

# Test Report

Report No.: U00602191014017E

Query Password: QW7993

Date: Oct. 17, 2019

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Applicant:

Contact information:

**The following sample(s) was (were) submitted and identified by client as:**

Sample Description : Small speakers  
Model No. : P329.24X  
Sample Received Date : Oct. 14, 2019  
Testing Period : From Oct. 14, 2019 to Oct. 17, 2019  
Test Request : Please refer to next page(s).  
Test Result(s) : Please refer to next page(s).


Signed for and on behalf of Shen Zhen UONE Test Co., LTD.

Prepared by



Marcia Deng

Checked by



Nora Deng

Approved by



Pascal Shi

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**Summary of test results:****TEST REQUEST**

RoHS Directive 2011/65/EU and its subsequent amendments &amp; Directive (EU) 2015/863

To determine Lead (Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)),

(1) Polybrominated Biphenyls (PBBs) and Polybrominated DiphenylEthers (PBDEs)  
content by screening test and chemical test**PASS**

(2) To determine Phthalates (DBP, BBP, DEHP, DIBP) content by chemical test

**PASS**

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**CONCLUSION**

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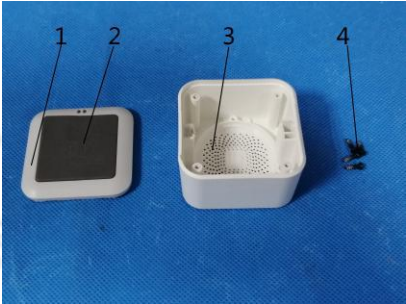
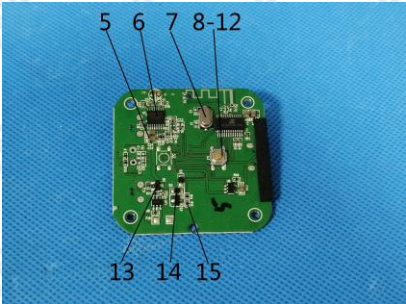
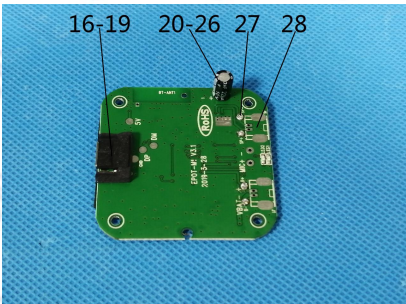
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## Test Material List

Material No.	Description (Location)	Photo(s) of tested materials
1	Gray plastic (shell)	
2	Gray soft plastic pad (control panel)	
3	White plastic (shell)	
4	Silvery metal screw with black coating (shell)	
5	Brown body (capacitance,PCB)	
6	Black body (IC,PCB)	
7	Silvery body (crystal oscillator,PCB)	
8	Golden metal block (button switch,PCB)	
9	Silvery metal frame (button switch,PCB)	
10	Black plastic pin holder (button switch,PCB)	
11	Silvery metal sheet (button switch,PCB)	
12	Silvery metal pin (button switch,PCB)	
13	Black body (audion,PCB)	
14	Black body (diode,PCB)	
15	Black body (resistance,PCB)	
16	Black foam (power socket,PCB)	
17	Silvery metal frame (power socket,PCB)	
18	Black plastic pin holder (power socket,PCB)	
19	Silvery metal pin (power socket,PCB)	
20	Black plastic jacket (capacitance,PCB)	
21	Silvery metal shell (capacitance,PCB)	
22	Black soft plastic pin holder (capacitance,PCB)	
23	Yellow wet paper (capacitance,PCB)	
24	Silvery metal sheet (capacitance,PCB)	
25	Silver gray metal sheet (capacitance,PCB)	

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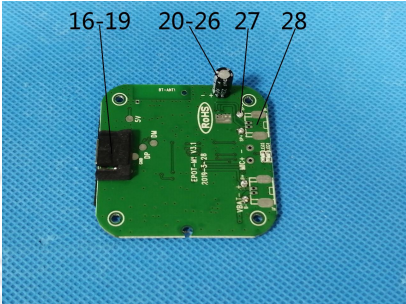
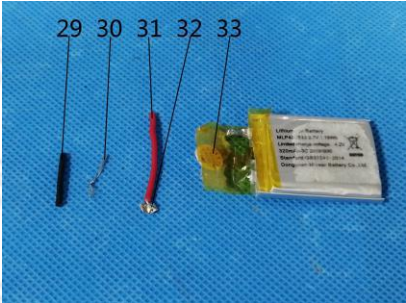

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Material No.	Description (Location)	Photo(s) of tested materials
26	Silvery metal pin (capacitance,PCB)	
27	Silvery solder (PCB)	
28	Green PCB (PCB)	
29	Black plastic wire jacket (battery)	
30	Silvery metal wire (battery)	
31	Red plastic wire jacket (battery)	
32	Silvery solder (battery)	
33	Yellow plastic film (battery)	
34	Black plastic wire jacket (speaker)	
35	Red plastic wire jacket (speaker)	
36	Silvery metal wire (speaker)	
37	Copperry metal wire (speaker)	
38	Silvery solder (speaker)	
39	Silvery metal river (speaker)	
40	White paper sheet (speaker)	
41	Black soft plastic with black paper (speaker)	
42	Black plastic film (speaker)	
43	Yellow fabric (speaker)	
44	Red metal coil (speaker)	
45	Yellow paper ring (speaker)	
46	Black foam with glue (speaker)	
47	Silvery metal frame (speaker)	
48	Silvery magnet block (speaker)	
49	Silvery metal block (speaker)	

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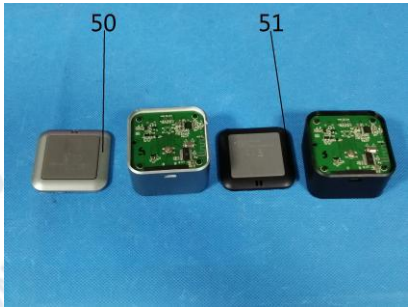
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Material No.	Description (Location)	Photo(s) of tested materials
50	Beige plastic with silvery coating (shell)	
51	Black plastic (shell)	

## Test Result(s):

(1) Lead (Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls (PBBs) and Polybrominated DiphenylEthers (PBDEs)

Test Method: IEC62321-3-1: 2013, IEC62321-4: 2013+A1:2017, IEC62321-5: 2013, IEC62321-6: 2015, IEC 62321-7-1:2015, IEC 62321-7-2: 2017, analyzed by EDXRF & ICP-OES & GC-MS & UV-Vis.

No.	EDXRF Result <sup>(1)</sup>					Chemical Result <sup>(2)</sup> (mg/kg)	Remark <sup>(3)</sup>	Conclusion
	Pb	Cd	Hg	Cr	Br			
1	BL	BL	BL	BL	BL	—	—	PASS
2	BL	BL	BL	BL	BL	—	—	PASS
3	BL	BL	BL	BL	BL	—	—	PASS
4	BL	BL	BL	BL	NA	—	—	PASS
5	BL	BL	BL	BL	BL	—	—	PASS
6	BL	BL	BL	BL	BL	—	—	PASS
7	BL	BL	BL	BL	NA	—	—	PASS
8	BL	BL	BL	BL	NA	—	—	PASS
9	BL	BL	BL	BL	NA	—	—	PASS
10	BL	BL	BL	BL	BL	—	—	PASS
11	BL	BL	BL	BL	NA	—	—	PASS
12	BL	BL	BL	BL	NA	—	—	PASS
13	BL	BL	BL	BL	BL	—	—	PASS
14	BL	BL	BL	BL	BL	—	—	PASS

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No.	EDXRF Result <sup>(1)</sup>					Chemical Result <sup>(2)</sup> (mg/kg)	Remark <sup>(3)</sup>	Conclusion
	Pb	Cd	Hg	Cr	Br			
15	BL	BL	BL	BL	BL	—	—	PASS
16	BL	BL	BL	BL	BL	—	—	PASS
17	BL	BL	BL	BL	NA	—	—	PASS
18	BL	BL	BL	BL	BL	—	—	PASS
19	BL	BL	BL	BL	NA	—	—	PASS
20	BL	BL	BL	BL	BL	—	—	PASS
21	BL	BL	BL	BL	NA	—	—	PASS
22	BL	BL	BL	BL	BL	—	—	PASS
23	BL	BL	BL	BL	BL	—	—	PASS
24	BL	BL	BL	BL	NA	—	—	PASS
25	BL	BL	BL	BL	NA	—	—	PASS
26	BL	BL	BL	BL	NA	—	—	PASS
27	BL	BL	BL	BL	NA	—	—	PASS
28	BL	BL	BL	BL	X	PBBs: N.D. PBDEs: N.D.	—	PASS
29	BL	BL	BL	BL	BL	—	—	PASS
30	BL	BL	BL	BL	NA	—	—	PASS
31	BL	BL	BL	BL	BL	—	—	PASS
32	BL	BL	BL	BL	NA	—	—	PASS
33	BL	BL	BL	BL	BL	—	—	PASS
34	BL	BL	BL	BL	BL	—	—	PASS
35	BL	BL	BL	BL	BL	—	—	PASS
36	BL	BL	BL	BL	NA	—	—	PASS
37	BL	BL	BL	BL	NA	—	—	PASS
38	BL	BL	BL	BL	NA	—	—	PASS
39	BL	BL	BL	BL	NA	—	—	PASS
40	BL	BL	BL	BL	BL	—	—	PASS

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No.	EDXRF Result <sup>(1)</sup>					Chemical Result <sup>(2)</sup> (mg/kg)	Remark <sup>(3)</sup>	Conclusion
	Pb	Cd	Hg	Cr	Br			
41	BL	BL	BL	BL	BL	—	—	PASS
42	BL	BL	BL	BL	BL	—	—	PASS
43	BL	BL	BL	BL	BL	—	—	PASS
44	BL	BL	BL	BL	BL	—	—	PASS
45	BL	BL	BL	BL	BL	—	—	PASS
46	BL	BL	BL	BL	BL	—	—	PASS
47	BL	BL	BL	BL	NA	—	—	PASS
48	BL	BL	BL	BL	NA	—	—	PASS
49	BL	BL	BL	BL	NA	—	—	PASS
50	BL	BL	BL	BL	BL	—	—	PASS
51	BL	BL	BL	BL	BL	—	—	PASS

## Remark:

- (1) ① Results are obtained by EDXRF for primary screening, and further wet chemical testing by ICP-OES (for Cd, Pb, Hg), UV-VIS (for Cr(VI)) and GC/MS (for PBBs, PBDEs) is recommended to be performed, if an inconclusive result was found (as "X" in below table) (unit: mg/kg).
- ② OL = Over Limit, BL = Below Limit, X = Inconclusive, NA = Not Applicable.
- ③ The EDXRF screening test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.

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

## Units and limits in EU RoHS Directive 2011/65/EU:

Element	Pb	Cd	Hg	Cr(VI)	PBBs(single)	PBDEs(single)
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Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Limit	1000	100	1000	1000	1000	1000

(2) ① mg/kg = ppm = 0.0001%, N.D. = Not Detected (Less than RL).

② Unit and RL (Report limit) in wet chemical test.

Element	Pb	Cd	Hg	Cr(VI)	PBBs(single)	PBDEs(single)
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
RL	2	2	2	2	5	5

③ According to IEC 62321-7-1:2015, result on Cr(VI) for metal sample is shown as Positive/Negative.

Negative = Absence of Cr(VI) coating, Positive = Presence of Cr(VI) coating.

Storage condition and production date of the tested sample are unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

④ According to IEC 62321-3-1:2013, this column represents the results of wet chem test.

(3) This column represents the exempted decoration of material or other related testing sample's information.

## (2) Phthalates (DBP, BBP, DEHP, DIBP) content

Test Method: IEC 62321-8: 2017, analyzed by gas chromatographic- mass spectrometer (GC-MS).

Substances	DBP	BBP	DEHP	DIBP	Conclusion
CAS No.	84-74-2	85-68-7	117-81-7	84-69-5	
Limit (mg/kg)	1000	1000	1000	1000	
RL (mg/kg)	30	30	30	30	
Material No.	Result (mg/kg)				
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
10	N.D.	N.D.	N.D.	N.D.	PASS
16	N.D.	N.D.	N.D.	N.D.	PASS
18	N.D.	N.D.	N.D.	N.D.	PASS
20	N.D.	N.D.	N.D.	N.D.	PASS
22	N.D.	N.D.	N.D.	N.D.	PASS

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Substances	DBP	BBP	DEHP	DIBP	Conclusion
CAS No.	84-74-2	85-68-7	117-81-7	84-69-5	
Limit (mg/kg)	1000	1000	1000	1000	
RL (mg/kg)	30	30	30	30	
Material No.	Result (mg/kg)				Conclusion
29	N.D.	N.D.	N.D.	N.D.	
31	460	N.D.	N.D.	N.D.	
33	N.D.	N.D.	N.D.	N.D.	
34	129	N.D.	N.D.	N.D.	
35	278	N.D.	N.D.	N.D.	
41	N.D.	N.D.	N.D.	N.D.	
42	N.D.	N.D.	N.D.	N.D.	
44	N.D.	N.D.	N.D.	N.D.	
46	N.D.	N.D.	N.D.	N.D.	
50	N.D.	N.D.	N.D.	N.D.	
51	N.D.	N.D.	N.D.	N.D.	

- Note:**
1. mg/kg = milligram per kilogram (ppm).
  2. RL = report limit.
  3. N.D.=not detected(less than RL).

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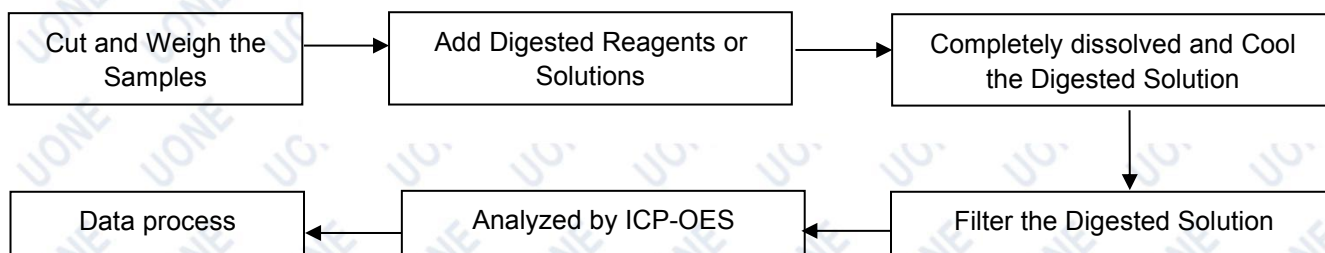
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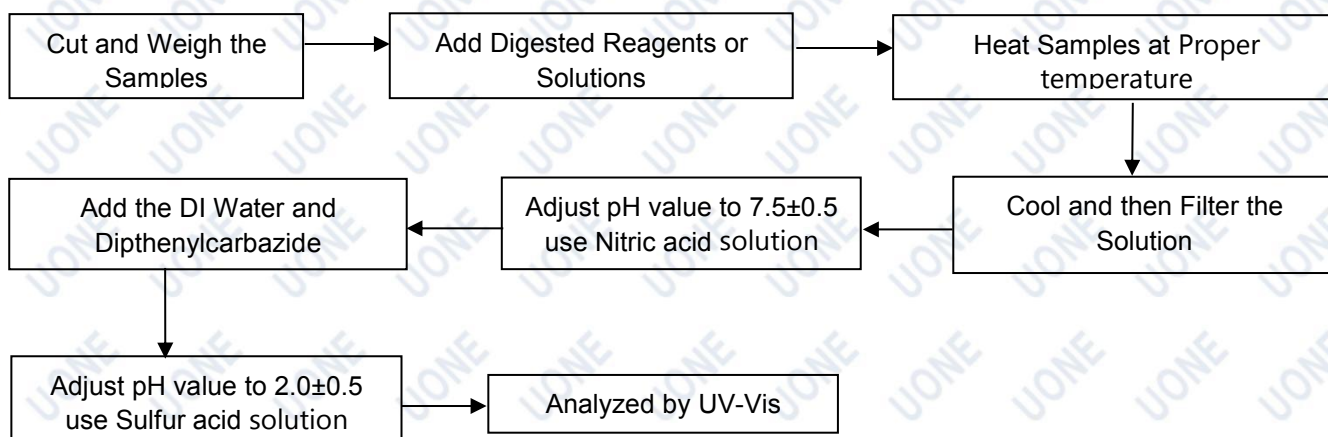
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## Test Process Flow

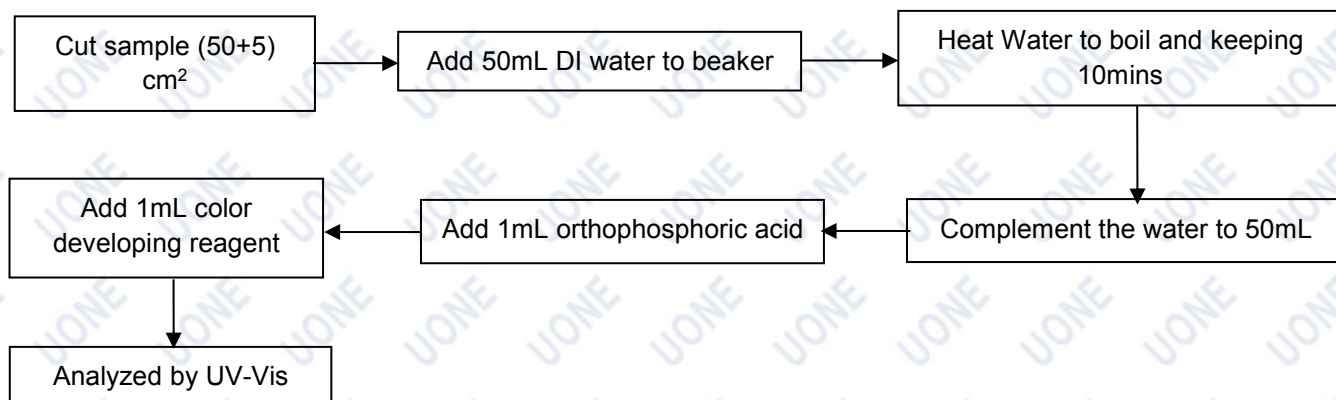
### 1. Lead, Cadmium, Mercury



### 2. Hexavalent Chromium (Non-metal)



### Hexavalent Chromium (Metal)



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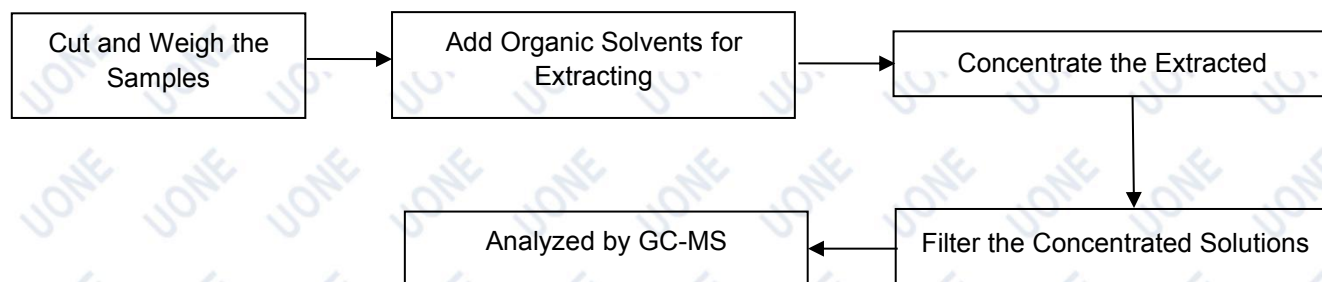
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## Test Process Flow (Continued):

### 3. PBBs & PBDEs, Phthalates



## Photo(s) of Sample:



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

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