

Test Report

Report No.: U01001210222602E

Query Password: QW5632

Date: Feb. 26, 2021

Page 1 of 16

Applicant: HUNAN DWIN TECHNOLOGY CO.,LTD.**Contact information:** NO.8 CHUANGYE RD. HIGH-TECH BUSINESS INCUBATOR, ZHANGJIANG TOWN,
TAOYUAN COUNTY,CHANGDE**The following sample(s) was (were) submitted and identified by client as:**

Sample Name : Thermostat
Model No. : TC040C11U04
Sample Received Date : Feb. 22, 2021
Testing Period : From Feb. 22, 2021 to Feb. 26, 2021
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



Levent Liang

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

Test Report

Report No.: U01001210222602E

Query Password: QW5632

Date: Feb. 26, 2021

Page 2 of 16

Summary of test results:**TEST REQUEST**

RoHS Directive 2011/65/EU and its subsequent amendments & 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

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

CONCLUSION**PASS****PASS**

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

Test Report

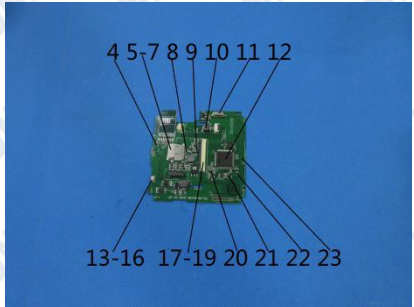
Report No.: U01001210222602E

Query Password: QW5632

Date: Feb. 26, 2021

Page 3 of 16

Test Material List

Material No.	Description (Location)	Photo(s) of tested materials
1	Transparent glass	
2	Black plastic	
3	Black plastic	
4	Brown body (capacitance)	
5	Silver metal (lid)	
6	Silver metal (pin)	
7	Black plastic (base)	
8	Black body (transistor)	
9	Black body (diode)	
10	Black body (inductor)	
11	Silver body (crystal)	
12	Black Body (IC)	
13	Black plastic (button, switch)	
14	White plastic (case, switch)	
15	Silver metal sheet (switch)	
16	Silver metal (connector, switch)	
17	Black plastic (buckle)	
18	Silver metal (connector)	
19	Black plastic (base)	
20	Black body (resistor)	
21	Black body (EC)	
22	Silver metal (solder)	
23	Green PCB	

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

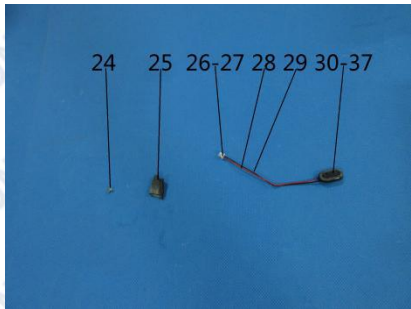
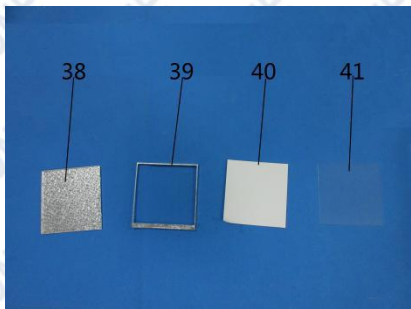
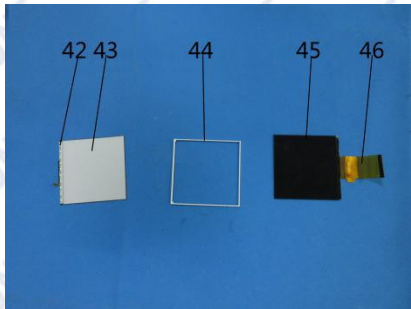
Test Report

Report No.: U01001210222602E

Query Password: QW5632

Date: Feb. 26, 2021

Page 4 of 16

Material No.	Description (Location)	Photo(s) of tested materials
24	Silver metal (screw)	 <p>24 25 26-27 28 29 30-37</p>
25	Black sticky foam	
26	White plastic (terminal holder)	
27	Silver metal (terminal)	
28	Red soft plastics (wire jacket)	
29	Black soft plastics (wire jacket)	
30	Black viscose foam (loudspeaker)	
31	Black fabric (loudspeaker)	
32	Silver metal (case, speaker)	
33	Clear plastic (loudspeaker)	
34	Copper metal (coil, speaker)	
35	Silver magnet (core, speaker)	
36	Silver metal (base, speaker)	
37	Black plastic (case, speaker)	
38	Silver metal (display screen)	 <p>38 39 40 41</p>
39	Silver metal (bezel, display screen)	
40	White plastic (display screen)	
41	Transparent plastic (display screen)	
42	White body (LED, display screen)	 <p>42 43 44 45 46</p>
43	White plastic (display screen)	
44	White plastic (bezel, display screen)	
45	Black glass (display screen)	
46	Yellow FPC (display screen)	

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

Test Report

Report No.: U01001210222602E

Query Password: QW5632

Date: Feb. 26, 2021

Page 5 of 16

Material No.	Description (Location)	Photo(s) of tested materials
47	White sticky plastic with black printing (label)	
48	White sticky paper with red printing (label)	
49	White sticky plastic with black printing (label)	
50	White sticky paper with black printing (bar code)	
51	Black plastic (case)	
52	Black plastic (cover)	
53	Black soft plastic (sleeve)	
54	Transparent body (fuse)	
55	Blue Body (Capacitance)	
56	Black plastic with white printing(sleeve, capacitor)	
57	Silvery metal(shell, capacitor)	
58	Black soft rubber(base, capacitor)	
59	Brown paper with liquid(film, capacitor)	
60	Silvery metal(foil, capacitor)	
61	Dull silvery metal(foil, capacitor)	
62	Silvery metal(pin, capacitor)	
63	Green Body (Capacitance)	
64	Black plastic (case, relay)	
65	Silver metal (connector, relay)	
66	Gold metal (connector, relay)	
67	Silver metal (contact, relay)	
68	Silver metal (shaft, relay)	
69	Black plastic (drum, relay)	
70	Copper metal (coil, relay)	
71	Green plastic (enclosure)	

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

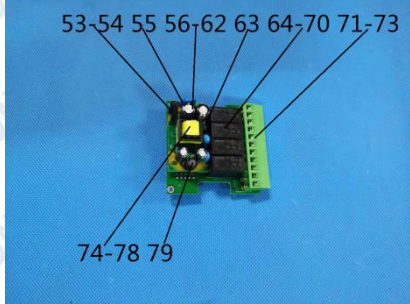
Test Report

Report No.: U01001210222602E

Query Password: QW5632

Date: Feb. 26, 2021

Page 6 of 16

Material No.	Description (Location)	Photo(s) of tested materials
72	Silver metal (connector)	
73	Silver metal (screw)	
74	Yellow adhesive plastic(tape, transformer)	
75	Black plastic(bobbin, transformer)	
76	Black magnet(core, transformer)	
77	Coppery metal(coil, transformer)	
78	Coppery metal with yellow coating(coil, transformer)	
79	Black body (inductor)	
80	Silver metal (solder)	
81	Green PCB	

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	—	—	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

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

Test Report

Report No.: U01001210222602E

Query Password: QW5632

Date: Feb. 26, 2021

Page 7 of 16

No.	EDXRF Result ⁽¹⁾					Chemical Result ⁽²⁾ (mg/kg)	Remark ⁽³⁾	Conclusion
	Pb	Cd	Hg	Cr	Br			
8	BL	BL	BL	BL	BL	—	—	PASS
9	BL	BL	BL	BL	BL	—	—	PASS
10	BL	BL	BL	BL	BL	—	—	PASS
11	BL	BL	BL	BL	BL	—	—	PASS
12	BL	BL	BL	BL	BL	—	—	PASS
13	BL	BL	BL	BL	BL	—	—	PASS
14	BL	BL	BL	BL	BL	—	—	PASS
15	BL	BL	BL	BL	BL	—	—	PASS
16	BL	BL	BL	BL	BL	—	—	PASS
17	BL	BL	BL	BL	BL	—	—	PASS
18	BL	BL	BL	BL	BL	—	—	PASS
19	BL	BL	BL	BL	BL	—	—	PASS
20	BL	BL	BL	BL	BL	—	—	PASS
21	BL	BL	BL	BL	BL	—	—	PASS
22	BL	BL	BL	BL	BL	—	—	PASS
23	BL	BL	BL	BL	X	PBBs: N.D. PBDEs: N.D.	—	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	BL	—	—	PASS
29	BL	BL	BL	BL	BL	—	—	PASS
30	BL	BL	BL	BL	BL	—	—	PASS
31	BL	BL	BL	BL	BL	—	—	PASS
32	BL	BL	BL	BL	BL	—	—	PASS
33	BL	BL	BL	BL	BL	—	—	PASS

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

Test Report

Report No.: U01001210222602E

Query Password: QW5632

Date: Feb. 26, 2021

Page 8 of 16

No.	EDXRF Result ⁽¹⁾					Chemical Result ⁽²⁾ (mg/kg)	Remark ⁽³⁾	Conclusion
	Pb	Cd	Hg	Cr	Br			
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	BL	—	—	PASS
39	BL	BL	BL	BL	BL	—	—	PASS
40	BL	BL	BL	BL	BL	—	—	PASS
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	BL	—	—	PASS
48	BL	BL	BL	BL	BL	—	—	PASS
49	BL	BL	BL	BL	BL	—	—	PASS
50	BL	BL	BL	BL	BL	—	—	PASS
51	BL	BL	BL	BL	BL	—	—	PASS
52	BL	BL	BL	BL	BL	—	—	PASS
53	BL	BL	BL	BL	BL	—	—	PASS
54	BL	BL	BL	BL	BL	—	—	PASS
55	BL	BL	BL	BL	BL	—	—	PASS
56	BL	BL	BL	BL	BL	—	—	PASS
57	BL	BL	BL	BL	BL	—	—	PASS
58	BL	BL	BL	BL	BL	—	—	PASS
59	BL	BL	BL	BL	BL	—	—	PASS
60	BL	BL	BL	BL	BL	—	—	PASS

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

Test Report

Report No.: U01001210222602E

Query Password: QW5632

Date: Feb. 26, 2021

Page 9 of 16

No.	EDXRF Result ⁽¹⁾					Chemical Result ⁽²⁾ (mg/kg)	Remark ⁽³⁾	Conclusion
	Pb	Cd	Hg	Cr	Br			
61	BL	BL	BL	BL	BL	—	—	PASS
62	BL	BL	BL	BL	BL	—	—	PASS
63	BL	BL	BL	BL	BL	—	—	PASS
64	BL	BL	BL	BL	X	PBBs: N.D. PBDEs: N.D.	—	PASS
65	BL	BL	BL	BL	BL	—	—	PASS
66	BL	BL	BL	BL	BL	—	—	PASS
67	BL	BL	BL	BL	BL	—	—	PASS
68	BL	BL	BL	BL	BL	—	—	PASS
69	BL	BL	BL	BL	BL	—	—	PASS
70	BL	BL	BL	BL	BL	—	—	PASS
71	BL	BL	BL	BL	X	PBBs: N.D. PBDEs: N.D.	—	PASS
72	BL	BL	BL	BL	BL	—	—	PASS
73	BL	BL	BL	BL	BL	—	—	PASS
74	BL	BL	BL	BL	BL	—	—	PASS
75	BL	BL	BL	BL	BL	—	—	PASS
76	BL	BL	BL	BL	BL	—	—	PASS
77	BL	BL	BL	BL	BL	—	—	PASS
78	BL	BL	BL	BL	BL	—	—	PASS
79	BL	BL	BL	BL	BL	—	—	PASS
80	BL	BL	BL	BL	BL	—	—	PASS
81	BL	BL	BL	BL	X	PBBs: N.D. PBDEs: N.D.	—	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.

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

Test Report

Report No.: U01001210222602E

Query Password: QW5632

Date: Feb. 26, 2021

Page 10 of 16

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	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
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)
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.

(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)	30	30	30	30	

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

Test Report

Report No.: U01001210222602E

Query Password: QW5632

Date: Feb. 26, 2021

Page 11 of 16

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
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
10	N.D.	N.D.	N.D.	N.D.	PASS
11	N.D.	N.D.	N.D.	N.D.	PASS
12	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
15	N.D.	N.D.	N.D.	N.D.	PASS
16	N.D.	N.D.	N.D.	N.D.	PASS
17	N.D.	N.D.	N.D.	N.D.	PASS
18	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
22	N.D.	N.D.	N.D.	N.D.	PASS
23	N.D.	N.D.	N.D.	N.D.	PASS
24	N.D.	N.D.	N.D.	N.D.	PASS
25	N.D.	N.D.	105	N.D.	PASS
26	N.D.	N.D.	N.D.	N.D.	PASS
27	N.D.	N.D.	N.D.	N.D.	PASS
28	N.D.	N.D.	N.D.	N.D.	PASS

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

Test Report

Report No.: U01001210222602E

Query Password: QW5632

Date: Feb. 26, 2021

Page 12 of 16

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)	30	30	30	30	
Material No.	Result (mg/kg)				
29	N.D.	N.D.	N.D.	N.D.	PASS
30	N.D.	N.D.	N.D.	N.D.	PASS
31	N.D.	N.D.	N.D.	N.D.	PASS
32	N.D.	N.D.	N.D.	N.D.	PASS
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
38	N.D.	N.D.	N.D.	N.D.	PASS
39	N.D.	N.D.	N.D.	N.D.	PASS
40	N.D.	N.D.	N.D.	N.D.	PASS
41	N.D.	N.D.	N.D.	N.D.	PASS
42	N.D.	N.D.	N.D.	N.D.	PASS
43	N.D.	N.D.	N.D.	N.D.	PASS
44	N.D.	N.D.	N.D.	N.D.	PASS
45	N.D.	N.D.	N.D.	N.D.	PASS
46	N.D.	N.D.	N.D.	N.D.	PASS
47	N.D.	N.D.	253	N.D.	PASS
48	N.D.	N.D.	N.D.	N.D.	PASS
49	N.D.	N.D.	220	N.D.	PASS
50	N.D.	N.D.	N.D.	N.D.	PASS
51	N.D.	N.D.	N.D.	N.D.	PASS
52	N.D.	N.D.	N.D.	N.D.	PASS

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

Test Report

Report No.: U01001210222602E

Query Password: QW5632

Date: Feb. 26, 2021

Page 13 of 16

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)	30	30	30	30	
Material No.	Result (mg/kg)				
53	N.D.	N.D.	N.D.	N.D.	PASS
54	N.D.	N.D.	N.D.	N.D.	PASS
55	N.D.	N.D.	N.D.	N.D.	PASS
56	N.D.	N.D.	N.D.	N.D.	PASS
57	N.D.	N.D.	N.D.	N.D.	PASS
58	N.D.	N.D.	N.D.	N.D.	PASS
59	N.D.	N.D.	N.D.	N.D.	PASS
60	N.D.	N.D.	N.D.	N.D.	PASS
61	N.D.	N.D.	N.D.	N.D.	PASS
62	N.D.	N.D.	N.D.	N.D.	PASS
63	N.D.	N.D.	N.D.	N.D.	PASS
64	N.D.	N.D.	N.D.	N.D.	PASS
65	N.D.	N.D.	N.D.	N.D.	PASS
66	N.D.	N.D.	N.D.	N.D.	PASS
67	N.D.	N.D.	N.D.	N.D.	PASS
68	N.D.	N.D.	N.D.	N.D.	PASS
69	N.D.	N.D.	N.D.	N.D.	PASS
70	N.D.	N.D.	N.D.	N.D.	PASS
71	N.D.	N.D.	N.D.	N.D.	PASS
72	N.D.	N.D.	N.D.	N.D.	PASS
73	N.D.	N.D.	N.D.	N.D.	PASS
74	N.D.	N.D.	N.D.	N.D.	PASS
75	N.D.	N.D.	N.D.	N.D.	PASS
76	N.D.	N.D.	N.D.	N.D.	PASS

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

Test Report

Report No.: U01001210222602E

Query Password: QW5632

Date: Feb. 26, 2021

Page 14 of 16

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)	30	30	30	30	
Material No.	Result (mg/kg)				
77	N.D.	N.D.	N.D.	N.D.	PASS
78	N.D.	N.D.	N.D.	N.D.	PASS
79	N.D.	N.D.	N.D.	N.D.	PASS
80	N.D.	N.D.	N.D.	N.D.	PASS
81	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).

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

Test Report

Report No.: U01001210222602E

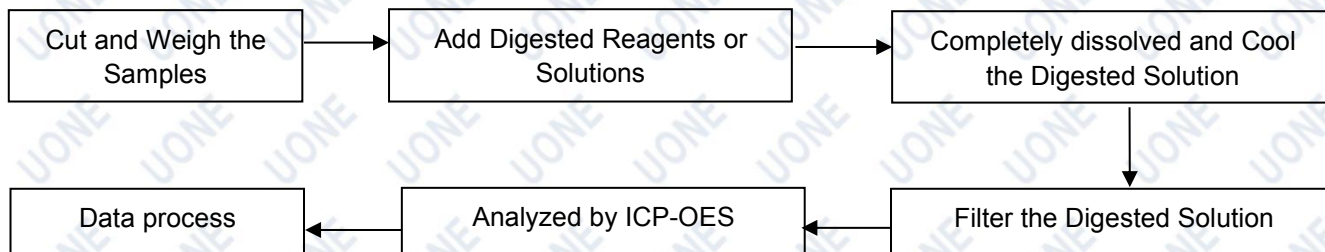
Query Password: QW5632

Date: Feb. 26, 2021

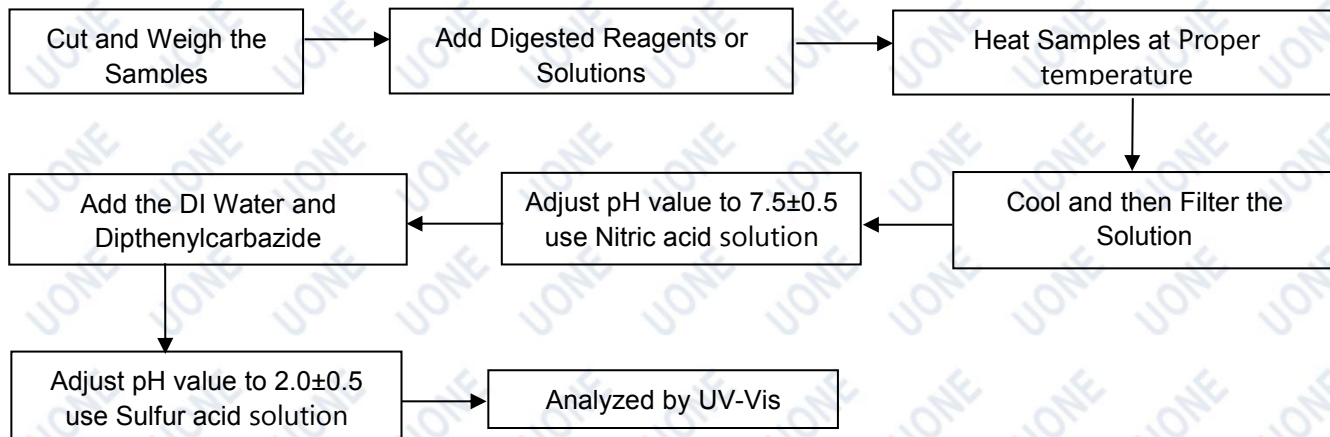
Page 15 of 16

Test Process Flow

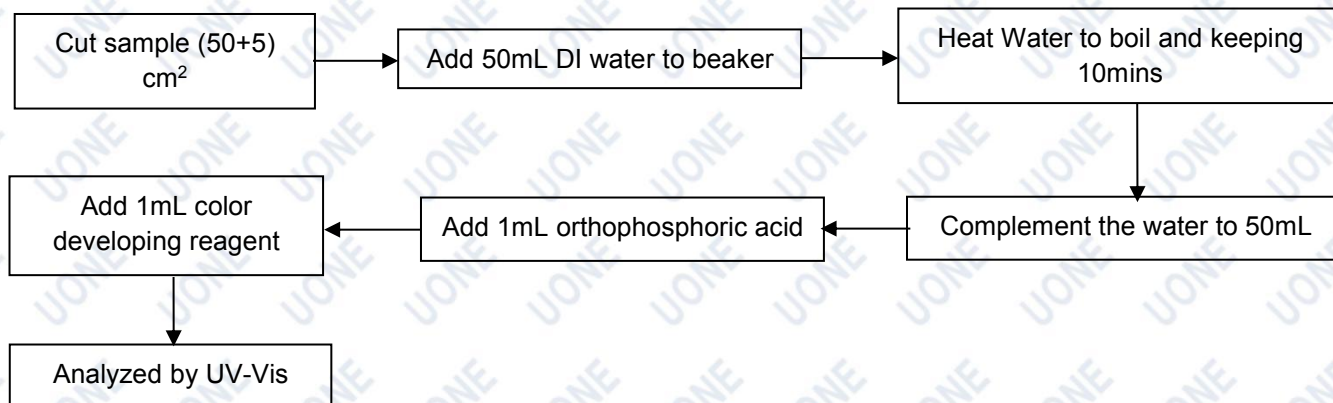
1. Lead, Cadmium, Mercury



2. Hexavalent Chromium (Non-metal)



Hexavalent Chromium (Metal)



This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

Test Report

Report No.: U01001210222602E

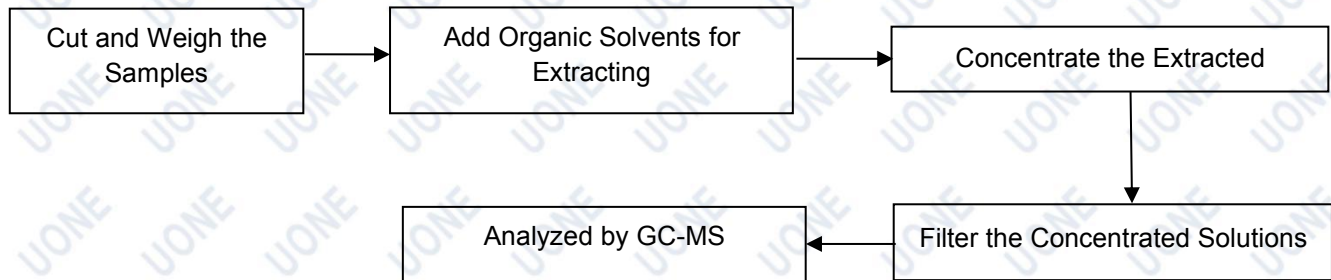
Query Password: QW5632

Date: Feb. 26, 2021

Page 16 of 16

Test Process Flow (Continued):

3. PBBs & PBDEs, Phthalates



Photo(s) of Sample:



End of Report

This report is considered invalidated without the Special Seal for Inspection of the UONE, This report shall not be altered, increased or deleted. The results shown in this test report refer only to the sample tested. Without written approval of UONE, this report shall not be copied and published as advertisement.

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.