Test Report

Applicant: Ampire Electronics GmbH&Co.KG

Contact information: Langwadener Strasse 60, D-41516 Grevenbroich, Germany

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

Sample Name	:	Audio Isolator
Model No.	:	55100-KLINKE
Received Date	:	Mar. 23, 2022
Testing Period	:	From Mar. 23, 2022 to Apr. 25, 2022
Test Request	:	Please refer to next page(s).
Test Result(s)	:	Please refer to next page(s).

Shen Zhen UONE Test Co., LTD.

Prepared by	Checked by	Approved by
Marcia Deng	Lin Zhu	Levent Liang

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Summary of test results:

TEST REQUEST	CONCLUSION
RoHS Directive 2011/65/EU and its subsequent amendments Directive (EU) 2015/863	
(1) To determine Lead (Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), 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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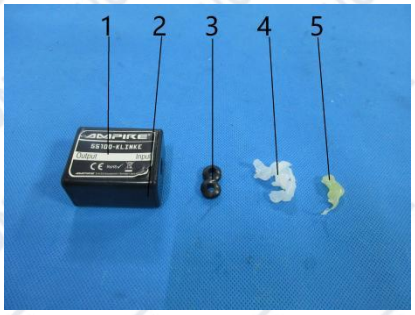
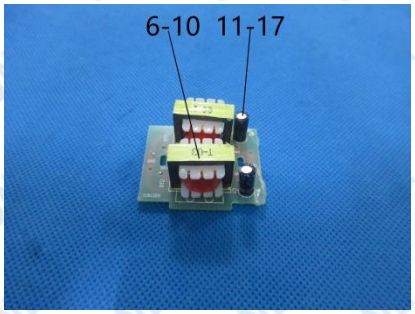
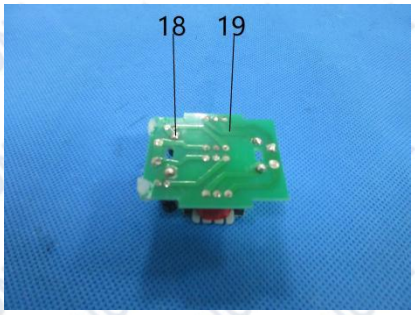
Test Material List

Material No.	Description (Location)	Photo(s) of tested materials
1	White plastic with black coating (label)	
2	Black plastic (shell)	
3	Black soft plastic (SR)	
4	White glue	
5	Yellow glue	
6	Yellow plastic tape (transformer)	
7	Black magnet block (transformer)	
8	White plastic bobbin (transformer)	
9	Red plastic tape (transformer)	
10	Coppery metal coil (transformer)	
11	Black plastic with white printing (capacitor)	
12	Silvery metal shell (capacitor)	
13	Black soft plastic pin holder (capacitor)	
14	Brown paper (capacitor)	
15	Silvery metal foil (capacitor)	
16	Dark silvery metal foil (capacitor)	
17	Silvery metal pin (capacitor)	
18	Silvery metal (solder)	
19	Green PCB	

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Material No.	Description (Location)	Photo(s) of tested materials
20	Black soft plastic handle (audio jack)	
21	Golden metal shell (audio jack)	
22	White plastic pin holder (audio jack)	
23	Silvery metal pin (audio jack)	
24	White glue (audio jack)	
25	Red soft plastic wire jacket (audio line)	
26	White soft plastic wire jacket (audio line)	
27	Black soft plastic sleeve (audio line)	
28	Silvery metal wire (audio line)	
29	Black soft plastic cable jacket (audio line)	
30	Golden metal pin (audio plug)	
31	Golden metal tube (audio plug)	
32	Black plastic pin holder (audio plug)	
33	Black plastic handle (audio plug)	
34	Black glue (audio plug)	
35	Red soft plastic wire jacket (audio line)	
36	White soft plastic wire jacket (audio line)	
37	Black soft plastic wire jacket (audio line)	
38	Silvery metal foil (audio line)	
39	Black soft plastic cable jacket (audio line)	

Remark: The test result(s) of Material No. 3 is(are) shown retest result, and the retest sample(s) was(were) provided by client on Apr. 19, 2022.

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 (1)					Chemical Result (2) (mg/kg)	Remark(3)	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	—	Apr. 19, 2022	PASS
4	BL	BL	BL	BL	BL	—	—	PASS
5	BL	BL	BL	BL	BL	—	—	PASS
6	BL	BL	BL	BL	BL	—	—	PASS
7	BL	BL	BL	BL	BL	—	—	PASS
8	BL	BL	BL	BL	BL	—	—	PASS
9	BL	BL	BL	BL	BL	—	—	PASS
10	BL	BL	BL	BL	NA	—	—	PASS
11	BL	BL	BL	BL	BL	—	—	PASS
12	BL	BL	BL	BL	NA	—	—	PASS
13	BL	BL	BL	BL	BL	—	—	PASS
14	BL	BL	BL	BL	BL	—	—	PASS
15	BL	BL	BL	BL	NA	—	—	PASS
16	BL	BL	BL	BL	NA	—	—	PASS
17	BL	BL	BL	BL	NA	—	—	PASS
18	BL	BL	BL	BL	NA	—	—	PASS
19	BL	BL	BL	BL	X	PBBs: N.D. PBDEs: N.D.	—	PASS
20	BL	BL	BL	BL	BL	—	—	PASS
21	OL	X	BL	BL	NA	Pb: 26500# Cd: 66	Copper alloy	PASS
22	BL	BL	BL	BL	BL	—	—	PASS

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No.	EDXRF Result (1)					Chemical Result (2) (mg/kg)	Remark(3)	Conclusion
	Pb	Cd	Hg	Cr	Br			
23	BL	BL	BL	BL	NA	—	—	PASS
24	BL	BL	BL	BL	BL	—	—	PASS
25	BL	BL	BL	BL	BL	—	—	PASS
26	BL	BL	BL	BL	BL	—	—	PASS
27	BL	BL	BL	BL	BL	—	—	PASS
28	BL	BL	BL	BL	NA	—	—	PASS
29	BL	BL	BL	BL	BL	—	—	PASS
30	OL	BL	BL	BL	NA	Pb: 23200#	Copper alloy	PASS
31	BL	BL	BL	BL	NA	—	—	PASS
32	BL	BL	BL	BL	BL	—	—	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	BL	—	—	PASS
37	BL	BL	BL	BL	BL	—	—	PASS
38	BL	BL	BL	BL	NA	—	—	PASS
39	BL	BL	BL	BL	BL	—	—	PASS

Remark:

(1) ①Results 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).

②OL = Over Limit, BL = Below Limit, X = Inconclusive, NA = Not Applicable.

③The 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 ≤(70-3σ)< X <(130+3σ)≤ OL	BL ≤(70-3σ)< X <(130+3σ)≤ OL	LOD < X <(150+3σ)≤ OL
Pb	BL ≤(700-3σ)< X <(1300+3σ)≤ OL	BL ≤(700-3σ)< X <(1300+3σ)≤ OL	BL ≤(500-3σ)< X <(1500+3σ)≤ OL
Hg	BL ≤(700-3σ)< X <(1300+3σ)≤ OL	BL ≤(700-3σ)< X <(1300+3σ)≤ OL	BL ≤(500-3σ)< X <(1500+3σ)≤ OL
Br	BL ≤ (300-3σ)< X	NA	BL ≤ (250-3σ)< X
Cr	BL ≤ (700-3σ)< X	BL ≤ (700-3σ)< X	BL ≤ (500-3σ)< X

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

Element	Pb	Cd	Hg	Cr(VI)	PBBs(single)	PBDEs(single)
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 MDL).

②Unit and MDL (Method detection 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
MDL	2	2	2	8	5	5

③According 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.
According to the declaration from the client, Lead in specimen(s) is exempted by RoHS Directive (2011/65 / EU) annex III and its amendment base on:

Copper alloy containing up to 4 % lead by weight.

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

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

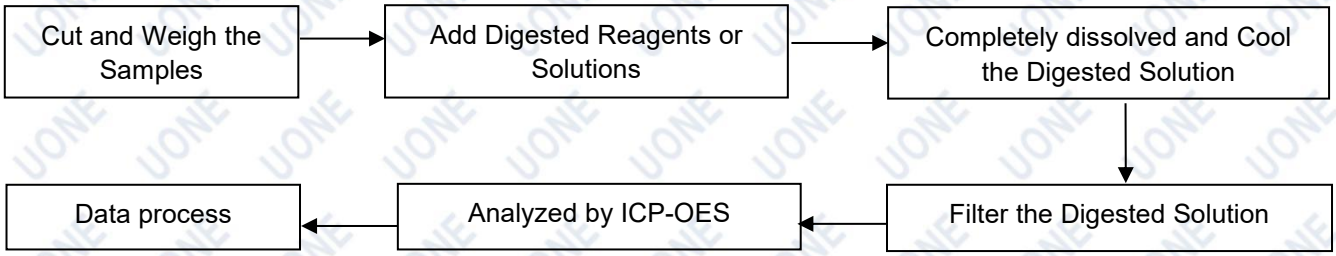
Substances	DBP	BBP	DEHP	DIBP	Conclusion
CAS No.	84-74-2	85-68-7	117-81-7	84-69-5	
Limit (mg/kg)	1000	1000	1000	1000	
MDL (mg/kg)	20	20	20	20	
Material No.	Result (mg/kg)				
1	N.D.	N.D.	N.D.	N.D.	PASS
2	N.D.	N.D.	N.D.	N.D.	PASS
3	N.D.	N.D.	300	N.D.	PASS
4	N.D.	N.D.	N.D.	N.D.	PASS
5	N.D.	N.D.	N.D.	N.D.	PASS
6	N.D.	N.D.	N.D.	N.D.	PASS
7	N.D.	N.D.	N.D.	N.D.	PASS
8	N.D.	N.D.	N.D.	N.D.	PASS
9	N.D.	N.D.	N.D.	N.D.	PASS
11	N.D.	N.D.	N.D.	N.D.	PASS
13	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
22	N.D.	N.D.	N.D.	N.D.	PASS
24	N.D.	N.D.	N.D.	N.D.	PASS
25	N.D.	N.D.	N.D.	N.D.	PASS
26	N.D.	N.D.	N.D.	N.D.	PASS
27	N.D.	N.D.	N.D.	N.D.	PASS
29	N.D.	N.D.	N.D.	N.D.	PASS
32	N.D.	N.D.	N.D.	N.D.	PASS

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	
MDL (mg/kg)	20	20	20	20	
Material No.	Result (mg/kg)				
33	N.D.	N.D.	N.D.	N.D.	PASS
34	N.D.	N.D.	N.D.	N.D.	PASS
35	N.D.	N.D.	N.D.	N.D.	PASS
36	N.D.	N.D.	N.D.	N.D.	PASS
37	N.D.	N.D.	N.D.	N.D.	PASS
39	N.D.	N.D.	N.D.	N.D.	PASS

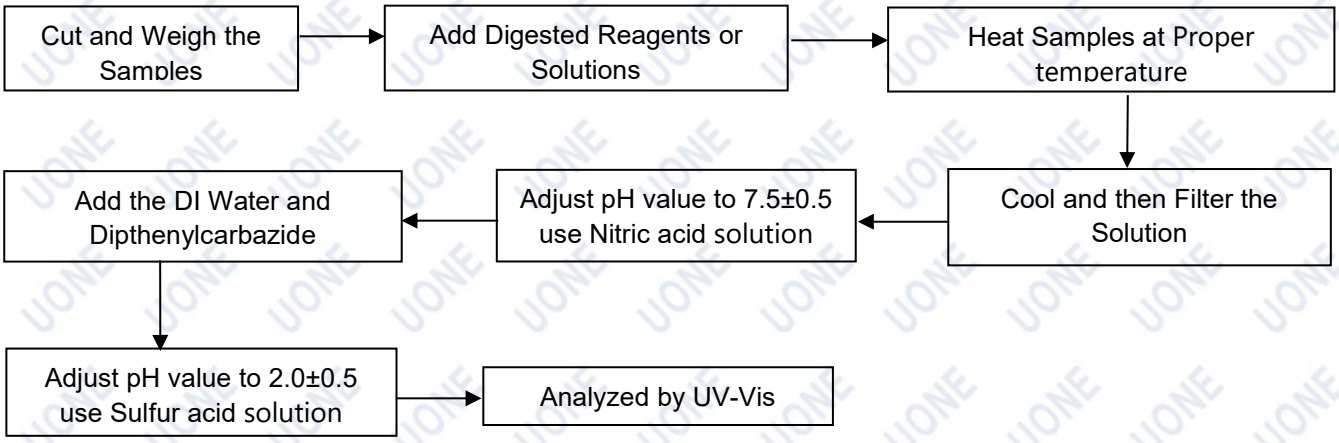
Note:
1. mg/kg = milligram per kilogram (ppm).
2. MDL= method detection limit.
3. N.D.=not detected(less than MDL).

Test Process Flow

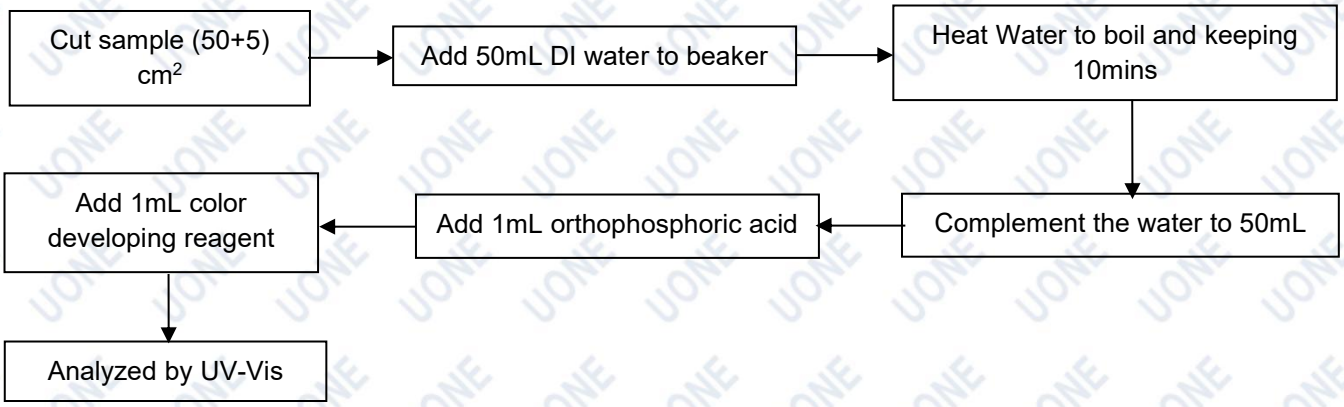
1. Lead, Cadmium, Mercury



2. Hexavalent Chromium (Non-metal)

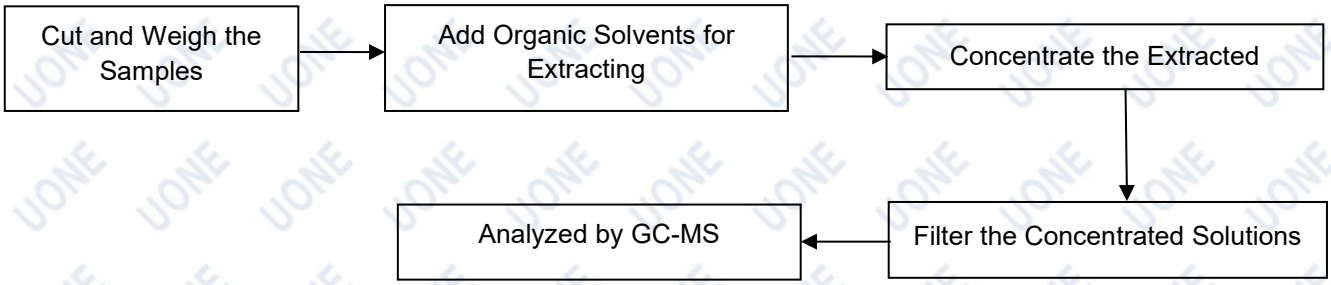


Hexavalent Chromium (Metal)



Test Process Flow (Continued):

3. PBBs & PBDEs, Phthalates



Photo(s) of Sample:

End of Report

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Statement

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