



**CENTRE OF TESTING SERVICE
INTERNATIONAL**

OPERATE ACCORDING TO ISO/IEC 17025

TEST REPORT

RoHS 2011/65/EU

Test Report Number : CNB3151012-04740-C



CTS (Ningbo) Testing Service Technology Co., Ltd.

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TEST REPORT

REPORT No. : CNB3151012-04740-C
DATE : Oct. 29, 2015
PAGE : 1 of 20

Table of contents

1	General Information	2
1.1	Application Details	2
1.2	Manufacturer & Buyer	2
1.3	Description of the Test Item	2
2	Test results	3
2.1	Sample Receiving Date	3
2.2	Testing Period	3
2.3	Test Requested	3
2.4	Test Method	3
2.5	Chemical Test Method Flow Chart	4
2.6	Conclusion	5
2.7	Test Results	6
2.7.1	Test results of all parts by EDXRF and chemical confirmation	6
2.7.2	Test results by chemical analysis	11
3	Sample Reference Photo	13

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TEST REPORT

REPORT No. : CNB3151012-04740-C
DATE : Oct. 29, 2015
PAGE : 2 of 20

1 General Information

1.1 Application Details

Name : Ningbo Zhongdi Industry & Trade Co.,Ltd.
Address : NO.247-257,Industry-Trading road, Jishigang Industry Development Area, Ningbo, China.
Contact : MR.FEI
Telephone : +86-574-88036108
Fax : +86-574-88036107
Mobile telephone : 13454716998
Email : zdec@cnool.net

1.2 Manufacturer & Buyer

Manufacturer name : Ningbo Zhongdi Industry & Trade Co.,Ltd.
Address : NO.247-257,Industry-Trading road, Jishigang Industry Development Area, Ningbo, China.
Contact : MR.FEI
Telephone : +86-574-88036108
Fax : +86-574-88036107
Mobile telephone : 13454716998
Email : zdec@cnool.net
Buyer name : /

1.3 Description of the Test Item

Sample name : SOLDERING STATION
Model No. : ZD-929C,ZD-929A,ZD-916Z, ZD-981,ZD-916,ZD-915,ZD-985, ZD-987,ZD-917,ZD-982,ZD-912,ZD-939A (B),ZD-939L,ZD-937, ZD-20F,ZD-631,ZD-931,ZD-409,ZD-919,ZD-98,ZD-932,ZD-99, ZD-927,ZD-930,ZD-8901,ZD-8905,ZD-8903,ZD-153,ZD-153A, ZD-929B,ZD-8906,ZD-8917B,ZD-8917,ZD-8912,ZD-8912B, ZD-8915,ZD-8916,ZD-8906N,ZD-8906L,ZD-8907,ZD-631Q, ZD-633,ZD-8908,ZD-8936,ZD-928
Brand name : /
Condition of sample(s) : EFFECTIVE

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TEST REPORT

REPORT No. : CNB3151012-04740-C
DATE : Oct. 29, 2015
PAGE : 3 of 20

2 Test results

2.1 Sample Receiving Date

Oct. 12, 2015

2.2 Testing Period

Oct. 12, 2015 to Oct. 27, 2015

2.3 Test Requested

In accordance with the RoHS Directive 2011/65/EU Annex II.

2.4 Test Method

1. X-Ray Fluorescence Spectrometry method in reference to IEC 62321-3-1:2013.
2. Chemical test method

Test Item(s)	Test Method	Test Instrument
Lead (Pb)	With reference to IEC 62321-5:2013	ICP-AES
Cadmium (Cd)	With reference to IEC 62321-5:2013	ICP-AES
Mercury (Hg)	With reference to IEC 62321-4:2013	ICP-AES
Chromium VI (Cr VI)	With reference to IEC 62321:2008	UV-Vis
PBBs	With reference to IEC 62321:2008	GC-MS
PBDEs		

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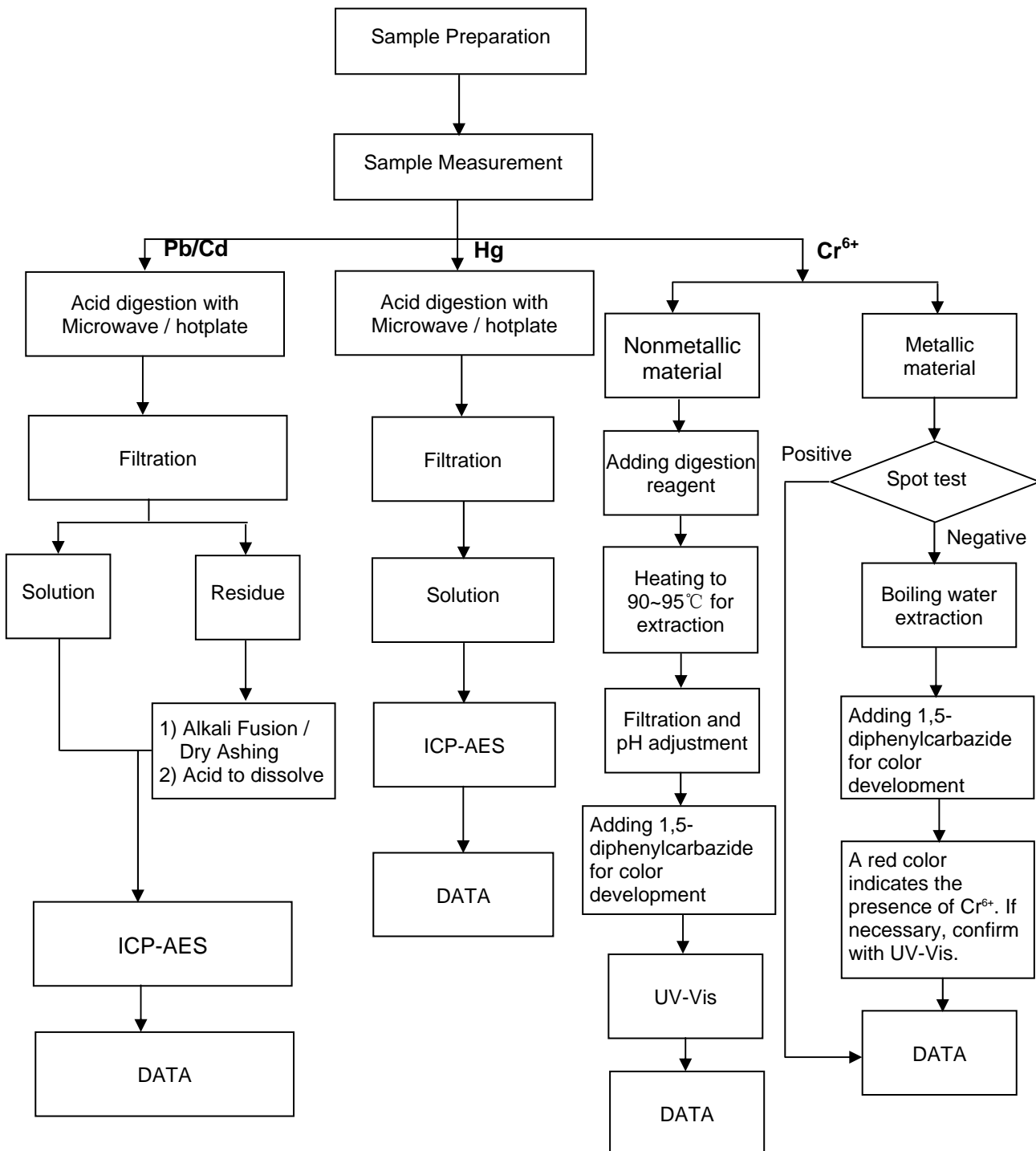
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TEST REPORT

REPORT No. : CNB3151012-04740-C
 DATE : Oct. 29, 2015
 PAGE : 4 of 20

2.5 Chemical Test Method Flow Chart



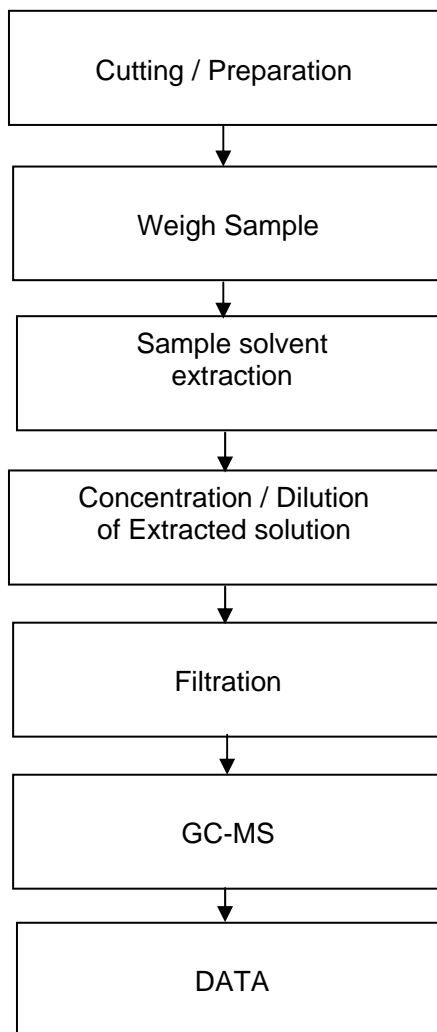
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TEST REPORT

REPORT No. : CNB3151012-04740-C
DATE : Oct. 29, 2015
PAGE : 5 of 20

PBBs / PBDEs



2.6 Conclusion

Based on the performed tests on submitted samples, the results of Lead, Cadmium, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

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TEST REPORT

REPORT No. : CNB3151012-04740-C
 DATE : Oct. 29, 2015
 PAGE : 6 of 20

2.7 Test Results

2.7.1 Test results of all parts by EDXRF and chemical confirmation

No.	Sample Description		Results					Chemical Confirmation Result (Unit=mg/kg)
			Pb	Cd	Hg	Cr	Br	
1	Power wire with plug	Silvery plug pole	X	P	P	P	/	Pb: 2.4×10 ^{4*}
2		White plastic frame	P	P	P	P	X	PBBs: N.D. PBDEs: N.D.
3		Black plastic frame	P	P	P	P	X	PBBs: N.D. PBDEs: N.D.
4		Silvery metal wafer	P	P	P	P	/	/
5		Black plug material	P	P	P	P	X	PBBs: N.D. PBDEs: N.D.
6		Black jacket	P	P	P	P	X	PBBs: N.D. PBDEs: N.D.
7		Green yellow cable jacket	P	P	P	P	P	/
8		Deep blue cable jacket	P	P	P	P	P	/
9		Blue cable jacket	P	P	P	P	P	/
10		Green cable jacket	P	P	P	P	P	/
11		Black cable jacket	P	P	P	P	P	/
12		White cable jacket	P	P	P	P	P	/
13		Red cable jacket	P	P	P	P	P	/
14		Coffee cable jacket	P	P	P	P	P	/
15		Silvery wire core	P	P	P	P	/	/
16		Copper-colored wire	P	P	P	P	/	/
17	Printing with sticker		P	P	P	P	P	/
18	White plastic cover		P	P	P	P	P	/
19	Black soft plastic bushing		P	P	P	P	P	/
20	Green plastic bushing		P	P	P	P	P	/
21	Silvery metal flat screw		P	P	P	P	/	/
22	White fiber bushing		P	P	P	P	P	/
23	Off-white fiber bushing		P	P	P	P	P	/

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CENTRE OF TESTING SERVICE

TEST REPORT

REPORT No. : CNB3151012-04740-C
 DATE : Oct. 29, 2015
 PAGE : 7 of 20

No.	Sample Description	Results					Chemical Confirmation Result (Unit=mg/kg)
		Pb	Cd	Hg	Cr	Br	
24	Red fiber bushing	P	P	P	P	P	/
25	Blue fiber bushing	P	P	P	P	P	/
26	Silvery metal wire	P	P	P	P	/	/
27	White ceramic	P	P	P	P	P	/
28	Black plastic	P	P	P	P	X	PBBs: N.D. PBDEs: N.D.
29	Shiny silvery metal	P	P	P	P	/	/
30	Printing with white sticker	P	P	P	P	P	/
31	CE sticker	P	P	P	P	P	/
32	Black coating	P	P	P	P	P	/
33	Silver metal block	P	P	P	P	/	/
34	Shiny silvery metal box	P	P	P	P	/	/
35	Double-side adhesive tape	P	P	P	P	P	/
36	Creamy paperboard	P	P	P	P	P	/
37	Off-white plastic cover	P	P	P	P	P	/
38	Black soft plastic foot mat	P	P	P	P	P	/
39	White coating	P	P	P	P	P	/
40	Black plastic button	P	P	P	P	P	/
41	Red coating	P	P	P	P	P	/
42	White plastic button	P	P	P	P	P	/
43	Self tapping screw	P	P	P	P	/	/
44	Transparent soft plastic bushing	P	P	P	P	P	/
45	Silvery metal hexagonal nut	X	P	P	P	/	Pb: 13
46	Silvery metal gasket	P	P	P	P	/	/
47	PCB	Base material	P	P	P	P	/
48		Copper foil	P	P	P	P	/
49	LED	Red transparent body	P	P	P	P	/
50		Green transparent body	P	P	P	P	/
51		Pin	P	P	P	P	/

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CENTRE OF TESTING SERVICE

TEST REPORT

REPORT No. : CNB3151012-04740-C
 DATE : Oct. 29, 2015
 PAGE : 8 of 20

No.	Sample Description		Results					Chemical Confirmation Result (Unit=mg/kg)
			Pb	Cd	Hg	Cr	Br	
52	Silvery metal hexagonal nut		P	P	P	P	/	/
53	IC	Black body	P	P	P	P	X	PBBs: N.D. PBDEs: N.D.
54		Pin	P	P	P	P	/	/
55	Chip resistor		X	P	P	P	P	Pb:1.3x10 ^{3#}
56	Chip capacitor		P	P	P	P	P	/
57	Chip audion		P	P	P	P	X	PBBs: N.D. PBDEs: N.D.
58	Aluminum electrolytic capacitor	Black plastic jacket with white printing	P	P	P	P	P	/
59		Silvery metal shell	P	P	P	P	/	/
60		Black rubber end closure	P	P	P	P	P	/
61		Pin	P	P	P	P	/	/
62		Capacitor anode film	P	P	P	P	P	/
63		Capacitor cathode film	P	P	P	P	P	/
64		Paper film	P	P	P	P	P	/
65	Square audion	Silvery metal piece	P	P	P	P	/	/
66		Black body	P	P	P	P	P	/
67		Pin	P	P	P	P	/	/
68	Black pyrocondensation tube		P	X	P	P	P	Cd: N.D.
69	Hot-melt glue		P	P	P	P	P	/
70	Connevtive band	Blue coating	P	P	P	P	P	/
71		White jacket	P	P	P	P	P	/
72		Silvery wire	P	P	P	P	/	/
73	Pin		X	P	P	P	/	Pb: 40
74	White plastic junction box		P	P	P	P	P	/
75	Potentiometer	White body	P	P	P	P	P	/
76		Blue body	P	P	P	P	P	/
77		Pin	P	P	P	P	/	/
78	Adjustment	Silvery metal cover	P	P	P	P	/	/
79		Black body	P	P	P	P	P	/

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CENTRE OF TESTING SERVICE

TEST REPORT

REPORT No. : CNB3151012-04740-C
 DATE : Oct. 29, 2015
 PAGE : 9 of 20

No.	Sample Description		Results					Chemical Confirmation Result (Unit=mg/kg)
			Pb	Cd	Hg	Cr	Br	
80	Adjustment	Pin	P	P	P	P	/	/
81	Silvery metal rivet		P	P	P	P	/	/
82	Transformer	Enamelled wire	P	P	P	P	P	/
83		Yellow adhesive tape	P	P	P	P	P	/
84		Silvery metal winding column	P	P	P	P	/	/
85		Silvering metal piece	P	P	P	P	/	/
86		Grey coat	P	P	P	P	P	/
87		Black plastic base	P	P	P	P	P	/
88		Pin	P	P	P	P	/	/
89	Ship-shaped switch	Black plastic cover	P	P	P	P	X	PBBs: N.D. PBDEs: N.D.
90		Pin	P	P	P	P	/	/
91		Silver-white pole	P	P	P	P	/	/
92		Spring	P	P	P	P	/	/
93		Silver-white contact bridge	P	P	P	P	/	/
94	Silvery metal piece		P	P	P	P	/	/
95	Lockless switch	Black plastic	P	P	P	P	P	/
96		Silvery metal piece	P	P	P	P	/	/
97		Metal dome	P	P	P	P	/	/
98		Pin	P	P	P	P	/	/
99	Toggle switch	Metal cover	P	P	P	P	/	/
100		Silvery metal wafer	P	P	P	P	/	/
101		Pin	P	P	P	P	/	/
102		Black plastic	P	P	P	P	P	/
103		Spring	P	P	P	P	/	/
104		Fiberboard	P	P	P	P	P	/
105	Display screen	Encapsulation material	P	P	P	P	P	/
106		White cover	P	P	P	P	P	/
107		Led body	P	P	P	P	P	/

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TEST REPORT

REPORT No. : CNB3151012-04740-C
 DATE : Oct. 29, 2015
 PAGE : 10 of 20

No.	Sample Description		Results					Chemical Confirmation Result (Unit=mg/kg)
			Pb	Cd	Hg	Cr	Br	
108	Display screen	Pin	P	P	P	P	/	/
109	Voltage stabilizing diode	Red black body	X	P	P	P	P	Pb:4.3×10 ^{4#}
110		Pin	P	P	P	P	/	/

Note : P = Below Limit (Pass)
 F = Over Limit (Fail)
 X = Inconclusive
 N.D. = not detected (less than MDL)
 1mg/kg=1ppm=0.0001%
 Negative = Absence of CrVI coating, Positive = Presence of CrVI coating;
 (The tested sample should be further verified by boiling-water-extraction method if the spot test result cannot be confirmed)
 Boiling-water-extraction:
 Negative = Absence of CrVI coating
 Positive = Presence of CrVI coating; The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50cm² sample surface area.

Remarks:

(1) Results are obtained by EDXRF for primary screening, and further chemical testing is recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1:2013.

Element	Polymer Materials	Metallic Materials	Electronic Materials
Pb	P ≤ 500 < X < 1300 ≤ F	P ≤ 500 < X < 1300 ≤ F	P ≤ 500 < X < 1300 ≤ F
Cd	P ≤ 50 < X < 130 ≤ F	P ≤ 50 < X < 130 ≤ F	X < 130 ≤ F
Hg	P ≤ 500 < X < 1300 ≤ F	P ≤ 500 < X < 1300 ≤ F	P ≤ 500 < X < 1300 ≤ F
Cr	P ≤ 700 < X	P ≤ 700 < X	P ≤ 500 < X
Br	P ≤ 250 < X	/	P ≤ 250 < X

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TEST REPORT

REPORT No. : CNB3151012-04740-C
 DATE : Oct. 29, 2015
 PAGE : 11 of 20

(2) Chemical Confirmation Result acceptable Limit:

Test items	Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium (CrVI)	PBBs	PBDEs
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Acceptable Limit	1000	100	1000	1000	1000	1000

2.7.2 Test results by chemical analysis

Test items	Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium (CrVI)	PBBs	PBDEs
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Acceptable Limit	1000	100	1000	1000	1000	1000
111 Soldering tin and solder	51	N.D.	N.D.	Negative	N.A.	N.A.

- Note :
- Specimens, which requested to determine Cadmium, Mercury and Lead content, have been dissolved completely.
 - N.D. = not detected (less than MDL)
 - N.A. = not applicable
 - 1 mg/kg=1 ppm=0.0001%
 - Spot –test:**
 Negative = Absence of CrVI coating, Positive = Presence of CrVI coating;
 (The tested sample should be further verified by boiling-water-extraction method if the spot test result cannot be confirmed)
Boiling-water-extraction:
 Negative = Absence of CrVI coating
 Positive = Presence of CrVI coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50cm² sample surface area.
 - Positive** indicates the presence of CrVI on the tested areas and result be regarded as conflict with RoHS requirement.
Negative indicates the absence of CrVI on the tested areas and result be regarded as no conflict with RoHS requirement.
 - * According to the declaration from client, the source of lead in the sample could be from the copper alloy material. Lead as a copper alloy containing which is under 4% (40000ppm) is exempted from the requirement of RoHS Directive (2011/65/EU Annex III).

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TEST REPORT

REPORT No. : CNB3151012-04740-C
 DATE : Oct. 29, 2015
 PAGE : 12 of 20

8. # According to the declaration from client, the source of lead in the sample could be from the glass material .Lead in glass of electronic components (cathode ray tubes/fluorescent tubes) is exempted from the requirement of RoHS Directive (2011/65/EU Annex III).
9. The method detect limit for each hazardous substances, and determined individual PBBs and individual PBDEs are:

Method Detect Limit in mg/kg		
Heavy Metals	Lead (Pb)	2
	Cadmium (Cd)	2
	Mercury (Hg)	2
	Chromium (CrVI)	2
PBBs	Monobromobiphenyl	5
	Dibromobiphenyl	5
	Tibromobiphenyl	5
	Tetrabromobiphenyl	5
	Pentabromobiphenyl	5
	Hexabromobiphenyl	5
	Heptabromobiphenyl	5
	Octabromobiphenyl	5
	Nonabromodiphenyl	5
	Decabromodiphenyl	5
PBDEs	Monobromodiphenyl ether	5
	Dibromodiphenyl ether	5
	Tibromodiphenyl ether	5
	Tetrabromodiphenyl ether	5
	Pentabromodiphenyl ether	5
	Hexabromodiphenyl ether	5
	Heptabromodiphenyl ether	5
	Octabromodiphenyl ether	5
	Nonabromodiphenyl ether	5
Decabromodiphenyl ether	5	

Written by: *Jessie*

Inspected by: *Susei*

Approved by: *Jan*



End of Report

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TEST REPORT

REPORT No. : CNB3151012-04740-C
DATE : Oct. 29, 2015
PAGE : 13 of 20

3 Sample Reference Photo



1-29



ZD-930



ZD-931

2-29



ZD-916Z



ZD-98



ZD-20F



ZD-99

3-29

4-29

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TEST REPORT

REPORT No. : CNB3151012-04740-C
DATE : Oct. 29, 2015
PAGE : 14 of 20



ZD-153A



ZD-153

5-29



ZD-916



ZD-917

7-29



ZD-409



ZD-912



ZD-915

6-29



ZD-919



ZD-919



ZD-927

8-29

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TEST REPORT

REPORT No. : CNB3151012-04740-C
DATE : Oct. 29, 2015
PAGE : 15 of 20



ZD-929A



ZD-932



ZD-929B



ZD-937

9-29

10-29



ZD-939A



ZD-982



ZD-981



ZD-987

11-29

12-29

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TEST REPORT

REPORT No. : CNB3151012-04740-C
DATE : Oct. 29, 2015
PAGE : 16 of 20



ZD-8901



ZD-939B



ZD-8903



ZD-939L

13-29

14-29



ZD-985



ZD-8905



ZD-631



ZD-8906

15-29

16-29

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CENTRE OF TESTING SERVICE

TEST REPORT

REPORT No. : CNB3151012-04740-C
DATE : Oct. 29, 2015
PAGE : 17 of 20



ZD-8917B
17-29



ZD-8917
18-29



ZD-8912
19-29



ZD-8912B
20-29

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TEST REPORT

REPORT No. : CNB3151012-04740-C
DATE : Oct. 29, 2015
PAGE : 18 of 20



ZD-8915

21-29



ZD-8916

22-29



ZD-8906N

23-29



ZD-8906L

24-29

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TEST REPORT

REPORT No. : CNB3151012-04740-C
DATE : Oct. 29, 2015
PAGE : 19 of 20



ZD-8907
25-29



ZD-631Q
26-29



ZD-928
27-29



ZD-8908
28-29

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TEST REPORT

REPORT No. : CNB3151012-04740-C
DATE : Oct. 29, 2015
PAGE : 20 of 20



Zd-8936
29-29

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