	--	--
T07	10+33+35△	ND	ND	ND	ND
T08	11	--	--	--	--
T09	13	--	--	--	--
T10	14	--	--	--	--
T11	15	--	--	--	--
T12	16+40+45△	ND	ND	ND	ND
T13	19	ND	ND	ND	ND
T14	20+70△	ND	ND	ND	ND
T15	21	--	--	--	--
T16	22	--	--	--	--
T17	23+25△	ND	ND	ND	ND
T18	24	--	--	--	--
T19	27+47+50+51+67△	ND	ND	ND	ND
T20	28	ND	ND	ND	ND
T21	29	ND	ND	ND	ND
T22	30	ND	ND	ND	ND

Serial No.	Part No.	Result (mg/kg)			
		DBP	BBP	DEHP	DIBP
T23	31	--	--	--	--
T24	32	--	--	--	--
T25	34	--	--	--	--
T26	36+59+61△	ND	ND	ND	ND
T27	37+38+39+42+43△	ND	ND	ND	ND
T28	41(R1)	--	--	--	--
T29	44+46+54△	ND	ND	ND	ND
T30	48	--	--	--	--
T31	49	--	--	--	--
T32	52	--	--	--	--
T33	53	--	--	--	--
T34	55	--	--	--	--
T35	56	--	--	--	--
T36	57+63+64△	ND	ND	ND	ND
T37	58	--	--	--	--
T38	60	--	--	--	--
T39	62	--	--	--	--
T40	65	--	--	--	--
T41	66	ND	ND	ND	ND
T42	68+69△	ND	ND	ND	ND
T43	71	--	--	--	--

Note:

(1) mg/kg = milligram per kilogram= ppm

(2) ND = Not Detected or lower than limit of quantitation.

(3) -- = Not Regulated.

(4) LOQ = Limit of quantitation.

Test Items	DBP	BBP	DEHP	DIBP
Units	mg/kg	mg/kg	mg/kg	mg/kg
LOQ	50	50	50	50

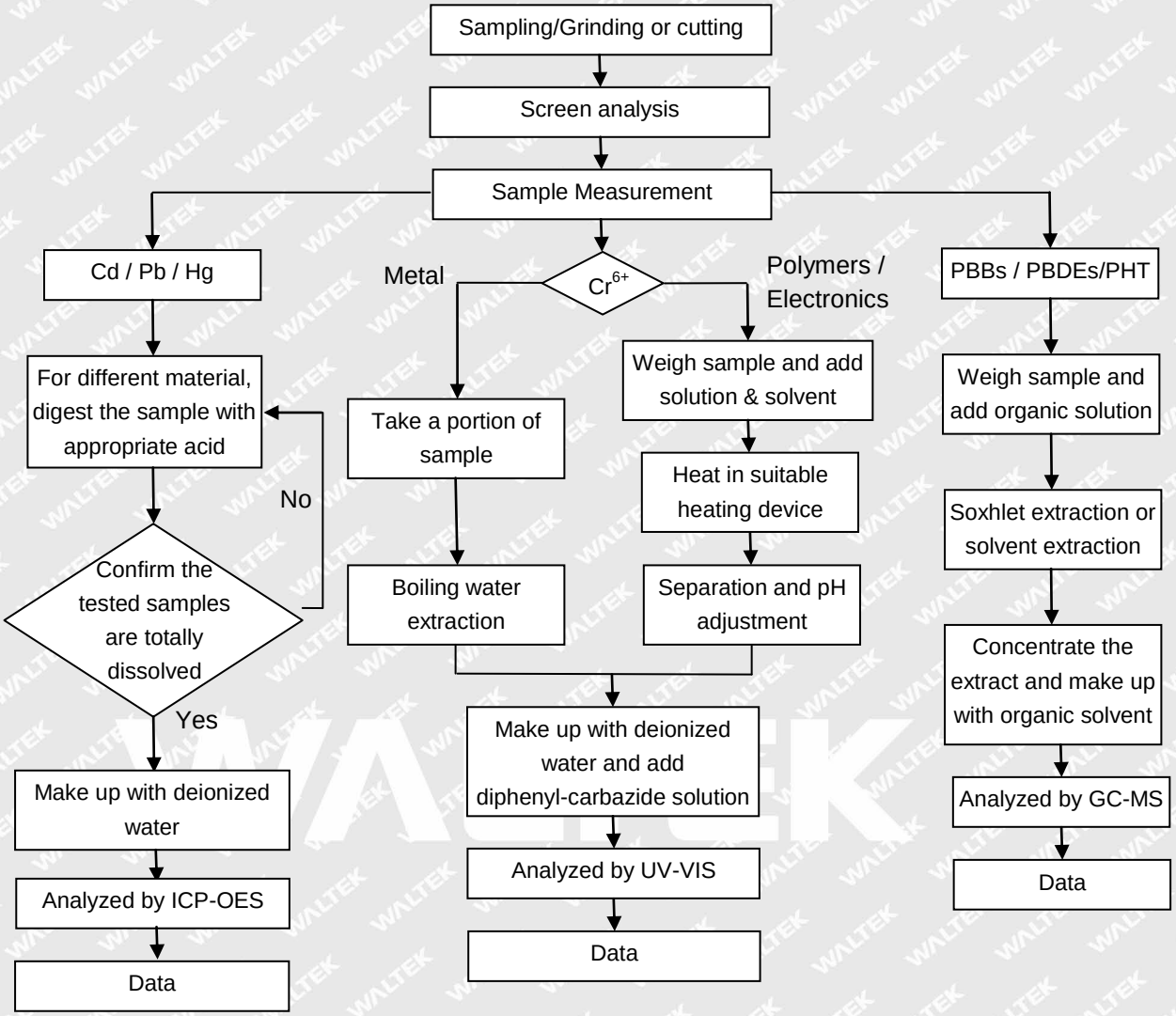
(5) Abbreviation:
"DBP" denotes Dibutyl phthalate, "BBP" denotes Benzyl butyl phthalate (BBP), "DEHP" denotes Bis(2-ethylhexyl)-phthalate, "DIBP" denotes Diisobutyl phthalate, "PHT" denotes Phthalates.

(6) RoHS requirement

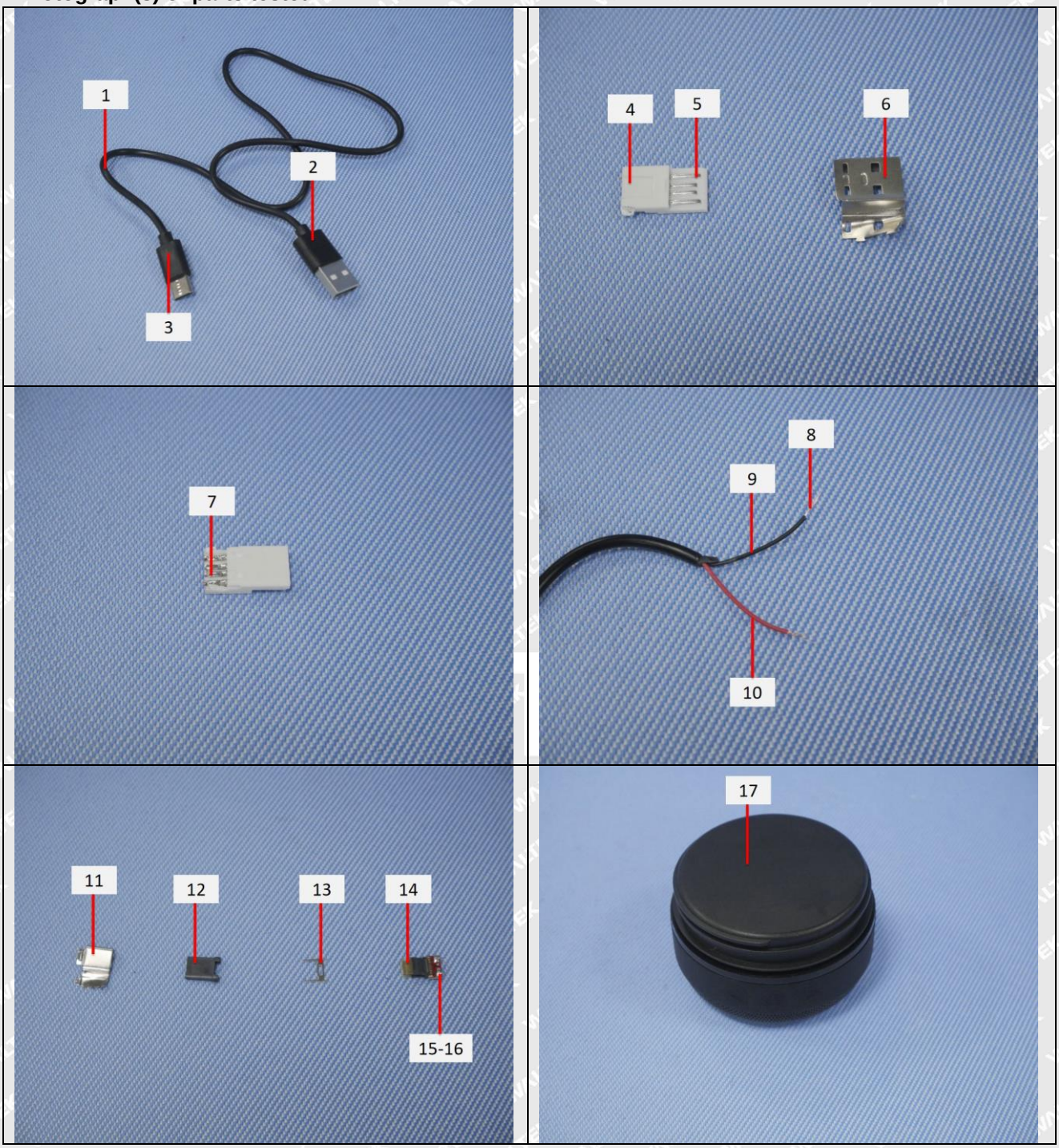
Restricted Substances	Limits
Dibutyl phthalate (DBP)	0.1% (1000 mg/kg)
Benzyl butyl phthalate (BBP)	0.1% (1000 mg/kg)
Di(2-ethylhexyl) phthalate (DEHP)	0.1% (1000 mg/kg)
Di-iso-butyl phthalate (DIBP)	0.1% (1000 mg/kg)

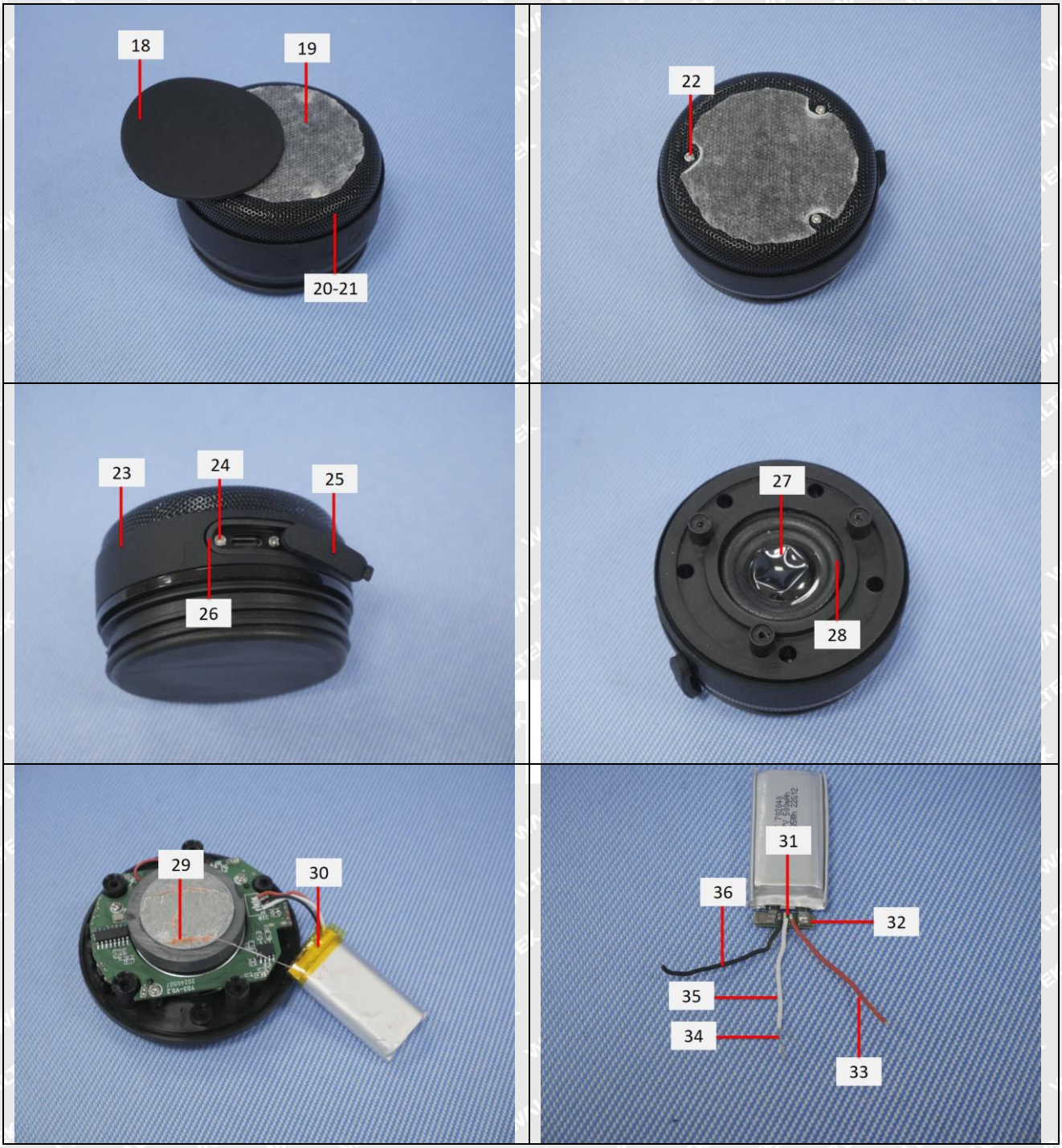
(7) "△"= As client's requirement, the testing was conducted based on mixed components.Results are calculated by the minimum weight of mixed components.

Measurement Flowchart:



Photograph(s) of parts tested:

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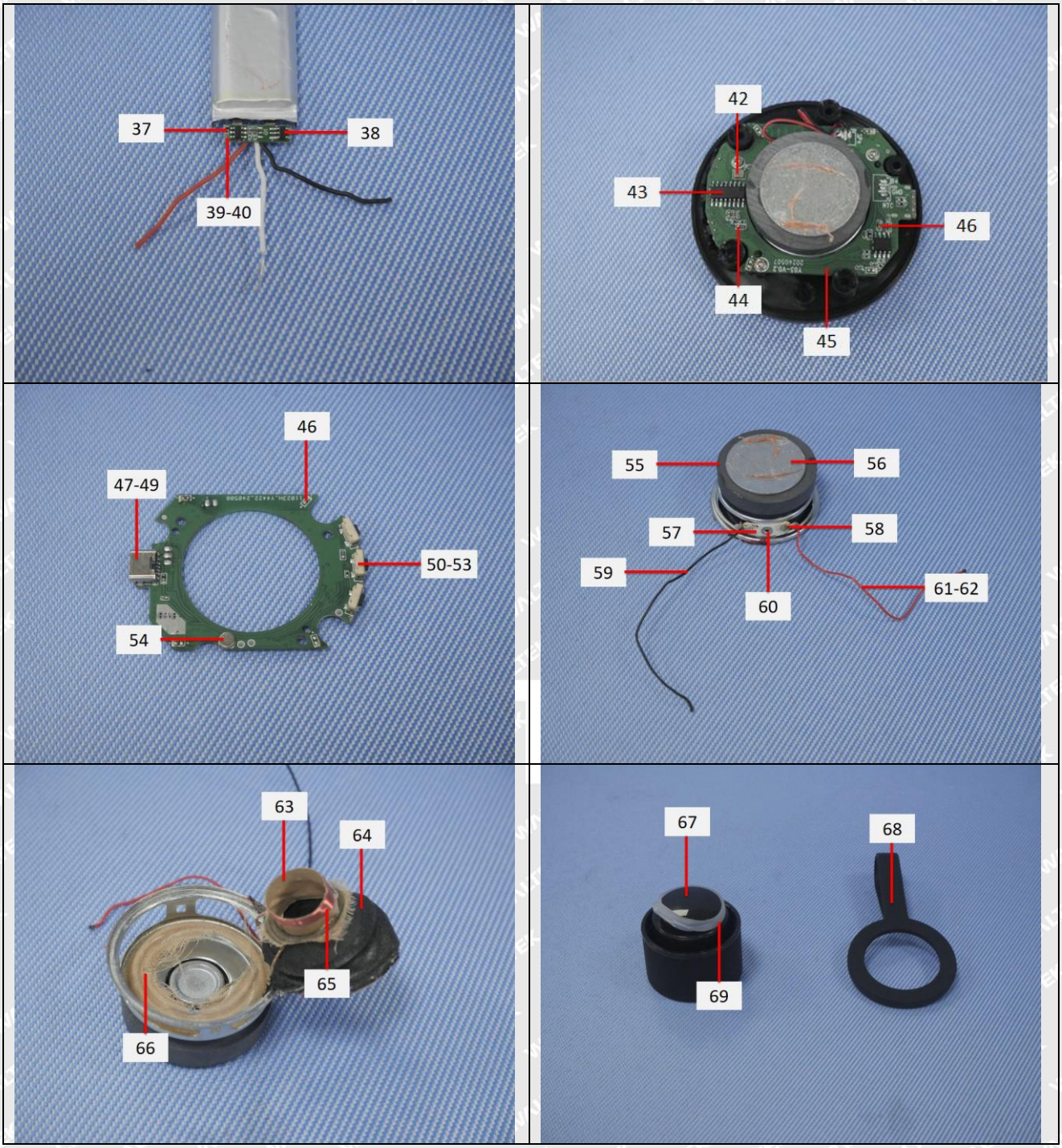
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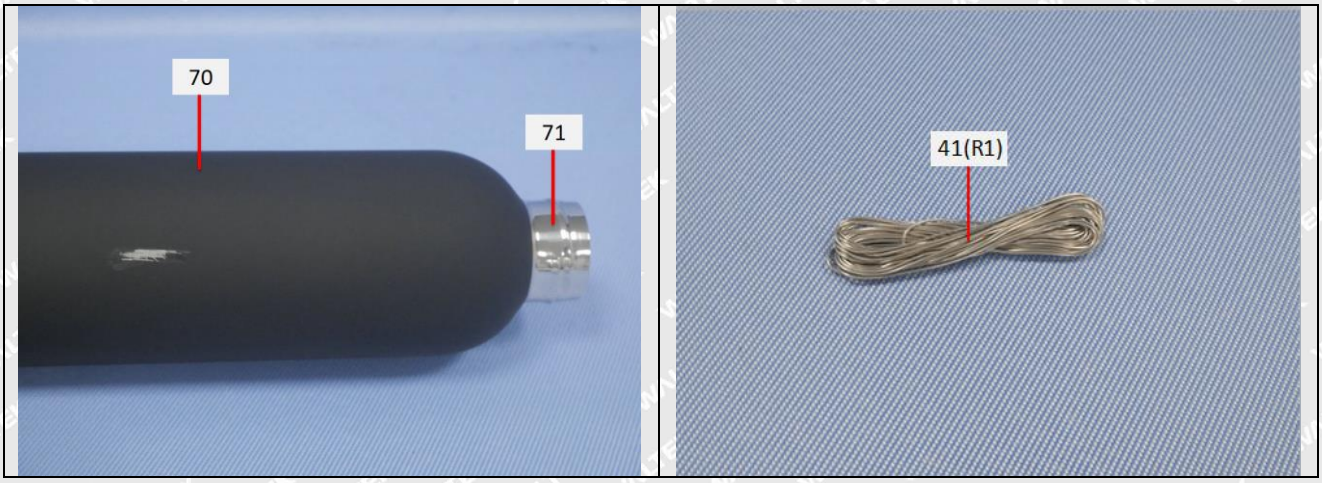

Remarks:

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