

Test Report

Report No.:U01306211123605-3E

Query Password: QW0113

Date: Nov. 29, 2021

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Applicant: Shenzhen Atnen Technology Co.,LTD**Contact information:** Room 301&401, Building D, No.17, Innovation Industrial Park, Xintian Community,
Guanhu Street, Longhua District, Shenzhen 518110, P. R. China**The following sample(s) was (were) submitted and identified by client as:**

Sample Description : Li-ion Battery Charger

Style/Item No. : ATN034 42V6A:LBC034420060/LBC034100601/LBC034360601 50.4V
4.5A:LBC034504045/LBC034120501/LBC034430501 54.6V
4.5A:LBC034546045/LBC034130501/LBC034480501 58.8V
4.2A:LBC034588042/LBC034140401/LBC03450401
25.2V8A LBC034252080/LBC034060801/LBC034220801
29.4V8A LBC034294080/LBC034070801/LBC034240801

Sample Received Date : Nov. 23, 2021

Testing Period : From Nov. 23, 2021 to Nov. 29, 2021

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



Marcia Deng

Checked by



Lin Zhu

Approved by



Levent Liang

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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**

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Test Material List

Material No.	Description (Location)	Photo(s) of tested materials
1	Black plastic(shell)	
2	Translucent plastic(indicator light)	
3	Silvery metal(spacer)	
4	Yellow plastic(spacer)	
5	Yellow adhesive plastic(tape)	
6	Silvery metal(radiator)	
7	Brown silica gel(spacer)	
8	Silvery metal(screw)	
9	Silvery metal(nut)	
10	Black body(triode)	
11	Green magnet(inductor)	
12	Red metal(coil,inductor)	
13	Coppery metal(coil,inductor)	
14	Blue body(inductor)	
15	Green plastic with gold printing(sleeve, capacitor)	
16	Transparent adhesive plastic with black printing(label, transformer)	

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Material No.	Description (Location)	Photo(s) of tested materials
17	Yellow adhesive plastic(tape, transformer)	
18	Black plastic(bobbin, transformer)	
19	Black magnet(core, transformer)	
20	Copper metal(coil, transformer)	
21	Copper metal with yellow coating(coil, transformer)	
22	Transparent soft plastic(sleeve, transformer)	
23	Black soft plastic(sleeve, transformer)	
24	Red soft plastic(sleeve, transformer)	
25	Silvery metal(connector, fuse)	
26	Brown body(fuse)	
27	Blue body(capacitor)	
28	Yellow body(capacitor)	
29	White adhesive plastic with black printing(label)	
30	Black body(IC)	
31	Black body(IC)	
32	Translucent body(LED)	
33	Green body(capacitor)	
34	Black plastic with white printing(sleeve, capacitor)	
35	Silvery metal(shell, capacitor)	
36	Black soft rubber(base, capacitor)	
37	Brown paper with liquid(film, capacitor)	
38	Silvery metal(foil, capacitor)	
39	Dull silvery metal(foil, capacitor)	
40	Silvery metal(pin, capacitor)	
41	Black body(triode)	
42	White glue	
43	Black body(diode)	
44	Red body(capacitor)	
45	Black body(inductor)	
46	Black body(BD)	

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Material No.	Description (Location)	Photo(s) of tested materials	
47	Black soft plastic(sleeve)		
48	Black body(inductor)		
49	Black body(resistor)		
50	Green magnet(inductor)		
51	Coppery metal(coil,inductor)		
52	Black plastic(pedestal,inductor)		
53	Black body(diode)		
54	Black body(resistor)		
55	Black body(resistor)		
56	Brown body(capacitor)		
57	Black soft plastic(spacer)		
58	Black body(IC)		
59	Silvery metal(solder)		
60	Green PCB		
61	Silvery metal(pin)		
62	Silvery metal(handle)		
63	Black soft plastic(SR)		
64	Black body(SR)		
65	Blue soft plastic(wire jacket)		
66	Brown soft plastic(wire jacket)		
67	Black soft plastic(wire jacket)		
68	Coppery metal(wire)		

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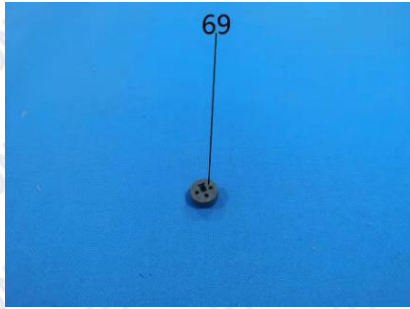
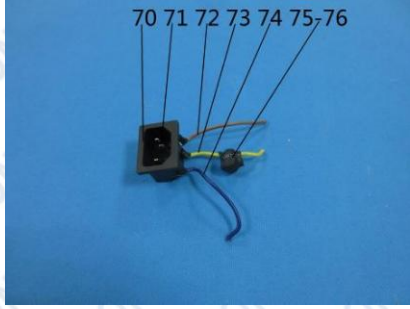

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Material No.	Description (Location)	Photo(s) of tested materials
69	Brown plastic(pin holder)	
70	Black plastic(power socket)	
71	Silvery metal(connector)	
72	Brown soft plastic(wire jacket)	
73	Yellow soft plastic(wire jacket)	
74	Blue soft plastic(wire jacket)	
75	Black soft plastic(sleeve)	
76	Green magnet	
77	Silvery metal(buckle)	

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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	NA	—	—	PASS
4	BL	BL	BL	BL	BL	—	—	PASS
5	BL	BL	BL	BL	BL	—	—	PASS
6	BL	BL	BL	BL	NA	—	—	PASS
7	BL	BL	BL	BL	BL	—	—	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	BL	—	—	PASS
12	BL	BL	BL	BL	NA	—	—	PASS
13	BL	BL	BL	BL	NA	—	—	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	NA	—	—	PASS
21	BL	BL	BL	BL	NA	—	—	PASS
22	BL	BL	BL	BL	BL	—	—	PASS
23	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			
24	BL	BL	BL	BL	BL	—	—	PASS
25	BL	BL	BL	BL	NA	—	—	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
34	BL	BL	BL	BL	BL	—	—	PASS
35	BL	BL	BL	BL	NA	—	—	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	NA	—	—	PASS
40	BL	BL	BL	BL	NA	—	—	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

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No.	EDXRF Result ⁽¹⁾					Chemical Result ⁽²⁾ (mg/kg)	Remark ⁽³⁾	Conclusion
	Pb	Cd	Hg	Cr	Br			
51	BL	BL	BL	BL	NA	—	—	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	NA	—	—	PASS
60	BL	BL	BL	BL	X	PBBs: N.D. PBDEs: N.D.	—	PASS
61	OL	BL	BL	BL	NA	Pb: 23100#	Copper alloy	PASS
62	BL	BL	BL	BL	NA	—	—	PASS
63	BL	BL	BL	BL	BL	—	—	PASS
64	BL	BL	BL	BL	BL	—	—	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	NA	—	—	PASS
69	BL	BL	BL	BL	BL	—	—	PASS
70	BL	BL	BL	BL	X	PBBs: N.D. PBDEs: N.D.	—	PASS
71	BL	BL	BL	BL	NA	—	—	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

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No.	EDXRF Result ⁽¹⁾					Chemical Result ⁽²⁾ (mg/kg)	Remark ⁽³⁾	Conclusion
	Pb	Cd	Hg	Cr	Br			
77	BL	BL	BL	BL	NA	—	—	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)
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).

② Unit 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

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.

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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.

(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
4	N.D.	N.D.	N.D.	N.D.	PASS
5	N.D.	N.D.	N.D.	N.D.	PASS
7	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
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
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
26	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	
MDL (mg/kg)	20	20	20	20	
Material No.	Result (mg/kg)				
27	N.D.	N.D.	N.D.	N.D.	PASS
28	N.D.	N.D.	N.D.	N.D.	PASS
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
36	N.D.	N.D.	N.D.	N.D.	PASS
37	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.	N.D.	N.D.	PASS
48	N.D.	N.D.	N.D.	N.D.	PASS
49	N.D.	N.D.	N.D.	N.D.	PASS
50	N.D.	N.D.	N.D.	N.D.	PASS
52	N.D.	N.D.	N.D.	N.D.	PASS
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

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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	
MDL (mg/kg)	20	20	20	20	
Material No.	Result (mg/kg)				
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
60	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
69	N.D.	N.D.	N.D.	N.D.	PASS
70	N.D.	N.D.	N.D.	N.D.	PASS
72	155	N.D.	N.D.	N.D.	PASS
73	162	N.D.	N.D.	N.D.	PASS
74	160	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

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

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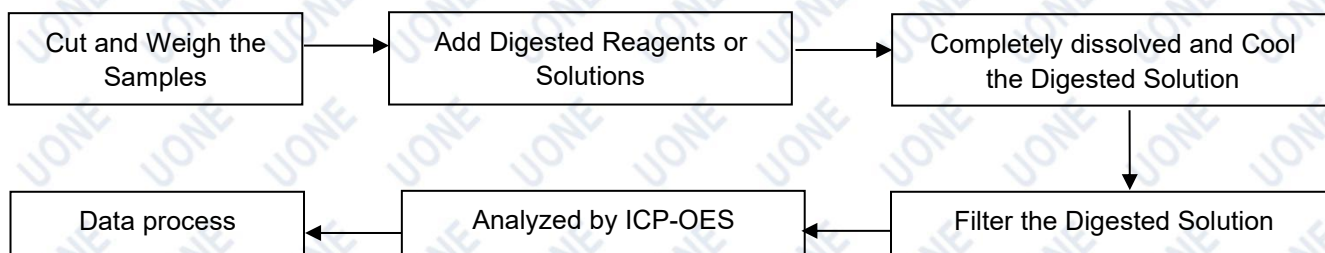
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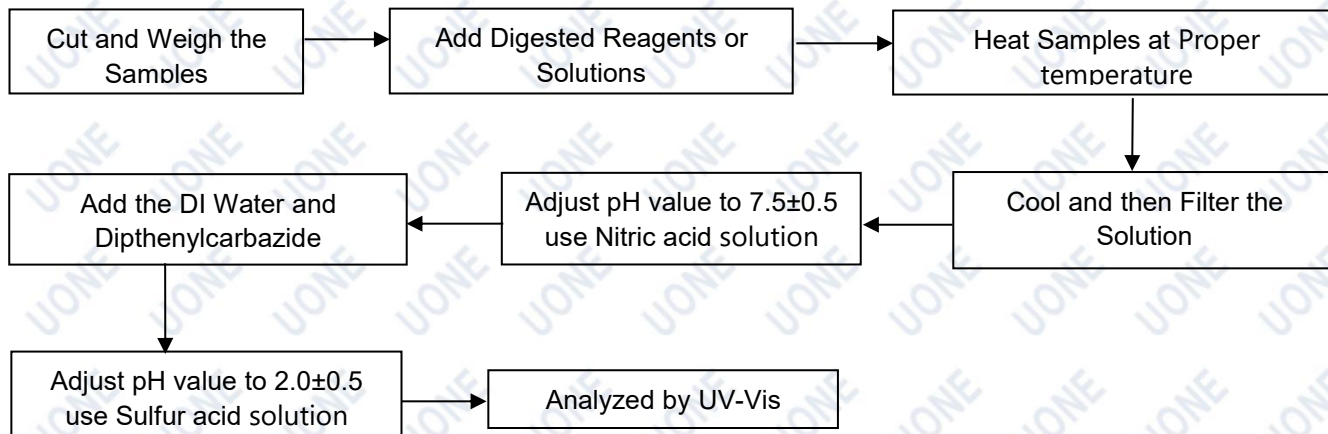
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Test Process Flow

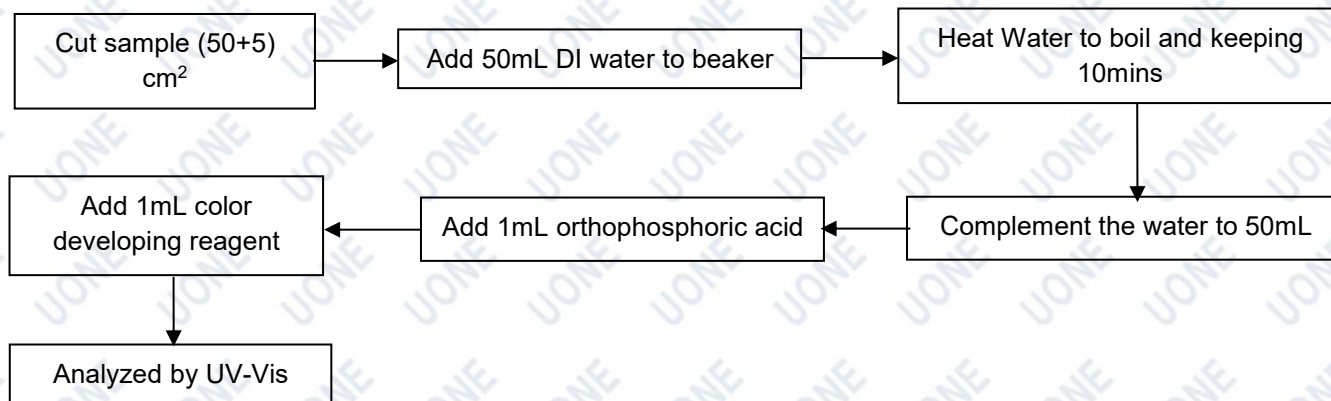
1. Lead, Cadmium, Mercury



2. Hexavalent Chromium (Non-metal)



Hexavalent Chromium (Metal)



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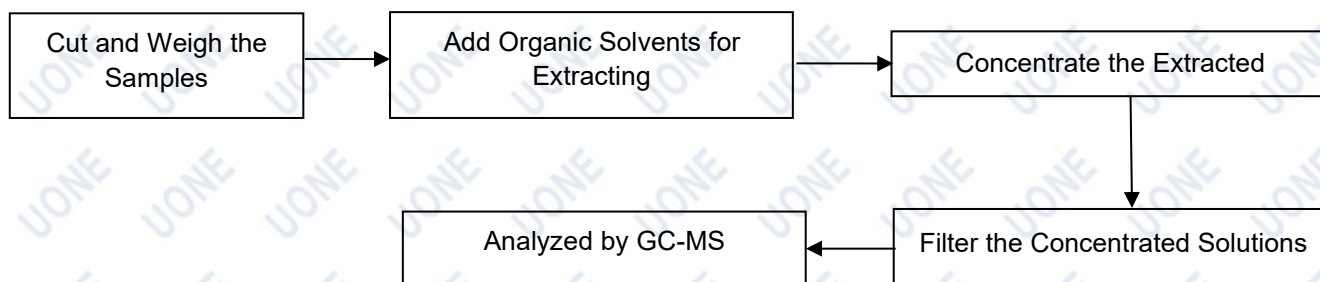
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Test Process Flow (Continued):

3. PBBs & PBDEs, Phthalates



Photo(s) of Sample:



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End of Report

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