Test Report

Applicant	:	Mid Ocean Brands B.V.
Address	:	7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong.
Manufacturer	:	Mid Ocean Brands B.V.
Address	:	7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong.

The following sample(s) was /were submitted and identified on behalf of the clients as :

Sample Name	:	Wireless speaker
Sample Model	:	MO6847
Sample Received Date	:	Apr.12, 2024
Testing Period	:	Apr.12, 2024 To Apr.16, 2024
Test Requested	:	1. As specified by client ,to screen Lead(Pb),Cadmium(Cd),Mercury(Hg), Chromium(Cr)and Bromine(Br)in the submitted sample(s)by XRF. 2. As specified by client ,when screening results exceed the XRF screening limit in IEC62321:2013 Edition 1.0,further use of wet chemical methods are required to test Lead(Pb),Cadmium(Cd),Mercury(Hg),Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs),Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutylphthalate (DBP) , and Diisobutyl phthalate (DIBP) in the submitted sample(s).
Test Method	:	Please refer to next page(s).
Test Result	:	Please refer to next page(s).
Test Conclusion	:	The test results comply with the limits of RoHS 2.0 Directive (EU) 2015/863 and (EU)2017/2102 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of

Andy

Andy Zheng
Technical Director

Dongguan True Safety Testing Co., Ltd. Approve

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1.Pb, Cd, Cr(VI), Hg, PBBs&PBDEs

Test Method:

A.Disassembly, disjointment and mechanical sample preparation

—Ref. to IEC 62321-2:2021, Disassembly, disjointment and mechanical sample preparation.

B.With reference to IEC 62321-1:2013, tests were performed for the samples indicated by the photos in this report.

(1)Screening – Lead, mercury, cadmium, total chromium and total bromine

—Ref. to IEC 62321-3-1:2013, Screening for Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry.

(2)Wet chemical test method

Test Item(s)	Test Method	Test Equipment	Unit	MDL	Limit
Pb	IEC62321-5:2013	ICP-OES	mg/kg	10	1000
Cd	IEC62321-5:2013	ICP-OES	mg/kg	10	100
Hg	IEC 62321-4:2013/AMD1:2017	ICP-OES	mg/kg	10	1000
Cr(VI) (Metal)	IEC62321-7-1:2015	UV-Vis	$\mu g/cm^2$	0.1	0.13
Cr(VI) (Nonmetal)	IEC62321-7-2:2017	UV-Vis	mg/kg	10	1000
PBBs	IEC62321-6:2015	GC-MS	mg/kg	10	1000
PBDEs	IEC62321-6:2015	GC-MS	mg/kg	10	1000

PBBs		PBDEs	
Monobromobiphenyl	Hexabromobiphenyl	Monobromodiphenyl ether	Hexabromodiphenyl ether
Dibromobiphenyl	Heptabromobiphenyl	Dibromodiphenyl ether	Heptabromodiphenyl ether
Tribromobiphenyl	Octabromobiphenyl	Tribromodiphenyl ether	Octabromodiphenyl ether
Tetrabromobiphenyl	Nonabromobiphenyl	Tetrabromodiphenyl ether	Nonabromodiphenyl ether
Pentabromobiphenyl	Decabromobiphenyl	Pentabromodiphenyl ether	Decabromodiphenyl ether

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Test result(s):

No.	Sample Description	Results of XRF					Chemical confirmation results (mg/kg)	Conclusion
		Pb	Cd	Hg	Cr	Br		
1	Black Cloth	BL	BL	BL	BL	BL	---	Pass
2	Bamboo	BL	BL	BL	BL	BL	---	Pass
3	PCB	BL	BL	BL	BL	X	PBBs:N.D. PBDEs:N.D.	Pass
4	IC	BL	BL	BL	BL	BL	---	Pass
5	Capacitance	BL	BL	BL	BL	BL	---	Pass
6	Resistance	BL	BL	BL	BL	BL	---	Pass
7	Black Wire	BL	BL	BL	BL	BL	---	Pass
8	Red Wire	BL	BL	BL	BL	BL	---	Pass
9	Copper Wire	BL	BL	BL	BL	---	---	Pass
10	Wire Core	BL	BL	BL	BL	---	---	Pass
11	USB Metal	BL	BL	BL	BL	---	---	Pass
12	USB Plastic	BL	BL	BL	BL	BL	---	Pass
13	Horn Metal	BL	BL	BL	BL	---	---	Pass
14	Rubber Ring	BL	BL	BL	BL	BL	---	Pass
15	Black Outer Wire	BL	BL	BL	BL	BL	---	Pass
16	USB Metal (Black Outer Wire)	BL	BL	BL	BL	---	---	Pass
17	USB Plastic (Black Outer Wire)	BL	BL	BL	BL	BL	---	Pass
18	Solders	BL	BL	BL	BL	---	---	Pass
19	Printed circuit board	BL	BL	BL	BL	BL	---	Pass
20	Cable	BL	BL	BL	BL	BL	---	Pass
21	Speaker fabric	BL	BL	BL	BL	BL	---	Pass

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Remark:

a. It is the result on total Br while test item on restricted substances is PBBs/PBDEs. It is the result on total Cr while test item on restricted substances is Cr(VI).

b. The XRF screening test for RoHS elements-The reading may be different to the actual content in the sample be of non-uniformity composition.

c. Results are obtained by EDXRF for primary screening, and further chemical testing by ICP-OES (for Pb, Cd, Hg), UV-VIS for Cr(VI) and GC-MS (for PBBs/PBDEs) is recommended to be performed if the concentration exceeds the below warming value according to IEC 62321-3-1:2013.

XRF Screening limits for different matrices :

Materials	Concentration (mg/kg)				
	Cd	Cr	Pb	Hg	Br
Polymeric	BL≤60<X<140≤OL	BL≤640<X	BL≤670<X<1330≤OL	BL≤660<X<1340≤OL	BL≤290<X
Metallic	BL≤60<X<140≤OL	BL≤640<X	BL≤670<X<1330≤OL	BL≤660<X<1340≤OL	---
Composite materials	BL≤40<X<160≤OL	BL≤440<X	BL≤470<X<1530≤OL	BL≤460<X<1540≤OL	BL≤240<X

Note：

-BL= Below Limit

-OL=Over Limit

-X **=** inconclusive, the region where need further chemical testing by ICP-OES (for Pb, Cd, Hg), UV-Vis (for Cr(VI)) and GC-MS (for PBBs, PBDEs).

- --- = Not Applicable

- mg/kg=0.0001%

- N.D.=Not Detected(<MDL)

- MDL= Method Detection Limit

-Negative = Absence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is less than 0.02 mg/kg with 50cm^2 sample surface area used.

-*=According to 2011/65/EU Annex,point *Lead as an alloying element is steel containing up to 0.35% lead by weight, aluminum containing up to 0.4% lead by weight and as a copper alloy, containing up to 4% lead by weight can be exempted.

2. Phthalates—DBP, BBP, DEHP & DIBP

Test Item(s)	Test Method	Test Equipment	Unit	MDL	Limit
Dibutyl Phthalate(DBP)	IEC62321-8:2017	GC-MS	mg/kg	30	1000
Benzylbutyl Phthalate (BBP)	IEC62321-8:2017	GC-MS	mg/kg	30	1000
Di-(2-ethylhexyl)Phthalate (DEHP)	IEC62321-8:2017	GC-MS	mg/kg	30	1000
Diisobutyl phthalate(DIBP)	IEC62321-8:2017	GC-MS	mg/kg	30	1000

Test result(s):

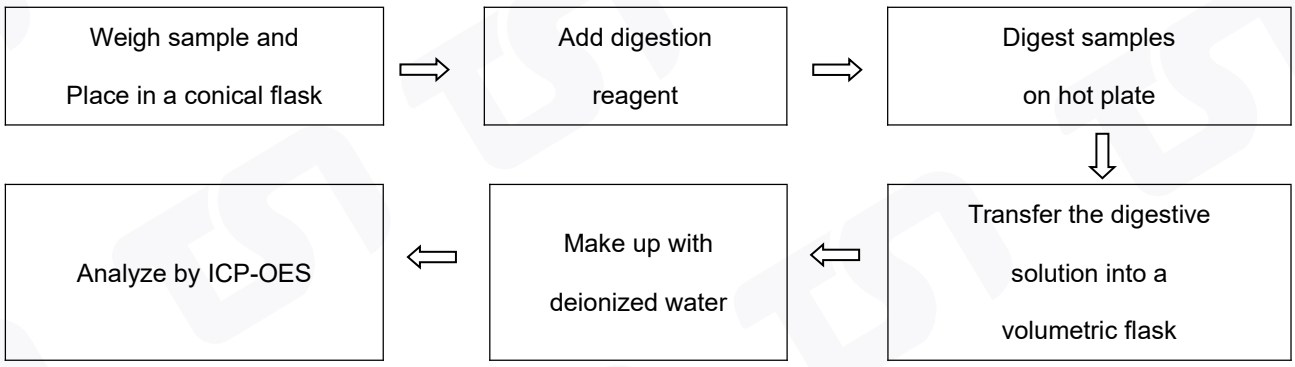
Part No.	Test Item (mg/kg)				Conclusion
	DBP	BBP	DEHP	DIBP	
1	N.D.	N.D.	N.D.	N.D.	Pass
2	N.D.	N.D.	N.D.	N.D.	Pass
3	N.D.	N.D.	N.D.	N.D.	Pass
4+5+6	N.D.	N.D.	N.D.	N.D.	Pass
7+8	N.D.	N.D.	N.D.	N.D.	Pass
15	N.D.	N.D.	N.D.	N.D.	Pass
12+17	N.D.	N.D.	N.D.	N.D.	Pass
14	N.D.	N.D.	N.D.	N.D.	Pass
19	N.D.	N.D.	N.D.	N.D.	Pass
20	N.D.	N.D.	N.D.	N.D.	Pass
21	N.D.	N.D.	N.D.	N.D.	Pass

Note: - mg/kg=0.0001%

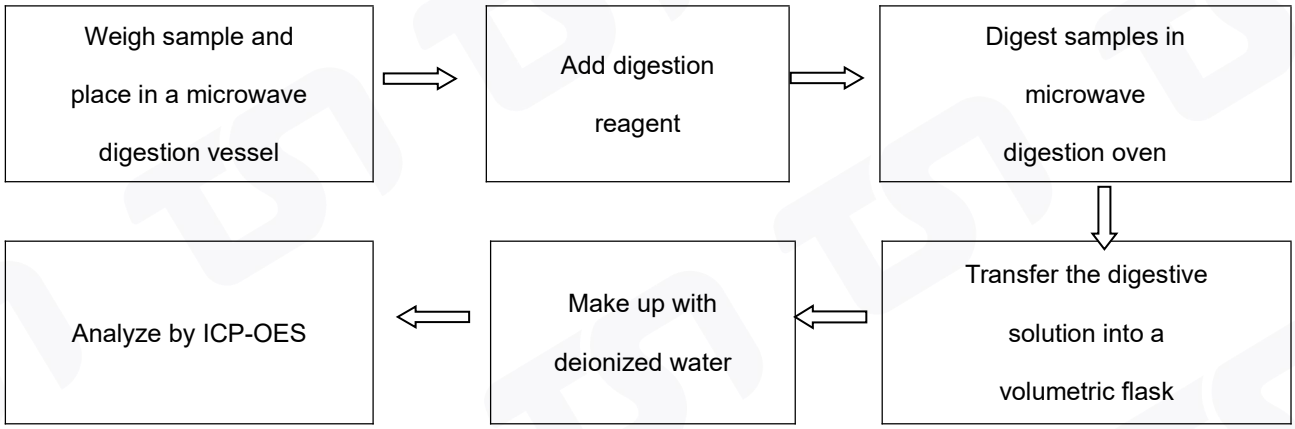
-N.D.=Not Detected(<MDL)

Chemical Test Process:

1.Test for Cd/Pb Content



2. Test for Hg Content



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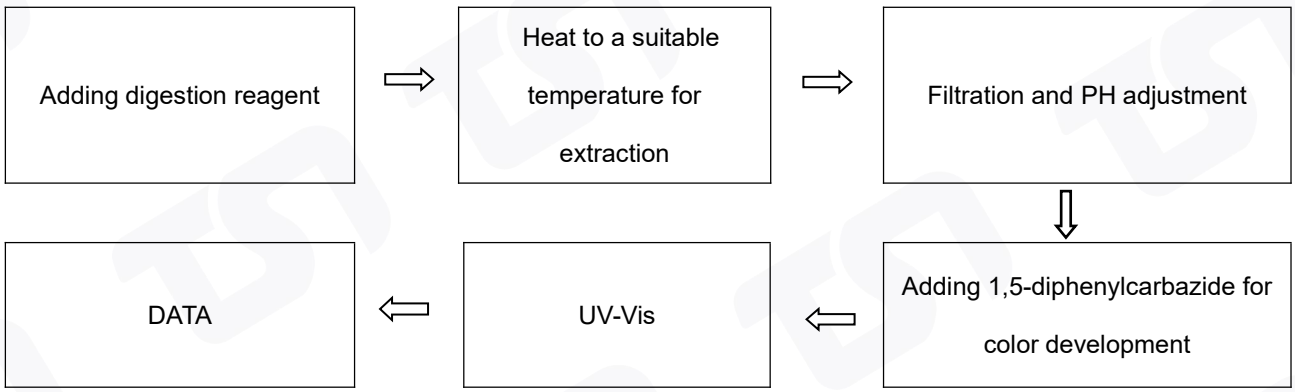
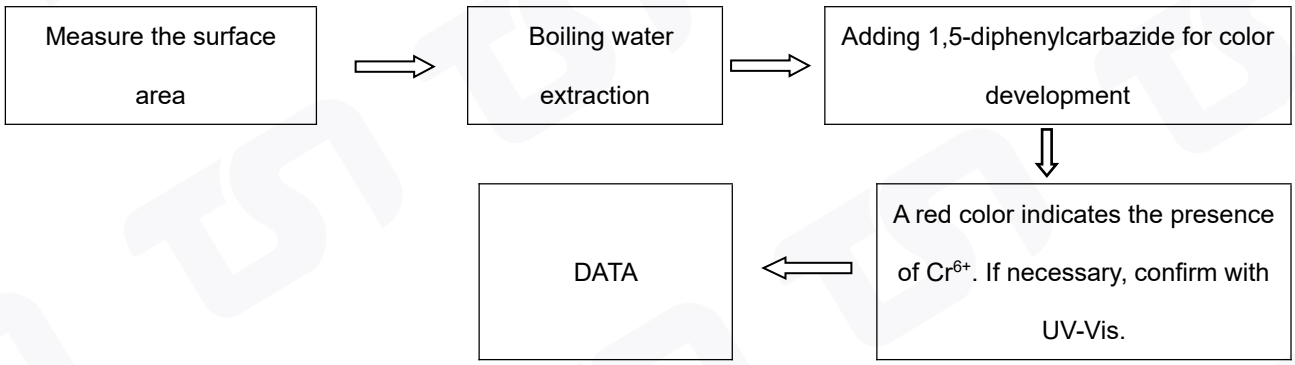
3. Test for Chromium (VI) Content

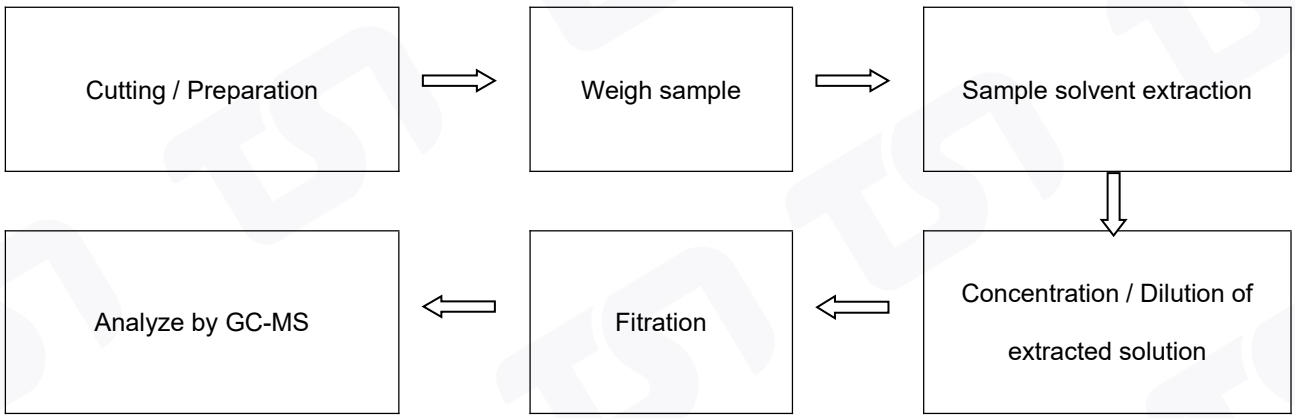
Nonmetal material



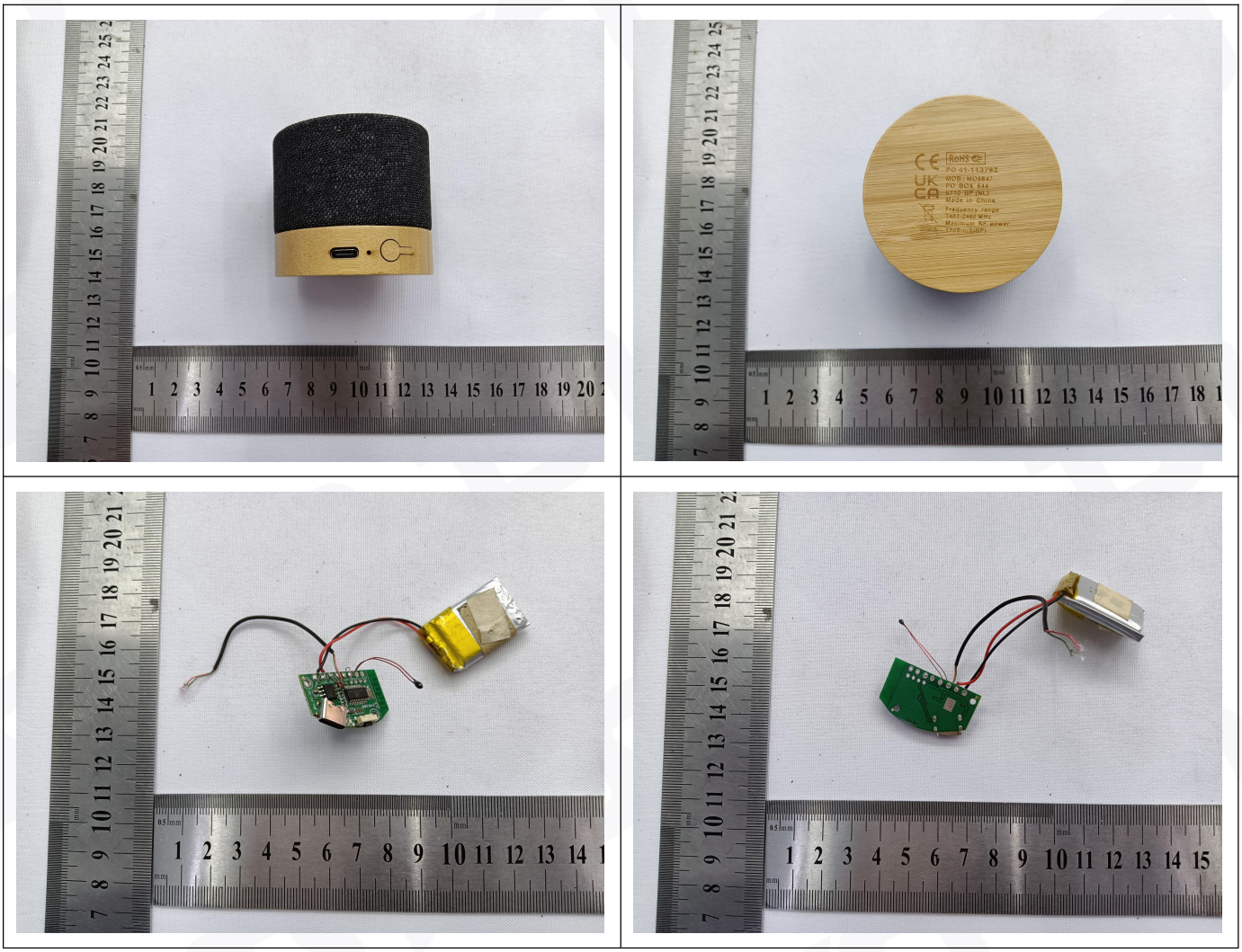
Metal material



4.Test for DBP, BBP, DEHP, DIBP, PBB, PBDE Content



Sample pictures:



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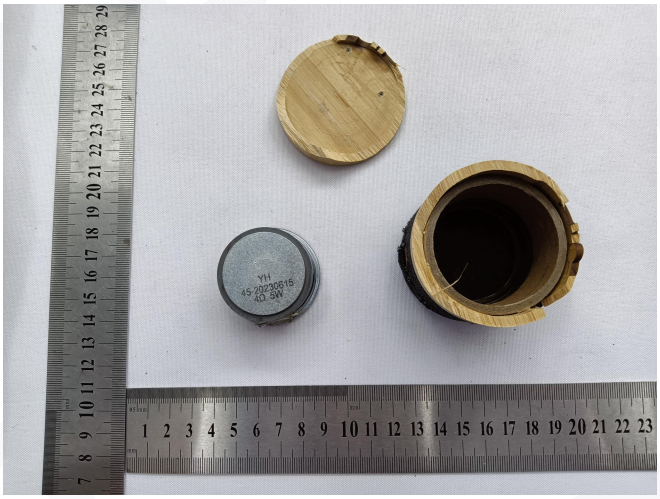

***** End of Report *****

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