

# Test Report

Report No.: U00021904241877

Query Password: QW3066

Date: May 27, 2019

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**Applicant:** SHENZHEN ATTEN TECHNOLOGY CO., LTD.**Contact information:** 8F, Building 2, Senyang High-tech Park, 7 West Road High-tech Park, Guangming New District, Shenzhen, China.**The following sample(s) was (were) submitted and identified by client as:**

Sample Name : ST-2150D  
Model No. : ST-2150,ST-2080,ST-2080D  
Sample Received Date : May 7, 2019  
Testing Period : From May 7, 2019 to May 27, 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



Anna Li

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

(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	White plastic with black printing(label, cable, ST-2150D)	
2	Silvery metal(nut, ST-2150D)	
3	Silvery metal(screw, ST-2150D)	
4	Silvery metal(head, ST-2150D)	
5	Silvery metal(tube, ST-2150D)	
6	Silvery metal(tube, ST-2150D)	
7	White fabric(sleeve, ST-2150D)	
8	Black soft plastic(button, ST-2150D)	
9	Blue adhesive plastic(cover, ST-2150D)	
10	Black plastic(shell, ST-2150D)	
11	Black soft plastic(sleeve, ST-2150D)	
12	Black plastic(SR, ST-2150D)	
13	Black soft plastic(cable jacket, ST-2150D)	
14	Black soft plastic(sleeve, ST-2150D)	
15	White ceramic(stick, ST-2150D)	
16	White fabric(sleeve, ST-2150D)	
17	Silvery metal(wire, ST-2150D)	
18	Yellow soft plastic(wire jacket, ST-2150D)	
19	Red soft plastic(wire jacket, ST-2150D)	
20	Silvery metal(connector, ST-2150D)	
21	Blue soft plastic(wire jacket, ST-2150D)	
22	Yellow/green soft plastic(wire jacket, ST-2150D)	
23	Coffee soft plastic(wire jacket, ST-2150D)	

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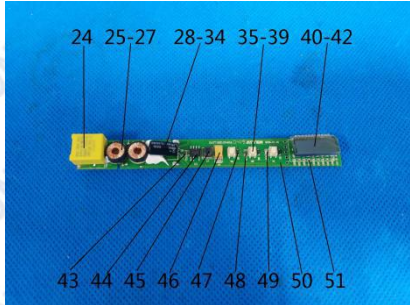
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Material No.	Description (Location)	Photo(s) of tested materials
24	Yellow body(capacitor, PCB)	
25	Black soft plastic(sleeve, inductor, PCB)	
26	Copper metal(coil, inductor, PCB)	
27	Black magnet(core, inductor, PCB)	
28	Black soft plastic with white printing(sleeve, capacitor, PCB)	
29	Silvery metal(shell, capacitor)	
30	Black soft rubber(base, capacitor)	
31	Brown paper with liquid(film, capacitor)	
32	Silvery metal(foil, capacitor)	
33	Dull silvery metal(foil, capacitor)	
34	Silvery metal(pin, capacitor)	
35	White plastic(button, switch, PCB)	
36	Silvery metal(cover, switch, PCB)	
37	Silvery metal(foil, switch, PCB)	
38	White plastic(shell, switch, PCB)	
39	Silvery metal(connector, switch, PCB)	
40	Transparent adhesive plastic(film, screen, PCB)	
41	Dull transparent glass(lens, screen, PCB)	
42	Silvery adhesive plastic(film, screen, PCB)	
43	Brown body(capacitor, PCB)	
44	Black body(IC, PCB)	
45	Dull grey body(inductor, PCB)	
46	Yellow body(capacitor, PCB)	
47	Black body(diode, PCB)	
48	Black body with white printing(resistor, PCB)	
49	White body(LED, PCB)	
50	Green PCB	
51	Silvery solder(PCB)	

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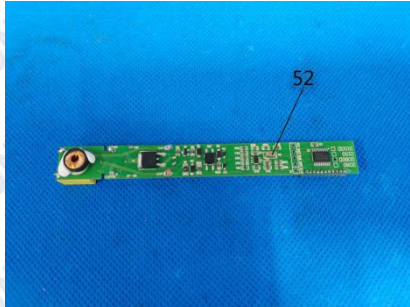
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Material No.	Description (Location)	Photo(s) of tested materials
52	Brown body(EC, PCB)	

## 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 <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	NA	—	—	PASS
3	BL	BL	BL	BL	NA	—	—	PASS
4	BL	BL	BL	BL	NA	—	—	PASS
5	BL	BL	BL	BL	NA	—	—	PASS
6	BL	BL	BL	BL	NA	—	—	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	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

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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	BL	—	—	PASS
20	BL	BL	BL	BL	NA	—	—	PASS
21	BL	BL	BL	BL	BL	—	—	PASS
22	BL	BL	BL	BL	BL	—	—	PASS
23	BL	BL	BL	BL	BL	—	—	PASS
24	BL	BL	BL	BL	BL	—	—	PASS
25	BL	BL	BL	BL	BL	—	—	PASS
26	BL	BL	BL	BL	NA	—	—	PASS
27	BL	BL	BL	BL	BL	—	—	PASS
28	BL	BL	BL	BL	BL	—	—	PASS
29	BL	BL	BL	BL	NA	—	—	PASS
30	BL	BL	BL	BL	BL	—	—	PASS
31	BL	BL	BL	BL	BL	—	—	PASS
32	BL	BL	BL	BL	NA	—	—	PASS
33	BL	BL	BL	BL	NA	—	—	PASS
34	BL	BL	BL	BL	NA	—	—	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	BL	—	—	PASS
39	BL	BL	BL	BL	NA	—	—	PASS
40	BL	BL	BL	BL	BL	—	—	PASS
41	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			
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	X	PBBs: N.D. PBDEs: N.D.	—	PASS
51	BL	BL	BL	BL	NA	—	—	PASS
52	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
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

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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)				
15	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
19	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.	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
30	N.D.	N.D.	N.D.	N.D.	PASS
31	N.D.	N.D.	N.D.	N.D.	PASS
35	N.D.	N.D.	N.D.	N.D.	PASS
38	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.	N.D.	N.D.	PASS
48	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)				
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

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

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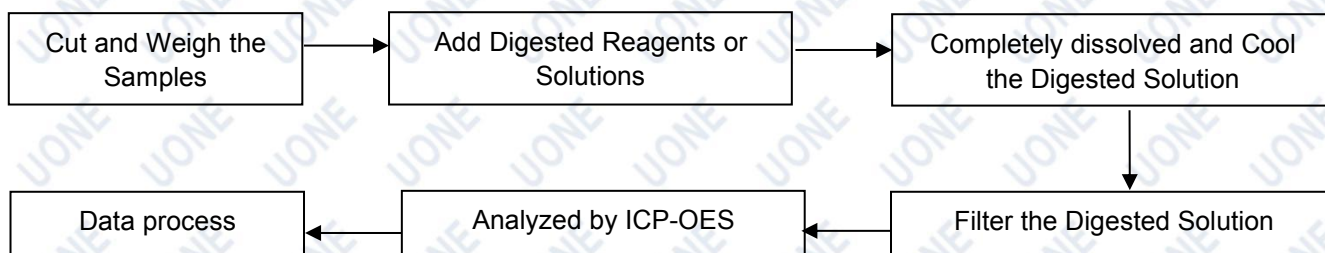
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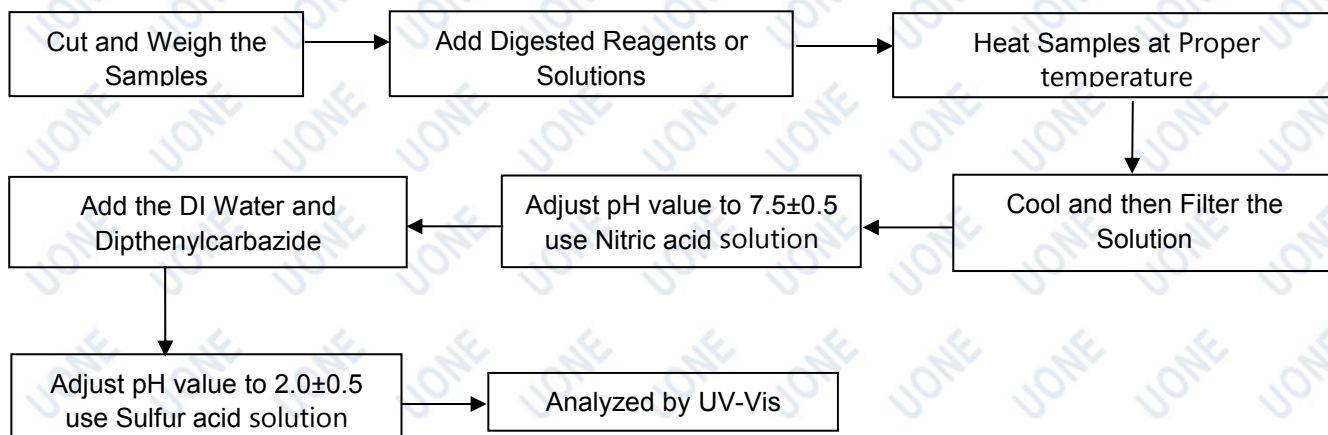
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## Test Process Flow

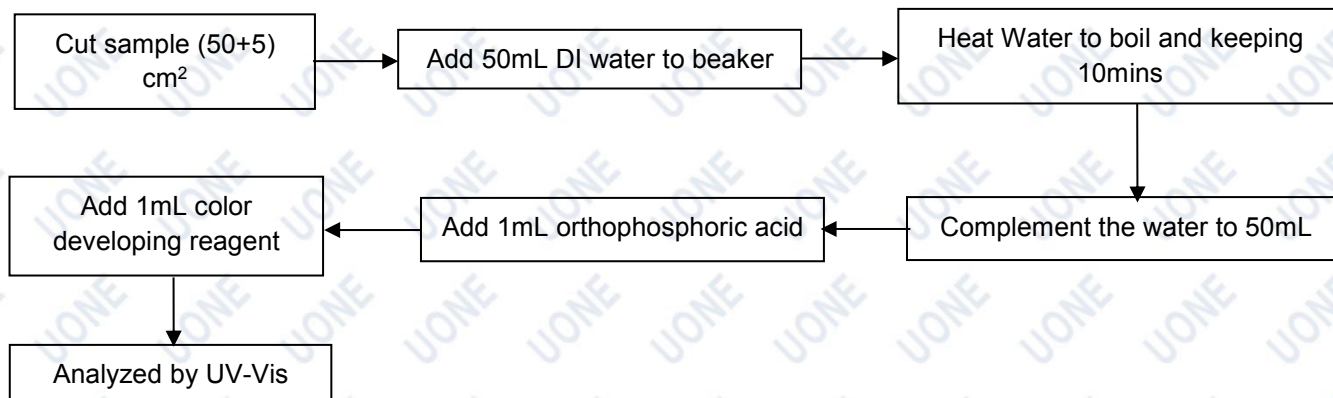
### 1. Lead, Cadmium, Mercury



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



### Hexavalent Chromium (Metal)



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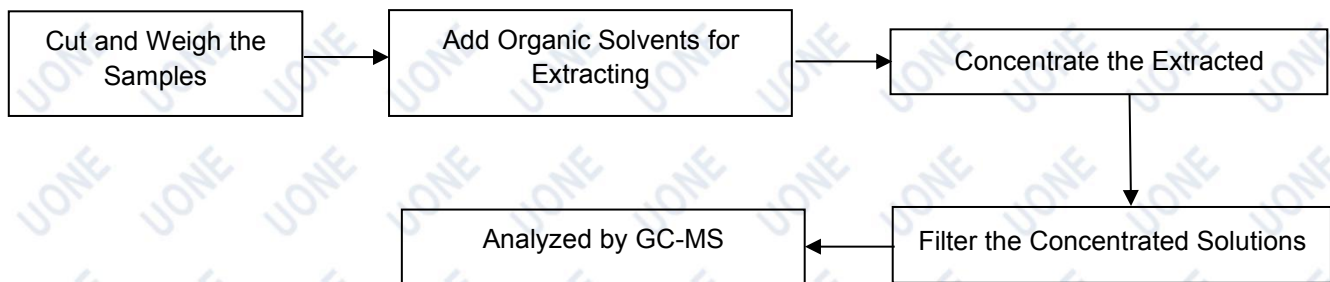
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## Test Process Flow (Continued):

### 3. PBBs & PBDEs, Phthalates



## Photo(s) of Sample:



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

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