

Test Report

Report No.: U10207230526606E

Query Password: QW0231

Date: Jun. 1, 2023

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Applicant: Shanghai Sanxin Peirui Instrument Technology Co., LTD**Contact information:** 4/F, Building 16, No.481 Guiping Road, Shanghai, China**The following sample(s) was (were) submitted and identified by client as:**

Sample Name : Water Quality Testers

Model No. : PH60

Series Model : PC60,EC60,PH60S,PH60F,ORP60,PH60-Z,PC60-Z,EC60-Z,PH60S-Z,PH60 F-Z,ORP60-Z,PH5,PH5F,PH5S,PC5,EC5,ORP5,DO60,DO5,ION60,ION5,CL 60,CL5,FL60,FL5,PH60-PW,PH60-WW,PH60Z-SA,PH60Z-HF,PH60Z-HT,PH 60Z-MS,PH60Z-DP,PH60Z-MT,PH60Z-FT,PH60Z-VS

Trade mark : APERA INSTRUMENTS

Manufacturer : Shanghai Sanxin Peirui Instrument Technology Co., LTD

Received Date : May 26, 2023

Testing Period : From May 26, 2023 to Jun. 1, 2023

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



Max Wu

Checked by



Thea Ye

Approved by



Hedy Xu



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Summary of Test Results (Tested parts are required partially by client):**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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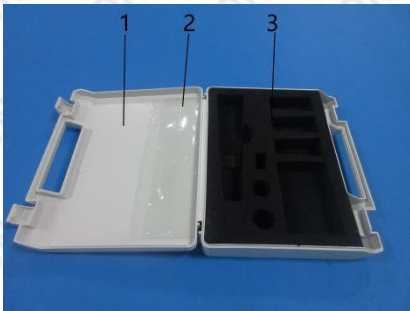
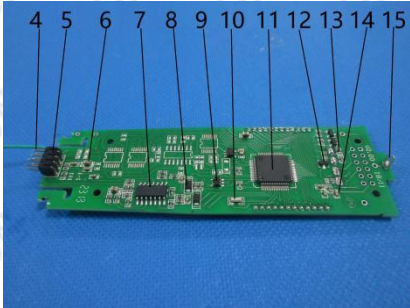
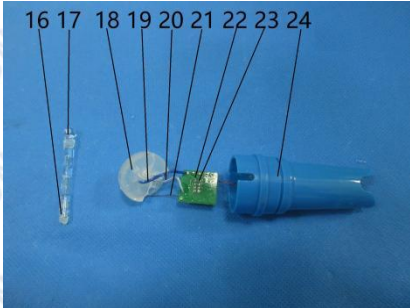
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Test Material List

Material No.	Description (Location)	Photo(s) of tested materials
1	Gray plastic(gray)	
2	Transparent plastic(buckle)	
3	Black foam(spacer)	
4	Silvery metal(pin)	
5	Black plastic(pin holder)	
6	Brown body(capacitor)	
7	Black body(IC)	
8	Black body(diode)	
9	Black body(IC)	
10	Silvery body(crystal)	
11	Black body(IC)	
12	Black body(triode)	
13	Black body(resistor)	
14	Brown body(capacitor)	
15	Silvery metal(connector)	
16	Transparent liquid	
17	Transparent glass	
18	Translucent glue	
19	Blue soft plastic(wire jacket)	
20	Transparent soft plastic(wire jacket)	
21	Coppery metal(wire)	
22	Green PCB	
23	Silvery metal(solder)	
24	Blue plastic(shell)	

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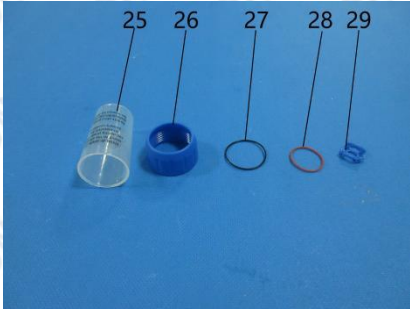
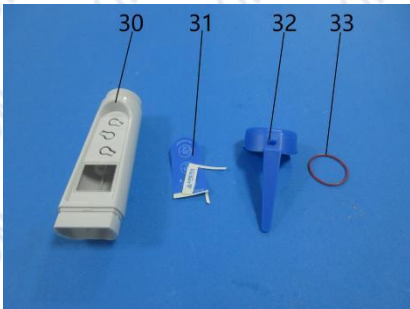
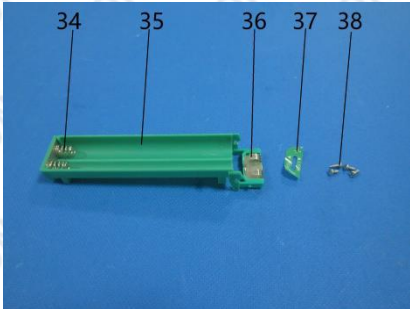
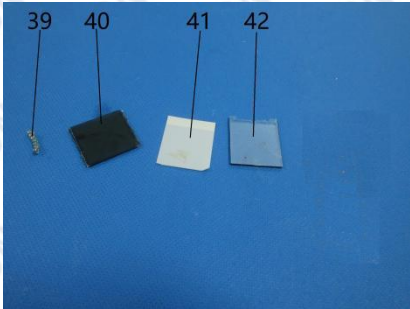
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Material No.	Description (Location)	Photo(s) of tested materials
25	Transparent plastic(cover)	
26	Blue plastic(shell)	
27	Black soft plastic(ring)	
28	Red soft plastic(ring)	
29	Blue plastic(buckle)	
30	Gray plastic(shell)	
31	Blue adhesive plastic with white printing(label)	
32	Blue plastic(shell)	
33	Red soft plastic(ring)	
34	Silvery metal(spring)	
35	Green plastic(buckle)	
36	Silvery metal(connector)	
37	Green plastic with white printing(label)	
38	Silvery metal(screw)	
39	Silvery metal(pin)	
40	Transparent black glass(screen)	
41	White plastic(screen)	
42	Translucent plastic(screen)	

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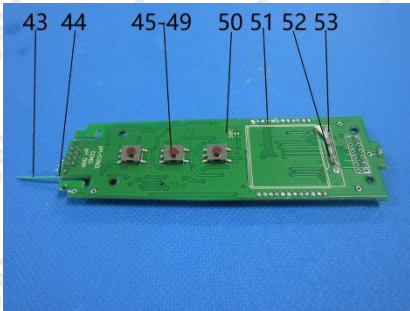
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Material No.	Description (Location)	Photo(s) of tested materials
43	Green soft plastic(wire jacket)	
44	Silvery metal(wire)	
45	Brown plastic(button, switch)	
46	Silvery metal(cover, switch)	
47	Silvery metal(foil, switch)	
48	Black plastic(base, switch)	
49	Silvery metal(connector, switch)	
50	Green PCB	
51	Silvery metal(solder)	
52	White body(LED)	
53	White 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	NA	—	—	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

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No.	EDXRF Result ⁽¹⁾					Chemical Result ⁽²⁾ (mg/kg)	Remark ⁽³⁾	Conclusion
	Pb	Cd	Hg	Cr	Br			
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	NA	—	—	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	NA	—	—	PASS
22	BL	BL	BL	BL	X	PBBs: N.D. PBDEs: N.D.	—	PASS
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	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	NA	—	—	PASS
35	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			
36	BL	BL	BL	BL	NA	—	—	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	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	NA	—	—	PASS
45	BL	BL	BL	BL	BL	—	—	PASS
46	BL	BL	BL	BL	NA	—	—	PASS
47	BL	BL	BL	BL	NA	—	—	PASS
48	BL	BL	BL	BL	BL	—	—	PASS
49	BL	BL	BL	BL	NA	—	—	PASS
50	BL	BL	BL	BL	X	PBBs: N.D. PBDEs: N.D.	—	PASS
51	BL	BL	BL	BL	NA	—	—	PASS
52	BL	BL	BL	BL	BL	—	—	PASS
53	BL	BL	BL	BL	BL	—	—	PASS

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

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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)				PASS
1	N.D.	N.D.	N.D.	N.D.	
2	N.D.	N.D.	N.D.	N.D.	
3	N.D.	N.D.	N.D.	N.D.	
5	N.D.	N.D.	N.D.	N.D.	
6	N.D.	N.D.	N.D.	N.D.	
7	N.D.	N.D.	N.D.	N.D.	
8	N.D.	N.D.	N.D.	N.D.	
9	N.D.	N.D.	N.D.	N.D.	
10	N.D.	N.D.	N.D.	N.D.	
11	N.D.	N.D.	N.D.	N.D.	
12	N.D.	N.D.	N.D.	N.D.	
13	N.D.	N.D.	N.D.	N.D.	
14	N.D.	N.D.	N.D.	N.D.	
16	N.D.	N.D.	N.D.	N.D.	
17	N.D.	N.D.	N.D.	N.D.	
18	N.D.	N.D.	N.D.	N.D.	
19	N.D.	N.D.	N.D.	N.D.	
20	N.D.	N.D.	N.D.	N.D.	
22	N.D.	N.D.	N.D.	N.D.	
24	N.D.	N.D.	N.D.	N.D.	

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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)				PASS
25	N.D.	N.D.	N.D.	N.D.	
26	N.D.	N.D.	N.D.	N.D.	
27	N.D.	N.D.	N.D.	N.D.	
28	N.D.	N.D.	N.D.	N.D.	
29	N.D.	N.D.	N.D.	N.D.	
30	N.D.	N.D.	N.D.	N.D.	
31	N.D.	N.D.	N.D.	N.D.	
32	N.D.	N.D.	N.D.	N.D.	
33	N.D.	N.D.	N.D.	N.D.	
35	N.D.	N.D.	N.D.	N.D.	
37	N.D.	N.D.	N.D.	N.D.	
40	N.D.	N.D.	N.D.	N.D.	
41	N.D.	N.D.	N.D.	N.D.	
42	N.D.	N.D.	N.D.	N.D.	
43	N.D.	N.D.	N.D.	N.D.	
45	N.D.	N.D.	N.D.	N.D.	
48	N.D.	N.D.	N.D.	N.D.	
50	N.D.	N.D.	N.D.	N.D.	
52	N.D.	N.D.	N.D.	N.D.	
53	N.D.	N.D.	N.D.	N.D.	

- 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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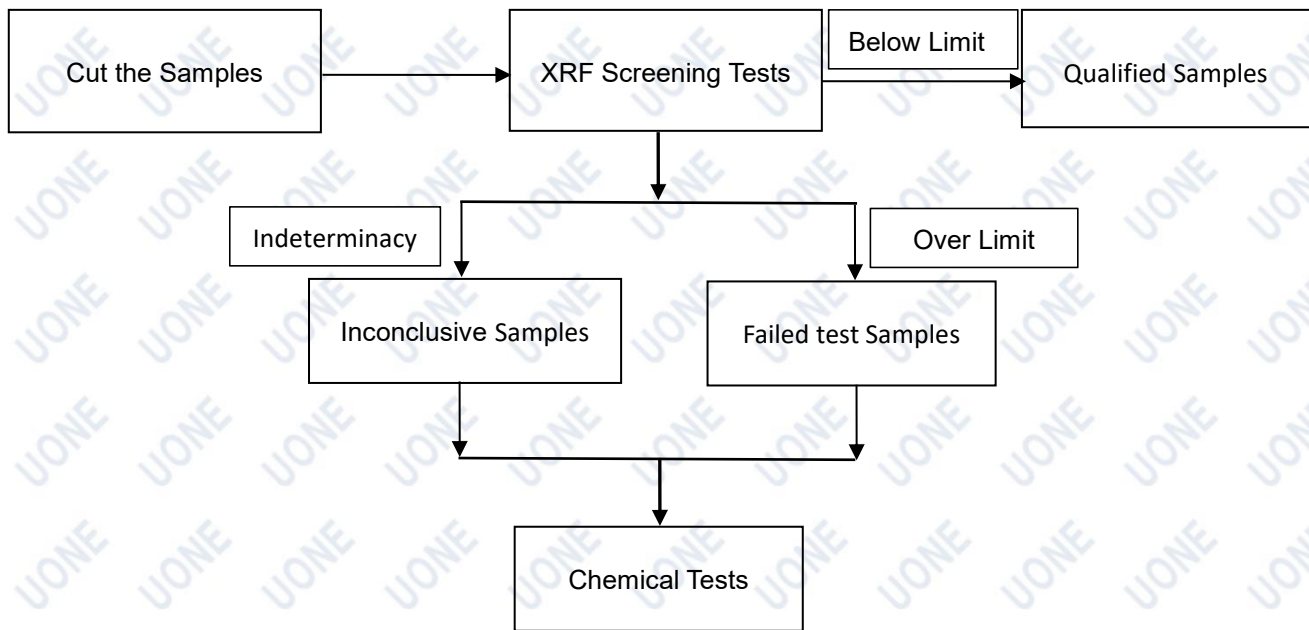
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Test Process Flow

1. XRF scan



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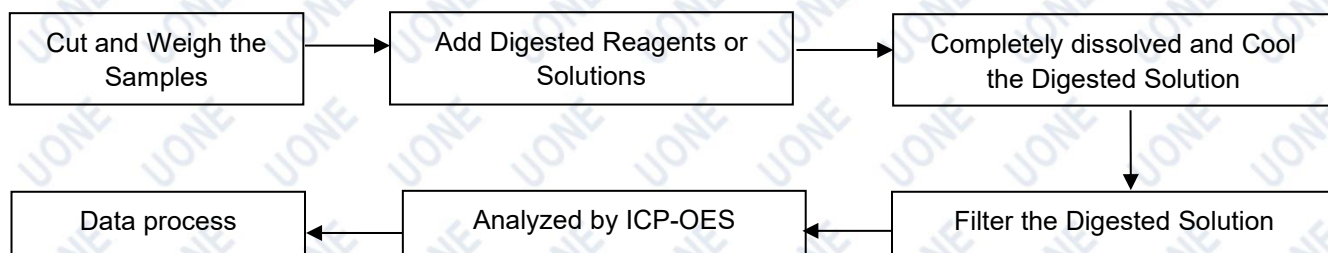
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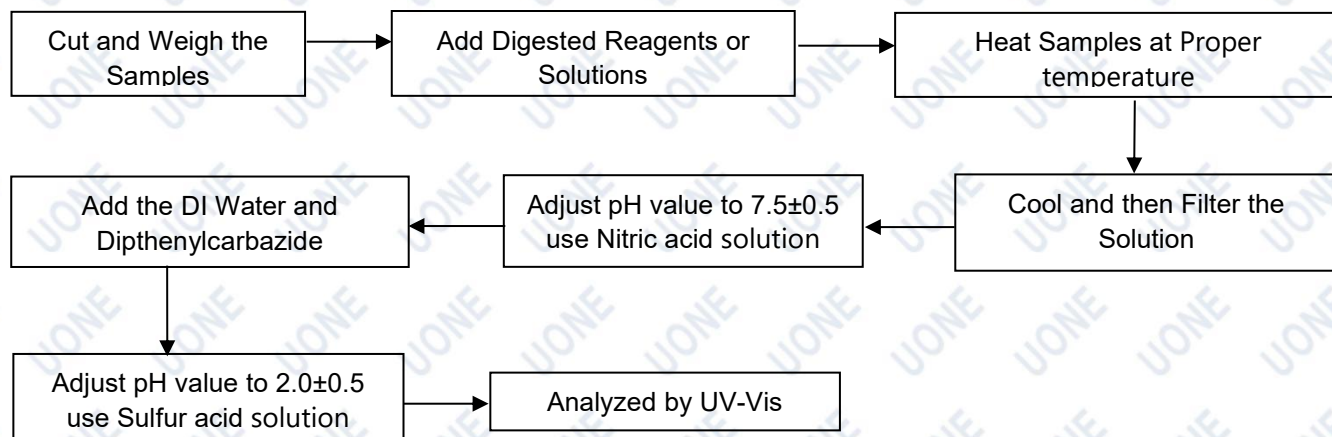
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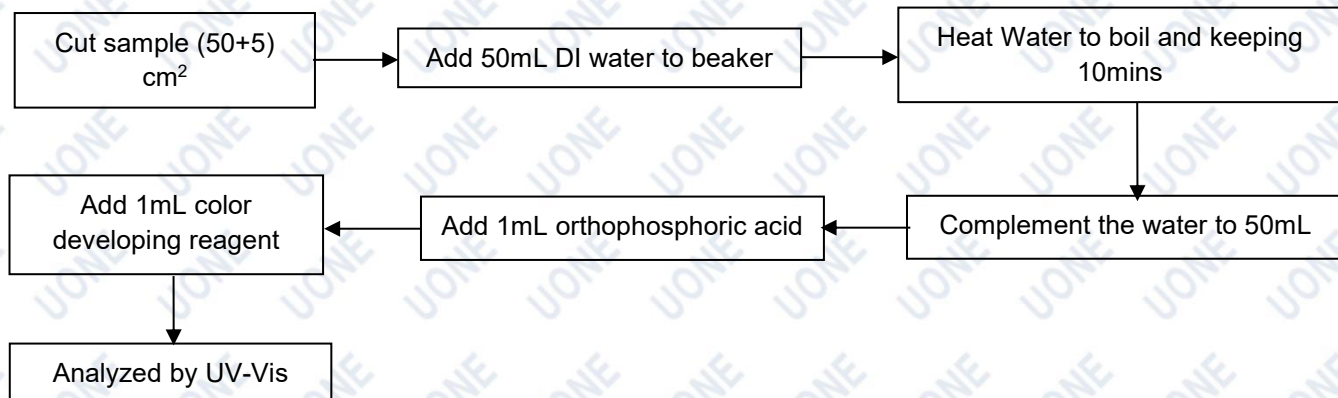
2. Lead, Cadmium, Mercury



3. Hexavalent Chromium (Non-metal)



Hexavalent Chromium (Metal)



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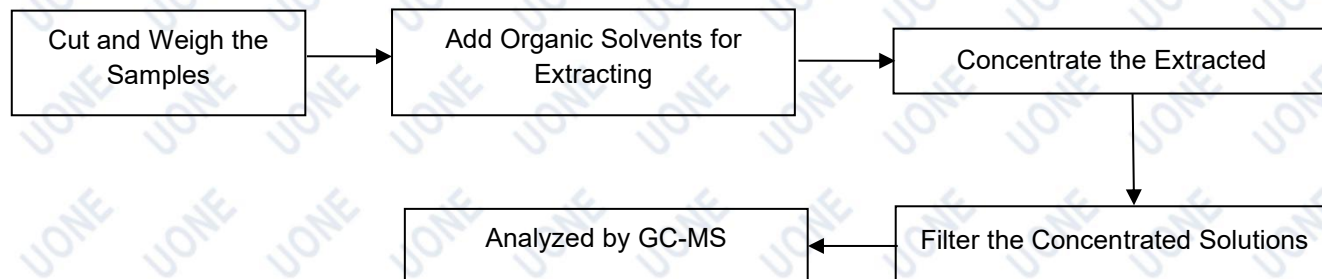
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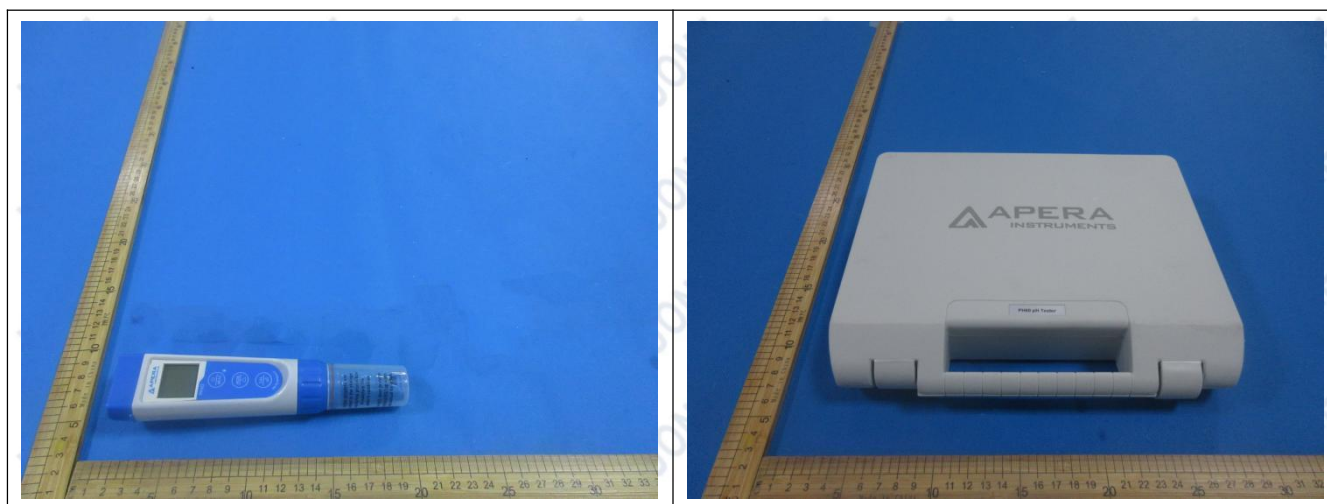
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4. PBBs & PBDEs, Phthalates



Photo(s) of Sample:



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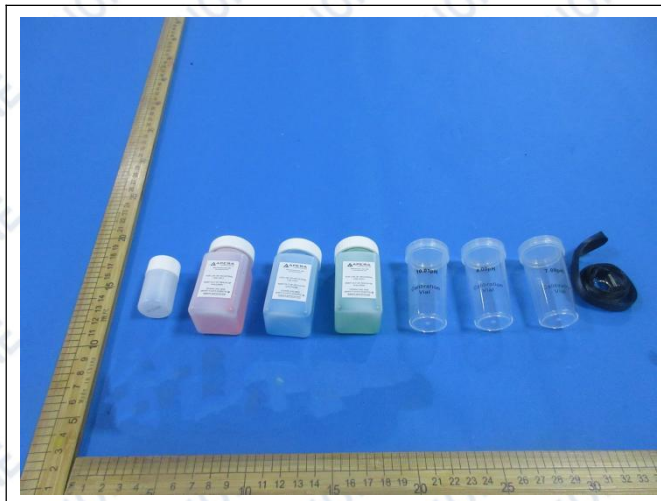
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*****End of Report*****

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Statement

1. The information as listed on the first page of this test report was all provided by the client except the received date, testing period, test result(s) and test request. The client shall be responsible for the representativeness of sample and authenticity of materials, for which UONE shall bear no responsibilities.
2. Unless otherwise stated the results shown in this report refer only the sample(s) tested and does not bear other joint and several liabilities.
3. This report is considered invalidated without the Special Seal for Inspection of the UONE, This report shall not be altered, increased or deleted.
4. Without written approval of UONE, this report shall not be reproduced in part or published as advertisement.
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