

TEST REPORT

<u>APPLICANT</u>	:	
<u>ADDRESS</u>	:	
<u>SAMPLE DESCRIPTION</u>	:	Vacuum Cleaner
<u>TEST ITEM NO.</u>	:	MC616, MC616A
<u>REFERENCE ITEM NO.</u>	:	MC603A, MC615, MC607A, MC607, MC610, MC604, MC609, MC602, MC605, MC606, MC611, MC612, MC617, MC613
<u>COUNTRY OF ORIGIN</u>	:	China
<u>SAMPLE RECEIVED DATE</u>	:	19-Apr-2019
<u>SAMPLE RESUBMISSION DATE</u>	:	29-May-2019
<u>TURN AROUND TIME</u>	:	19-Apr-2019 to 05-Jun-2019
<u>TEST SPECIFICATION</u>	:	Total concentration of Lead, Cadmium, Mercury, Chromium VI, Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs) , Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP) , Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP) in Electrical and Electronic Equipment in accordance with EC Directive 2011/65/EU and its amendment Directive (EU) 2015/863 (RoHS)
<u>CONCLUSION</u>	:	Based on the analysis on the submitted sample(s), the test results do comply with the concentration limits as specified in Annex II to Directive 2011/65/EU and its amendment Directive (EU) 2015/863

The reference item(s) has not been tested in current report, but according to applicant's request, the item number has also been included.

The following test item(s) was/were performed on submitted sample(s) and/or component(s) confirmed by applicant

Eurofins (Hangzhou) contact information

Customer service: FloraZhuang@eurofins.com / +86 21 61819120 / +86 13761635324

***** FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S) *****

Signed for and on behalf of
Eurofins Product Testing Service (Shanghai) Co., Ltd. Hangzhou Branch



Lincoln Shi
Assistant Lab Manager of HZ Chemical Laboratory

Results obtained refer only to samples, products or material received in Laboratory, as described in point related to sample description, and tested in conditions shown in present report. Eurofins Product Testing Service (Shanghai) Co., Ltd ensures that this job has been performed according to our Quality System and complying contract and legal conditions. If you happen to have any comments, please do it by sending email to info.hz@eurofins.com and referring to this report number. Reproduction of this document is only valid if it is done completely and under the written permission of Eurofins Product Testing Service (Shanghai) Co., Ltd. If you happen to have any complaints, please do it by sending email to chinacomplaint@eurofins.com and referring to this report number.

TEST SAMPLE PHOTO



EFHZ19041788-CG-01

TO BE CONTINUED

REFERENCE SAMPLE PHOTO(S)

	
MC603A	MC615
	
MC607A	MC607

The reference sample(s) has not been tested in current report, but according to customer's request, the picture has also been included. For sample tested in current report, please refer to "Test sample photo".

TO BE CONTINUED

REFERENCE SAMPLE PHOTO(S)

	
MC610	MC604
	
MC609	MC602

The reference sample(s) has not been tested in current report, but according to customer's request, the picture has also been included. For sample tested in current report, please refer to "Test sample photo".

TO BE CONTINUED

REFERENCE SAMPLE PHOTO(S)

 <p>杀菌尘盒</p> <p>机身开关</p> <p>尘仓开启按钮</p>	
<p>MC605</p>	<p>MC606</p>
	
<p>MC611</p>	<p>MC612</p>
	
<p>MC613</p>	<p>MC617</p>

The reference sample(s) has not been tested in current report, but according to customer's request, the picture has also been included. For sample tested in current report, please refer to "Test sample photo".

TO BE CONTINUED

COMPONENT PHOTO(S)



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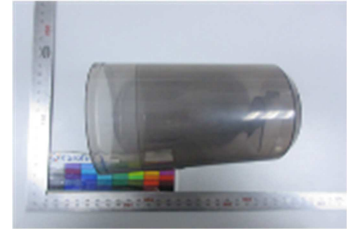
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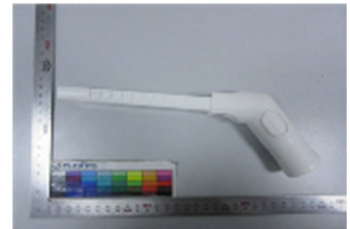
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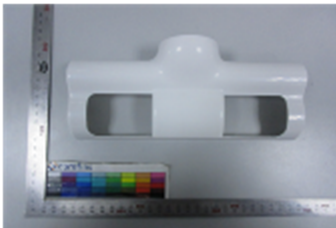
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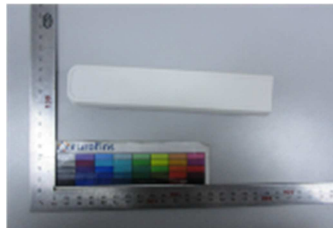
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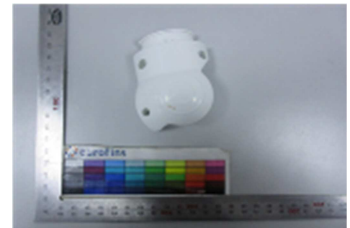
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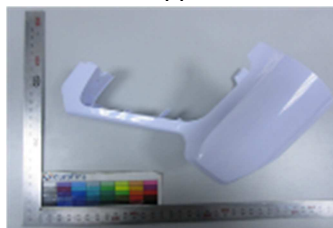
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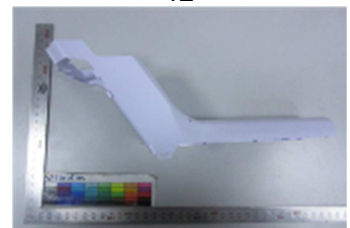
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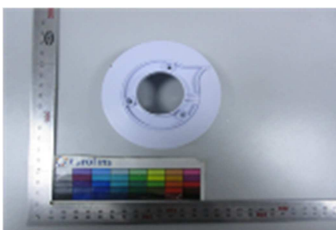
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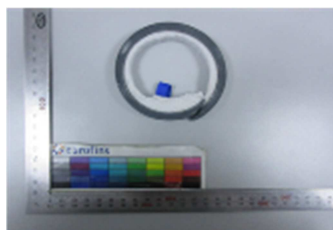
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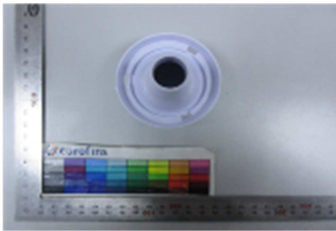
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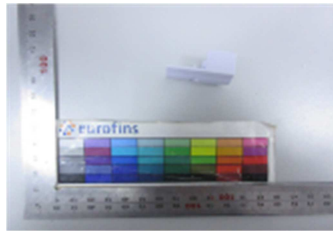
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TO BE CONTINUED

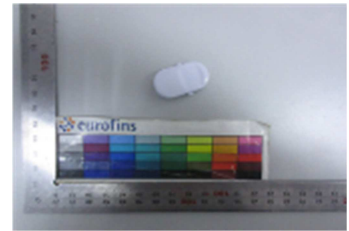
COMPONENT PHOTO(S)



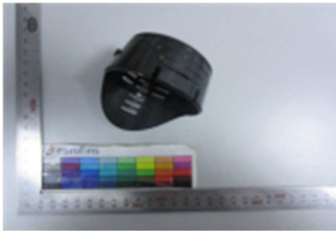
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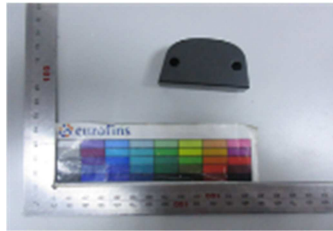
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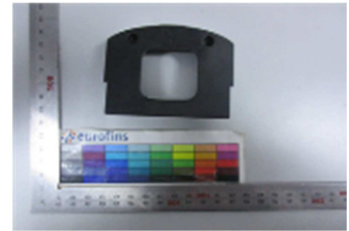
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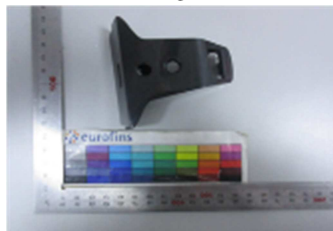
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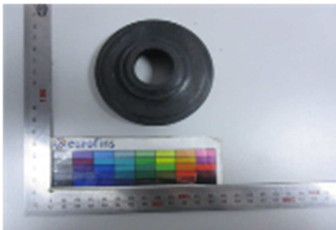
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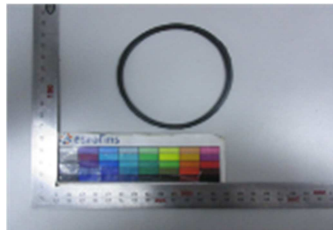
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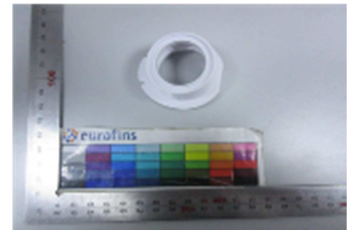
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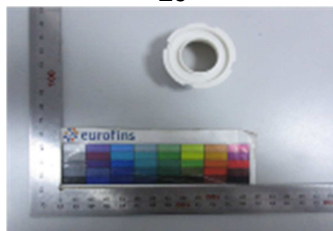
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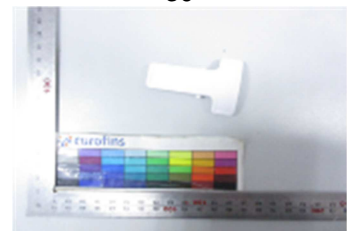
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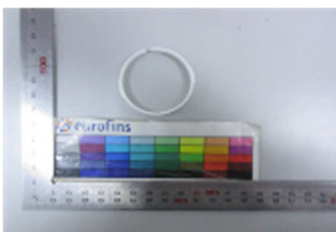
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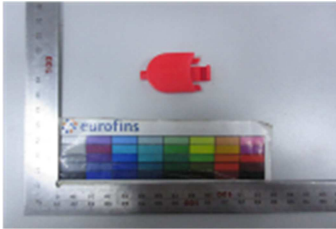
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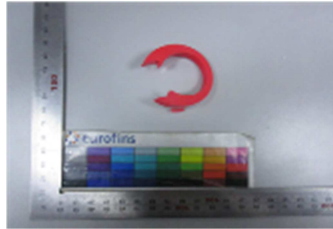
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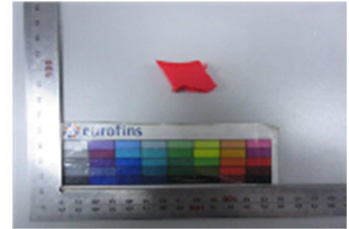
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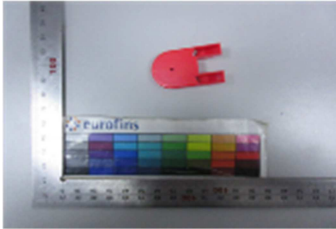
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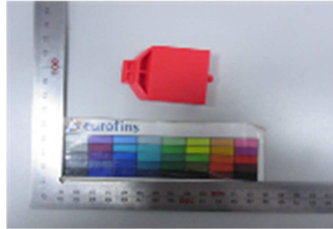
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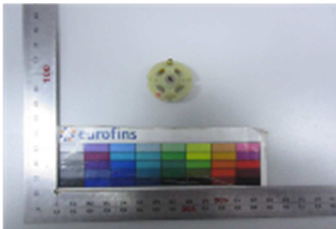
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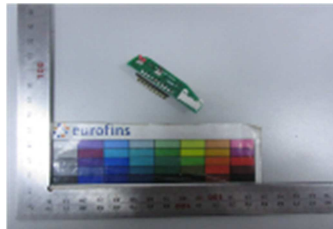
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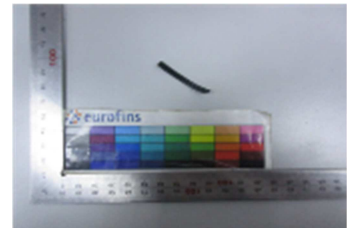
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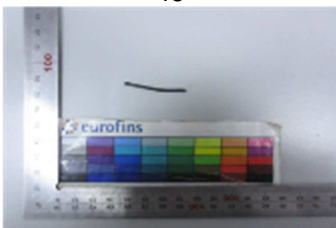
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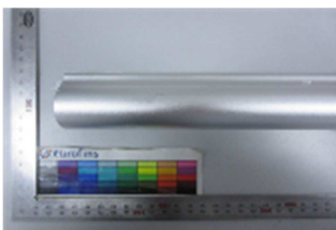
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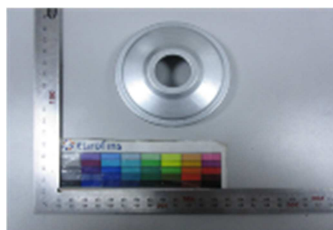
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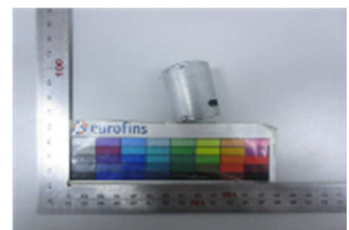
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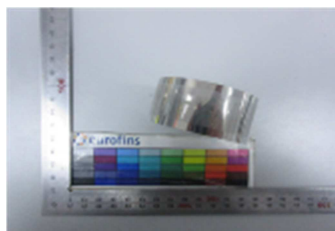
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COMPONENT PHOTO(S)



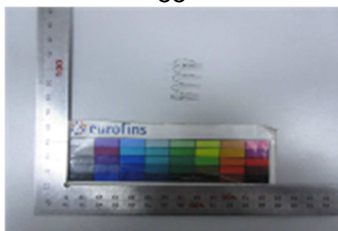
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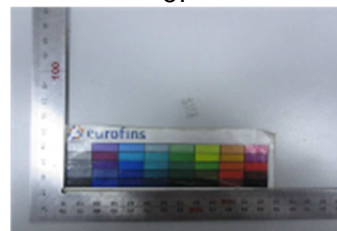
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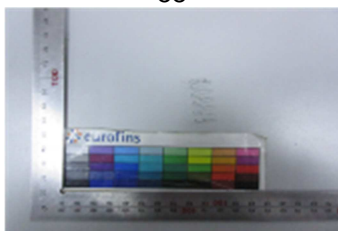
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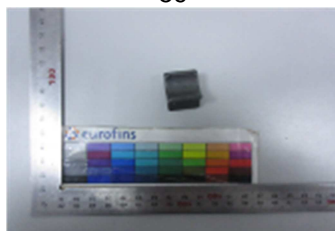
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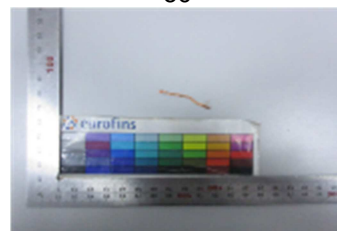
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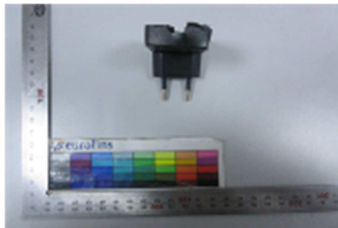
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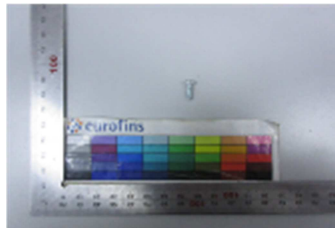
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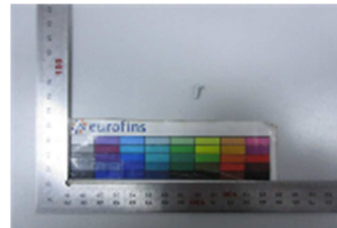
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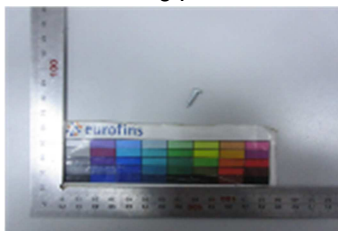
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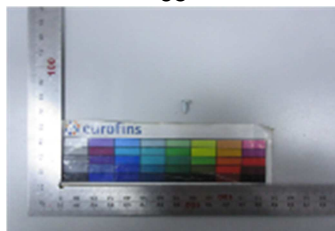
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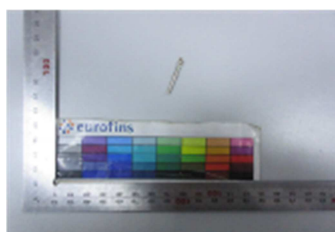
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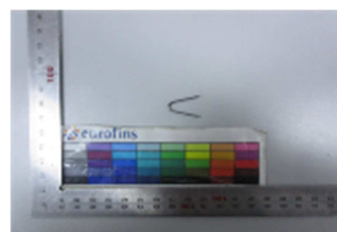
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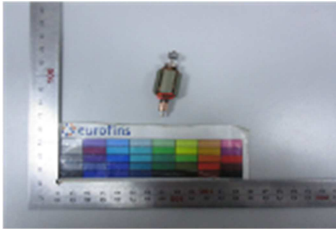
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TO BE CONTINUED

COMPONENT PHOTO(S)



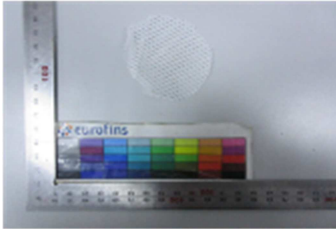
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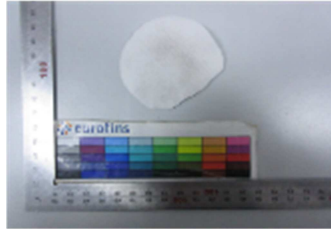
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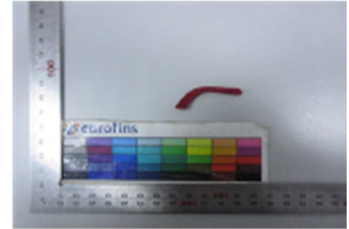
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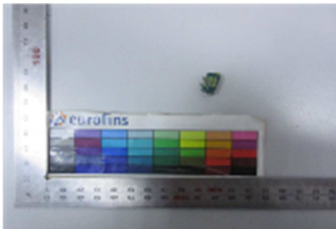
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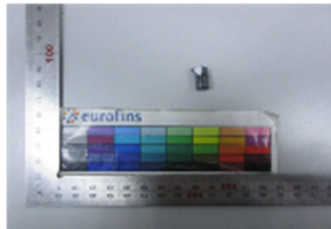
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TO BE CONTINUED

TEST RESULT

Part 1

A. Screening Test by XRF Spectroscopy

As specified by client, to analyze the contents of Lead, Cadmium, Mercury, Chromium, Bromine in the submitted sample by XRF. Screening limits in mg/kg for regulated elements in various matrices according to IEC 62321-3-1:2013

No.	Component	Test Results (mg/kg)				
		Cd	Pb	Hg	Cr	Br
		Limit (mg/kg)				
		100	1000	1000	Cr(VI): 1000	PBB:1000 PBDE:1000
1	Black plastic case 1	ND	ND	ND	ND	ND
2	Black plastic case 2	ND	ND	ND	ND	ND
3	Black plastic case 3	13	ND	ND	ND	ND
4	Black plastic case 4	ND	ND	ND	ND	ND
5	Black plastic case 5	ND	ND	ND	ND	ND
6	Transparent black plastic block	ND	ND	ND	ND	ND
7	Transparent plastic block	ND	ND	ND	ND	ND
8	White plastic block 1	ND	ND	ND	ND	ND
9	White plastic block 2	ND	ND	ND	ND	ND
10	White plastic block 3	ND	ND	ND	ND	ND
11	White plastic block 4	ND	ND	ND	ND	ND
12	White plastic block 5	ND	ND	ND	ND	ND
13	White plastic block 6	ND	ND	ND	ND	ND
14	Light blue plastic block 1	ND	ND	ND	ND	ND
15	Light blue plastic block 2	ND	ND	ND	ND	ND
16	Light blue plastic block 3	ND	ND	ND	ND	ND
17	Soft grey plastic block	ND	ND	ND	ND	ND
18	Light blue plastic block 4	ND	ND	ND	ND	ND
19	Light blue plastic block 5	ND	ND	ND	ND	ND
20	Light blue plastic block 6	ND	ND	ND	ND	ND
21	Light blue plastic block 7	ND	ND	ND	ND	ND
22	Black plastic block 1	ND	ND	ND	134	ND
23	Black plastic block 2	13	213	ND	ND	NC
24	Black plastic block 3	ND	ND	ND	ND	ND
25	Black plastic block 4	ND	ND	ND	ND	NC
26	Black plastic block 5	ND	ND	ND	ND	ND
27	Black plastic block 6	ND	ND	ND	ND	ND
28	Black soft plastic block	18	ND	ND	ND	ND
29	Black soft plastic ring	ND	ND	ND	ND	ND
30	White plastic block 1	ND	ND	ND	ND	ND
31	White plastic block 2	ND	ND	ND	ND	ND
32	White plastic block 3	ND	ND	ND	ND	ND
33	White plastic block 4	ND	ND	ND	ND	ND
34	White plastic block 5	ND	ND	ND	ND	ND
35	White plastic block 6	ND	ND	ND	ND	ND
36	Red plastic block 1	ND	ND	ND	ND	ND
37	Red plastic block 2	ND	ND	ND	ND	ND
38	Red plastic block 3	ND	ND	ND	ND	ND
39	Red plastic block 4	ND	ND	ND	ND	ND
40	Red plastic block 5	ND	ND	ND	ND	ND

41	Red plastic block 6	ND	ND	ND	ND	ND
42	Red plastic block 7	ND	ND	ND	ND	ND
43	Beige plastic block	ND	ND	ND	ND	NC
44	Circuit board 1	ND	ND	ND	ND	NC
45	Circuit board 2	ND	ND	ND	ND	NC
46	Circuit board 3	26	ND	ND	ND	NC
47	Circuit board 4	ND	ND	ND	501	NC
48	Black soft plastic wire cover 1	ND	ND	ND	172	ND
49	Black soft plastic wire cover 2	ND	ND	ND	ND	ND
50	Red soft plastic wire cover	ND	ND	ND	ND	ND
51	Silver metal solder	ND	ND	ND	NC	NA
52	Silver metal tube	ND	ND	ND	NC	NA
53	Silver metal block 1	ND	ND	ND	NC	NA
54	Silver metal block 2	ND	ND	ND	NC	NA
55	Silver metal block 3	ND	ND	ND	NC	NA
56	Silver wire mesh	ND	ND	ND	NC	NA
57	Silver metal hoop	ND	ND	ND	NC	NA
58	Silver metal spring 1	ND	ND	ND	NC	NA
59	Silver metal spring 2	ND	ND	ND	NC	NA
60	Silver metal spring 3	ND	ND	ND	NC	NA
61	Silver metal spring 4	ND	ND	ND	NC	NA
62	Black magnet	ND	ND	ND	NC	NA
63	Copper wire	ND	ND	ND	NC	NA
64	Silver metal bolt 1	ND	NC	ND	NC	NA
65	Silver metal screw 1	ND	ND	ND	NC	NA
66	Silver metal screw 2	ND	137	ND	NC	NA
67	Silver metal screw 3	ND	ND	ND	NC	NA
68	Silver metal screw 4	ND	ND	ND	NC	NA
69	Silver metal screw 5	ND	ND	ND	NC	NA
70	Silver metal screw 6	ND	ND	ND	NC	NA
71	Silver metal bolt 1	ND	ND	ND	NC	NA
72	Silver metal spring	ND	ND	ND	NC	NA
73	Copper wire	ND	ND	ND	NC	NA
74	Silver metal block 4	ND	ND	ND	NC	NA
75	Silver metal shaft	ND	ND	ND	NC	NA
76	White fabric	ND	ND	ND	375	ND
77	The white fabric	ND	ND	ND	ND	ND
78	The red fabric	ND	ND	ND	ND	ND
79	Green electronic components	ND	ND	ND	ND	ND
80	Black electronic component	16	ND	ND	ND	ND

TO BE CONTINUED

Abbreviation:	Pb	denotes Lead
	Cd	denotes Cadmium
	Hg	denotes Mercury
	Cr	denotes Chromium
	Cr(VI)	denotes Chromium(VI)
	Br	denotes Bromine
	PBBs	denotes Total Polybrominated Biphenyls
	PBDEs	denotes Total Polybrominated Diphenyl Ethers
	NA	denotes Not Applicable
	ND	denotes Not Detected (Cd<10mg/kg, Pb/ Hg/ Cr<100mg/kg, Br<300mg/kg)
	NC	denotes Not Conclusive

XRF Screening limits for different materials:

Element	Polymers	Metals	Composite Material
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	$BL \leq (300-3\sigma) < X$	/	$BL \leq (250-3\sigma) < X$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

Note:

BL= Below limit

X = The region where further investigation is necessary

OL = Over limit

3σ = The repeatability of the analyzer at the action level

LOD = Limit of detection

XRF testing results are only used for reference.

B. Confirmation Test by Wet Chemistry

Tested Item(s)	Test Method	Measured Equipment	MDL
Lead (Pb) /Cadmium (Cd)	IEC 62321-5:2013	ICP-OES	2 mg/kg
Mercury (Hg)	IEC 62321-4:2013	ICP-OES	2 mg/kg
Hexavalent Chromium (Cr(VI))	IEC 62321-7-1:2015	UV-Vis	0.01μg/cm ²
	IEC62321-7-2:2017		10 mg/kg
Polybrominated Biphenyls (PBBs)	IEC 62321-6: 2015	GC-MS	50 mg/kg
Polybrominated DiphenylEthers (PBDEs)			

Component No.	Boiling-water-extraction for Cr(VI) (*1)
51	Negative
52	Negative
53	Negative
54	Negative
55	Negative

TO BE CONTINUED

Component No.	Boiling-water-extraction for Cr(VI) (*1)
56	Negative
57	Negative
58	Negative
59	Negative
60	Negative
61	Negative
62	Negative
63	Negative
64	Negative
65	Negative
66	Negative
67	Negative
68	Negative
69	Negative
70	Negative
71	Negative
72	Negative
73	Negative
74	Negative
75	Negative

Remark:

(*1) The screening result of Chromium(VI) was found in the inconclusive region, Thus the Chromium(VI) content in surface layer have been confirmed with reference to IEC 62321-7-1:2015.

Negative - The Cr(VI) concentration is below 0.10µg/cm².The coating is considered a non-Cr(VI) based coating.

Component No.	Test Results (mg/kg)					
	Cd	Pb	Hg	Cr (VI)	PBBs	PBDEs
	Limit (mg/kg)					
	100	1000	1000	1000	1000	1000
23	-	-	-	-	ND	ND
25	-	-	-	-	ND	ND
43	-	-	-	-	ND	ND
44	-	-	-	-	ND	ND
45	-	-	-	-	ND	ND
46	-	-	-	-	ND	ND
47	-	-	-	-	ND	ND
64	-	29228(*2)	-	-	-	-

Note:

The sample had been dissolved totally tested for Lead, Cadmium, Mercury.

MDL = method detection limit

ND = not detected (<MDL)

mg/kg = ppm = parts per million

µg/cm² = micrograms per square centimeter

(*2) As a copper alloy containing up to 4% lead by weight (RoHS Exemption 6(c))

TO BE CONTINUED

TEST RESULT

Part 2

RoHS 4 (DEHP, BBP, DBP and DIBP Content)

Test Request: Total concentration of Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP) , Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP) in accordance with EC Directive 2011/65/EU and its amendment Directive (EU) 2015/863 (RoHS)

Test Method: IEC 62321-8:2017

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result			
					1+2+3	4+5+6	7+8+9	10+11+12
Di-2-ethylhexylphthalate (DEHP)	117-81-7	%	0.1	0.005	ND	ND	ND	ND
Benzylbutylphthalate (BBP)	85-68-7	%	0.1	0.005	ND	ND	ND	ND
Dibutylphthalate (DBP)	84-74-2	%	0.1	0.005	ND	ND	ND	ND
Diisobutyl phthalate (DIBP)	84-69-5	%	0.1	0.005	ND	ND	ND	ND

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result	
					13+14+15	16+17+18
Di-2-ethylhexylphthalate (DEHP)	117-81-7	%	0.1	0.005	ND	ND
Benzylbutylphthalate (BBP)	85-68-7	%	0.1	0.005	ND	ND
Dibutylphthalate (DBP)	84-74-2	%	0.1	0.005	ND	ND
Diisobutyl phthalate (DIBP)	84-69-5	%	0.1	0.005	ND	ND

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result	
					19+20+21	22+23+24
Di-2-ethylhexylphthalate (DEHP)	117-81-7	%	0.1	0.005	ND	ND
Benzylbutylphthalate (BBP)	85-68-7	%	0.1	0.005	ND	ND
Dibutylphthalate (DBP)	84-74-2	%	0.1	0.005	ND	ND
Diisobutyl phthalate (DIBP)	84-69-5	%	0.1	0.005	ND	ND

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result	
					25	26
Di-2-ethylhexylphthalate (DEHP)	117-81-7	%	0.1	0.005	ND	ND
Benzylbutylphthalate (BBP)	85-68-7	%	0.1	0.005	ND	ND
Dibutylphthalate (DBP)	84-74-2	%	0.1	0.005	ND	ND
Diisobutyl phthalate (DIBP)	84-69-5	%	0.1	0.005	ND	ND

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result	
					27	28+29+30
Di-2-ethylhexylphthalate (DEHP)	117-81-7	%	0.1	0.005	ND	ND
Benzylbutylphthalate (BBP)	85-68-7	%	0.1	0.005	ND	ND
Dibutylphthalate (DBP)	84-74-2	%	0.1	0.005	ND	ND
Diisobutyl phthalate (DIBP)	84-69-5	%	0.1	0.005	ND	ND

TO BE CONTINUED

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result	
					31+32+33	34+35+36
Di-2-ethylhexylphthalate (DEHP)	117-81-7	%	0.1	0.005	ND	ND
Benzylbutylphthalate (BBP)	85-68-7	%	0.1	0.005	ND	ND
Dibutylphthalate (DBP)	84-74-2	%	0.1	0.005	ND	ND
Diisobutyl phthalate (DIBP)	84-69-5	%	0.1	0.005	ND	ND

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result	
					37+38+39	40+41+42
Di-2-ethylhexylphthalate (DEHP)	117-81-7	%	0.1	0.005	ND	ND
Benzylbutylphthalate (BBP)	85-68-7	%	0.1	0.005	ND	ND
Dibutylphthalate (DBP)	84-74-2	%	0.1	0.005	ND	ND
Diisobutyl phthalate (DIBP)	84-69-5	%	0.1	0.005	ND	ND

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result	
					43+44+45	46+47+48
Di-2-ethylhexylphthalate (DEHP)	117-81-7	%	0.1	0.005	ND	ND
Benzylbutylphthalate (BBP)	85-68-7	%	0.1	0.005	ND	ND
Dibutylphthalate (DBP)	84-74-2	%	0.1	0.005	ND	ND
Diisobutyl phthalate (DIBP)	84-69-5	%	0.1	0.005	ND	ND

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result
					49+50
Di-2-ethylhexylphthalate (DEHP)	117-81-7	%	0.1	0.005	ND
Benzylbutylphthalate (BBP)	85-68-7	%	0.1	0.005	ND
Dibutylphthalate (DBP)	84-74-2	%	0.1	0.005	ND
Diisobutyl phthalate (DIBP)	84-69-5	%	0.1	0.005	ND

Remark:

ND = Not Detected(<0.005%)

0.1% equals to 1000 mg/kg

According to client's request, tests are combination tests. The experimental results are the total result of mixed samples.

END OF THE REPORT