

Applicant: Radiolink Electronic Limited

Contact information: 3/F, BLD2, KaiFeng Road 28#, ShangMeiLinFutian, ShenZhen, GuangDong, China

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

Sample Description : Receiver
Style/Item No. : R8EF, R8FM, R6FG, R6F, R7FG, R8F, R4FGM
Manufacturers : Radiolink Electronic Limited
Sample Received Date : Feb. 25, 2020
Testing Period : From Feb. 25, 2020 to Mar. 4, 2020
Test Request : Please refer to next page(s).
Test Result(s) : Please refer to next page(s).

Summary of test results:

TEST REQUEST

CONCLUSION

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 Diphenyl Ethers (PBDEs)
content by screening test and chemical test

PASS

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

PASS

Test Location: Shenzhen UONE Test Co., Ltd.

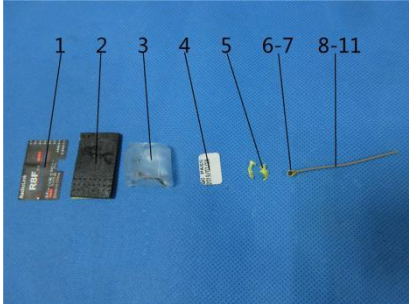
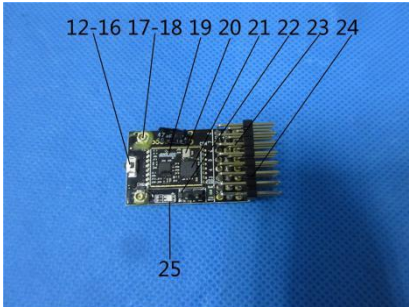
CNAS — Registration No.: CNAS L7924

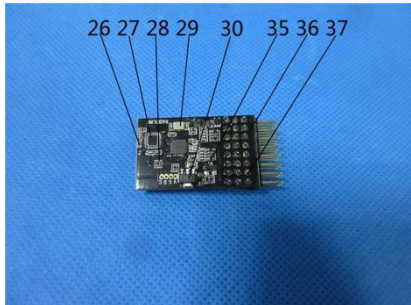
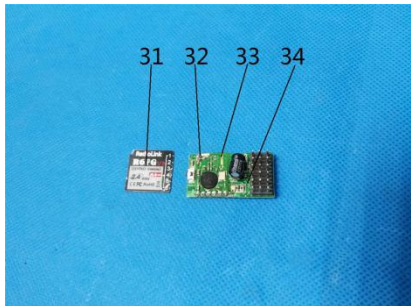
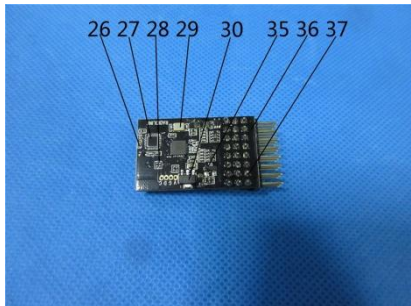
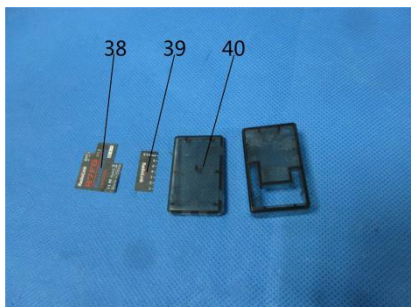
Signed for and on behalf of

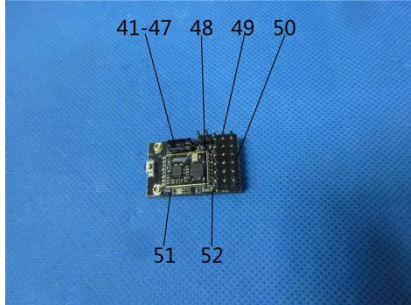
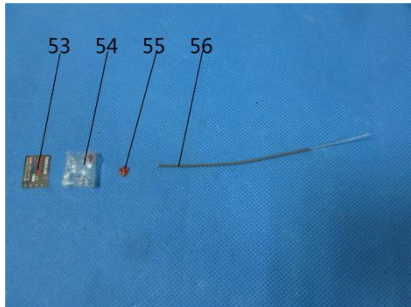
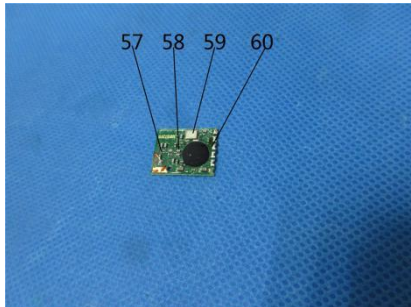


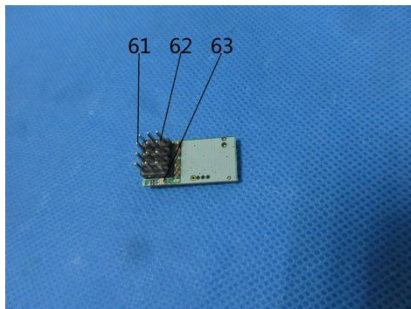
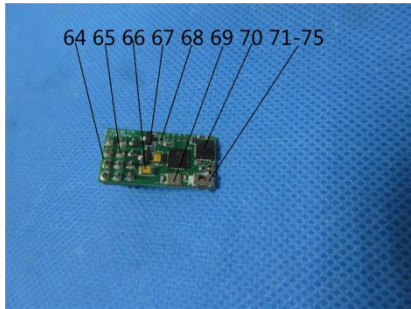
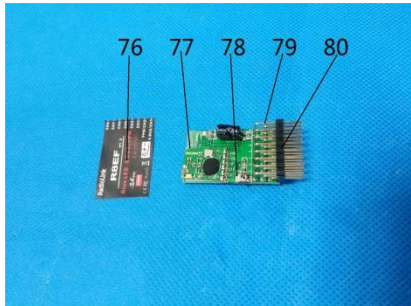
*****For further details, please refer to the following page(s)*****

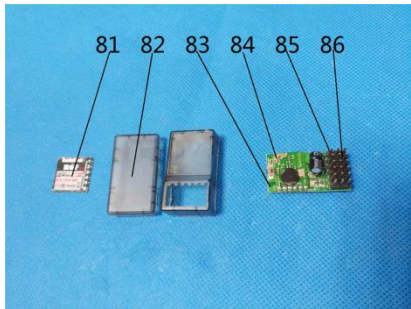
Test Material List

Material No.	Description (Location)	Photo(s) of tested materials
1	Black plastic with multicolor printing(label)	
2	Black adhesive foam(cushion)	
3	Translucent soft plastic(sleeve)	
4	White adhesive paper with black printing(label)	
5	Yellow glue	
6	Golden metal(antenna plug)	
7	Black plastic(base, antenna plug)	
8	Grey soft plastic(wire jacket)	
9	Silvery metal(shield)	
10	Transparent soft plastic(interlayer)	
11	Silvery metal(wire)	
12	Black plastic(button, switch)	
13	Silvery metal(cover, switch)	
14	Silvery metal(foil, switch)	
15	Black plastic(base, switch)	
16	Silvery metal(connector, switch)	
17	Golden metal(antenna socket)	
18	White plastic(base, antenna socket)	
19	Black PCB	
20	Silvery body(crystal, PCB)	
21	Black body(IC, PCB)	
22	Black body(diode, PCB)	
23	Silvery metal(pin, connector)	
24	Black plastic(pin holder, connector)	
25	Transparent body(LED, PCB)	

Material No.	Description (Location)	Photo(s) of tested materials
26	Brown body(capacitor, PCB)	
27	Black body(IC, PCB)	
28	Black body(resistor, PCB)	
29	Silvery body(crystal, PCB)	
30	Black body(triode, PCB)	
31	Black body with multicolor printing(label, PCB)	
32	Silvery solder(PCB)	
33	Green PCB	
34	Green PCB	
35	Black body(triode, PCB)	
36	Black PCB	
37	Silvery solder(PCB)	
38	Black body with multicolor printing(label, PCB)	
39	Black body with multicolor printing(label, PCB)	
40	Translucent/black plastic(shell)	

Material No.	Description (Location)	Photo(s) of tested materials
41	Black plastic with white printing(sleeve, capacitor)	
42	Silvery metal(shell, capacitor)	
43	Black soft rubber(base, capacitor)	
44	Brown paper with liquid(film, capacitor)	
45	Silvery metal(foil, capacitor)	
46	Dull silvery metal(foil, capacitor)	
47	Silvery metal(pin, capacitor)	
48	Black body(resistor, PCB)	
49	Silvery metal(pin, connector)	
50	Black plastic(pin holder, connector)	
51	Black PCB	
52	Silvery solder(PCB)	
53	Black plastic with multicolor printing(label)	
54	Translucent soft plastic(sleeve)	
55	Red glue	
56	Dark grey soft plastic(wire jacket)	
57	Black body(resistor, PCB)	
58	Brown body(capacitor, PCB)	
59	Silvery body(crystal, PCB)	
60	Green PCB	

Material No.	Description (Location)	Photo(s) of tested materials
61	Silvery metal(pin, connector)	
62	Black plastic(pin holder, connector)	
63	Transparent body(LED, PCB)	
64	Green PCB	
65	Silvery solder(PCB)	
66	Brown body(capacitor, PCB)	
67	Black body(triode, PCB)	
68	Black body(resistor, PCB)	
69	Silvery body(crystal, PCB)	
70	Black body(IC, PCB)	
71	Black plastic(button, switch)	
72	Silvery metal(cover, switch)	
73	Silvery metal(foil, switch)	
74	Black plastic(base, switch)	
75	Silvery metal(connector, switch)	
76	Black plastic with multicolor printing(label)	
77	Green PCB	
78	Silvery solder(PCB)	
79	Silvery metal(pin, connector)	
80	Black plastic(pin holder, connector)	

Material No.	Description (Location)	Photo(s) of tested materials
81	Black plastic with multicolor printing(label)	
82	Translucent/black plastic(shell)	
83	Green PCB	
84	Silvery solder(PCB)	
85	Silvery metal(pin, connector)	
86	Black plastic(pin holder, connector)	

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	NA	—	—	PASS
7	BL	BL	BL	BL	BL	—	—	PASS
8	BL	BL	BL	BL	BL	—	—	PASS
9	BL	BL	BL	BL	NA	—	—	PASS
10	BL	BL	BL	BL	BL	—	—	PASS
11	BL	BL	BL	BL	NA	—	—	PASS
12	BL	BL	BL	BL	BL	—	—	PASS
13	BL	BL	BL	BL	NA	—	—	PASS
14	BL	BL	BL	BL	NA	—	—	PASS
15	BL	BL	BL	BL	BL	—	—	PASS
16	BL	BL	BL	BL	NA	—	—	PASS

No.	EDXRF Result ⁽¹⁾					Chemical Result ⁽²⁾ (mg/kg)	Remark ⁽³⁾	Conclusion
	Pb	Cd	Hg	Cr	Br			
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	BL	—	—	PASS
21	BL	BL	BL	BL	BL	—	—	PASS
22	BL	BL	BL	BL	BL	—	—	PASS
23	BL	BL	BL	BL	NA	—	—	PASS
24	BL	BL	BL	BL	X	PBBs: N.D. PBDEs: N.D.	—	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	NA	—	—	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	NA	—	—	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	NA	—	—	PASS
43	BL	BL	BL	BL	BL	—	—	PASS
44	BL	BL	BL	BL	BL	—	—	PASS
45	BL	BL	BL	BL	NA	—	—	PASS

No.	EDXRF Result ⁽¹⁾					Chemical Result ⁽²⁾ (mg/kg)	Remark ⁽³⁾	Conclusion
	Pb	Cd	Hg	Cr	Br			
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	BL	—	—	PASS
52	BL	BL	BL	BL	NA	—	—	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
61	BL	BL	BL	BL	NA	—	—	PASS
62	BL	BL	BL	BL	X	PBBs: N.D. PBDEs: N.D.	—	PASS
63	BL	BL	BL	BL	BL	—	—	PASS
64	BL	BL	BL	BL	BL	—	—	PASS
65	BL	BL	BL	BL	NA	—	—	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	BL	—	—	PASS
72	BL	BL	BL	BL	NA	—	—	PASS
73	BL	BL	BL	BL	NA	—	—	PASS
74	BL	BL	BL	BL	BL	—	—	PASS

No.	EDXRF Result ⁽¹⁾					Chemical Result ⁽²⁾ (mg/kg)	Remark ⁽³⁾	Conclusion
	Pb	Cd	Hg	Cr	Br			
75	BL	BL	BL	BL	NA	—	—	PASS
76	BL	BL	BL	BL	BL	—	—	PASS
77	BL	BL	BL	BL	BL	—	—	PASS
78	BL	BL	BL	BL	NA	—	—	PASS
79	BL	BL	BL	BL	NA	—	—	PASS
80	BL	BL	BL	BL	X	PBBs: N.D. PBDEs: N.D.	—	PASS
81	BL	BL	BL	BL	BL	—	—	PASS
82	BL	BL	BL	BL	BL	—	—	PASS
83	BL	BL	BL	BL	BL	—	—	PASS
84	BL	BL	BL	BL	NA	—	—	PASS
85	BL	BL	BL	BL	NA	—	—	PASS
86	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.

③The EDXRF screening test for RoHS elements – The reading may be different to the actual content in the sample 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 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
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
7	N.D.	N.D.	N.D.	N.D.	PASS
8	N.D.	N.D.	N.D.	N.D.	PASS
10	N.D.	N.D.	N.D.	N.D.	PASS
12	N.D.	N.D.	N.D.	N.D.	PASS
15	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
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
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
33	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	
RL (mg/kg)	30	30	30	30	
Material No.	Result (mg/kg)				
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
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
43	N.D.	N.D.	N.D.	N.D.	PASS
44	N.D.	N.D.	N.D.	N.D.	PASS
48	N.D.	N.D.	N.D.	N.D.	PASS
50	N.D.	N.D.	N.D.	N.D.	PASS
51	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	216	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
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
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

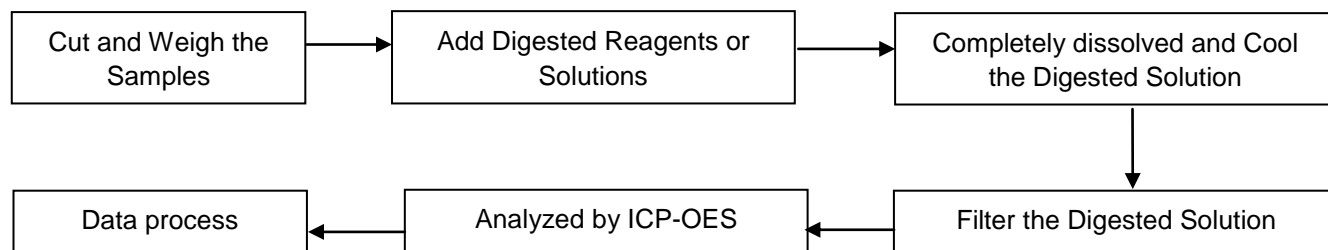
Substances	DBP	BBP	DEHP	DIBP	Conclusion
CAS No.	84-74-2	85-68-7	117-81-7	84-69-5	
Limit (mg/kg)	1000	1000	1000	1000	
RL (mg/kg)	30	30	30	30	
Material No.	Result (mg/kg)				
69	N.D.	N.D.	N.D.	N.D.	PASS
70	N.D.	N.D.	N.D.	N.D.	PASS
71	N.D.	N.D.	N.D.	N.D.	PASS
74	N.D.	N.D.	N.D.	N.D.	PASS
76	N.D.	N.D.	N.D.	N.D.	PASS
77	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
82	N.D.	N.D.	N.D.	N.D.	PASS
83	N.D.	N.D.	N.D.	N.D.	PASS
86	N.D.	N.D.	N.D.	N.D.	PASS

Note:

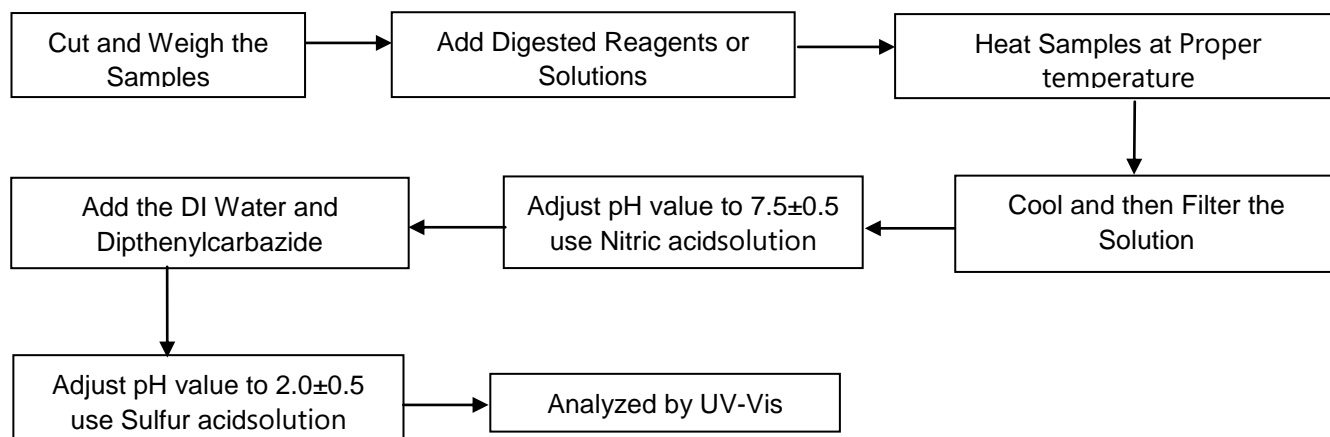
1. mg/kg = milligram per kilogram (ppm).
2. RL = report limit.
3. N.D.=not detected(less than RL).

Test Process Flow

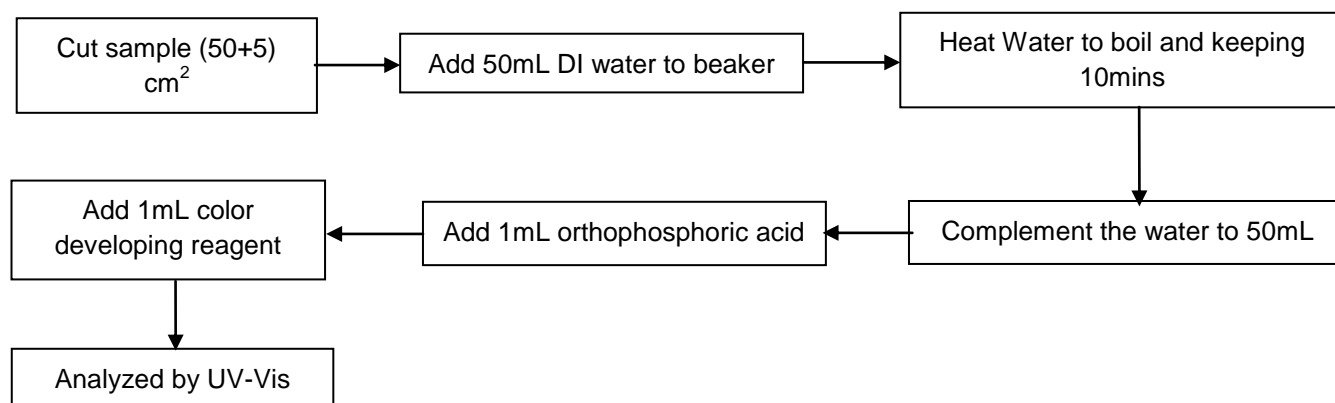
1. Lead, Cadmium, Mercury



2. Hexavalent Chromium (Non-metal)

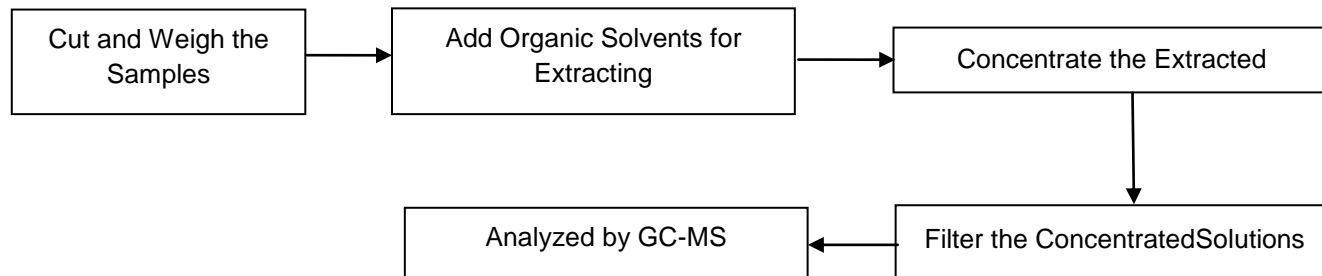


Hexavalent Chromium (Metal)

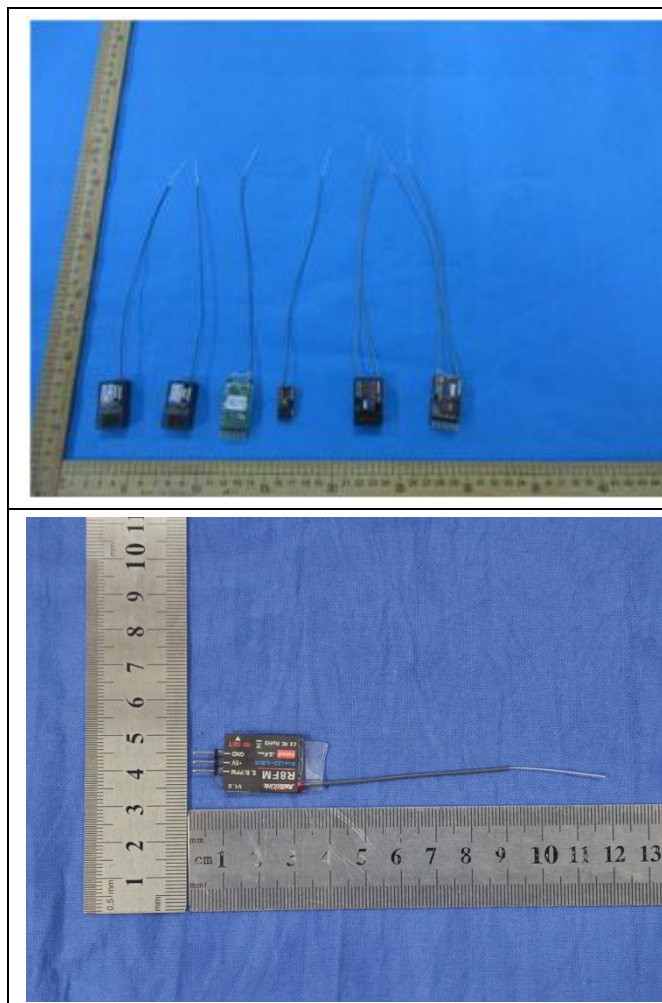


Test Process Flow (Continued):

3. PBBs & PBDEs, Phthalates



Photo(s) of Sample:



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