



**BUREAU
VERITAS**

TEST REPORT

LAB NO. : (8820)100-0059
DATE : May 14, 2020
PAGE : 1 OF 16

APPLICANT : **KYSAN ELECTRONICS INC.**
2570 NORTH FIRST STREET, SUITE 220, SAN JOSE,
CALIFORNIA, 95131, USA

DATE OF SUBMISSION : APR 9, 2020

TEST PERIOD : APR 9, 2020 TO MAY 14, 2020

SAMPLE DESCRIPTION : DC MOTOR

Style No. : SEE ATTACHMENT

Sample Size: 6

SUMMARY OF TEST RESULTS

TEST REQUESTED	CONCLUSION	REMARK
European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendment Directive 2015/863/EU	PASS	-



BUREAU VERITAS SHENZHEN CO.,LTD
DONGGUAN BRANCH

Harvey Xue
Manager, Analytical Lab

RT/Jodie Chen/Fisk Yuan

REMARK

If there are questions or concerns on this report, please contact the following persons:

Report Enquiry: (86) 0769 89952999 Ext. 8175 CPSAnalytical.DG@bureauveritas.com

Business Contact: (86) 0769 85893595

This report shall not be reproduced except in full, without the written approval of our laboratory.



LAB NO. : (8820)100-0059
DATE : May 14, 2020
PAGE : 2 OF 16

ATTACHMENT:

Style No. :

A12FT-5V1350-10L2.5K、 A12FT-5V1350-KSX00、 A12FT-5V240RPM-5D、
KS-050、 KS-030、 KS-K10、 KS-K20、 KS-K30、 KS-N20、 KS-N60、 KS-Q6D、
KS-020、 KS-130、 KS-180、 KS-140、 KS-280、 KS-260、 KS-300、 KS-370、
KS-400、 KS-500、 KS-530、 KS-520、 KS-540、 KS-545、 KS-310、 KS-356、
KS-360、 KS-365、 KS-380、 KS-385、 KS-390、 KS-445、 KS-550、 KS-555、
KS-750、 KS-770、 KS-775、 KS-B42、 KS-B38、 KS-B37、 KS-B33、 KS-B25、
KS-B30、 KS-A60、 KS-A42、 KS-A37、 KS-A32、 KS-A28、 KS-A25、 KS-A20、
KS-A17、 KS-A12、 KS-A16、 KS-IG16、 KS-IG22、 KS-IG17、 KS-IG24、 KS-IG28、
KS-IG30、 KS-IG32、 KS-IG35、 KS-IG36、 KS-IG38、 KS-IG42、 KS-IG43、 KS-IG45、
KS-IG50、 KS-IG60、 KS-IG52、 KS-IG71、 KS-IG80、 KS-IG90

Photo of the Submitted Sample





LAB NO. : (8820)100-0059
DATE : May 14, 2020
PAGE : 4 OF 16

Test Item Description List

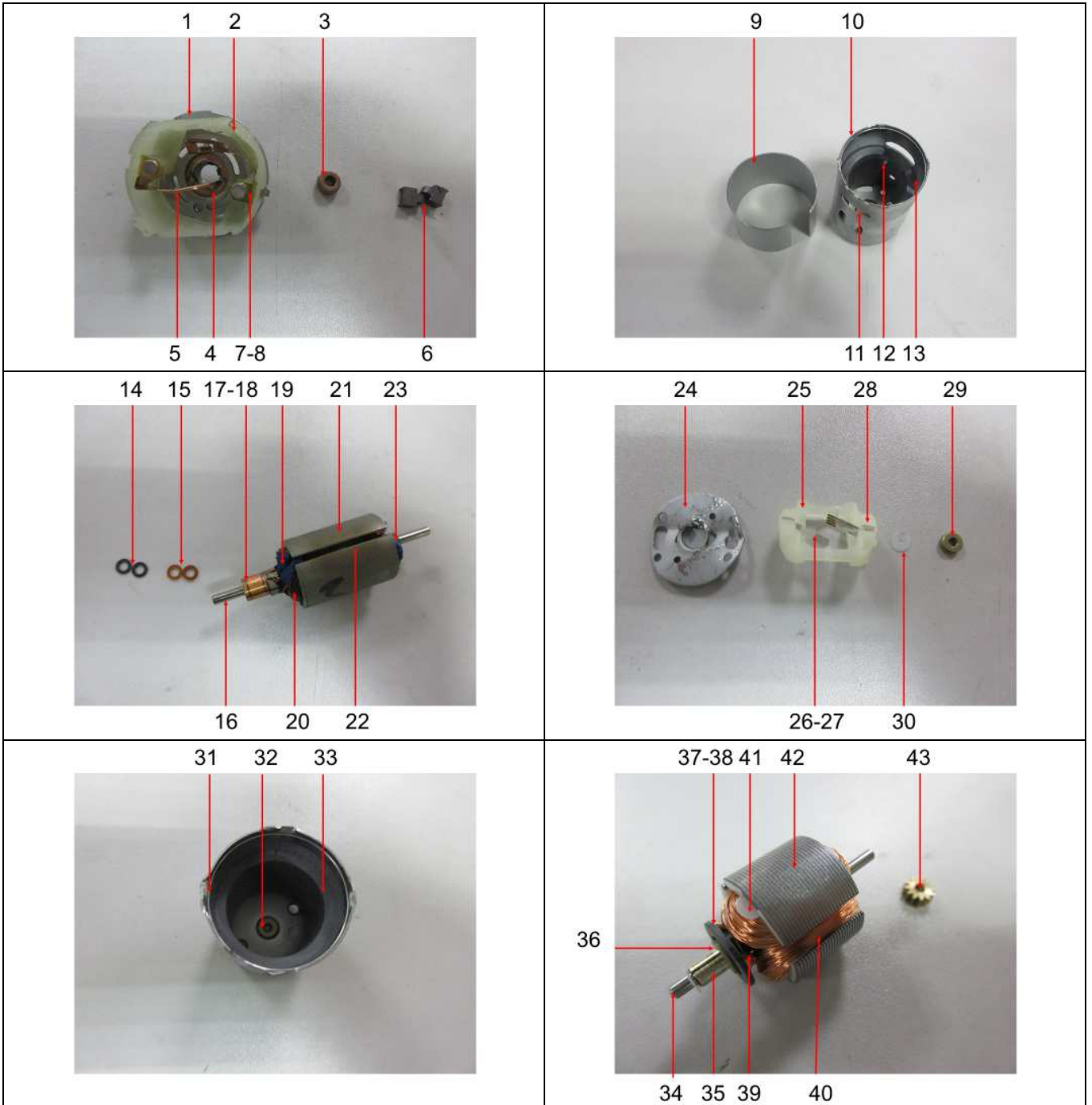
Test Item(s)	Item / Component Description(s)	Location(s)	Style(s)
1	Silvery metal	Terminal, motor	-
2	Beige plastic	Terminal, motor	-
3	Coppery metal	Bearing, terminal, motor	-
4	Silvery metal	Contact plate, bearing, terminal, motor	-
5	Coppery metal	Brush, terminal, motor	-
6	Coppery body	Fitting, brush, terminal, motor	-
7	Golden metal	Contact plate, brush, terminal, motor	-
8	Silvery metal	Shaft, contact plate, brush, terminal, motor	-
9	Silvery metal	Housing, motor	-
10	Silvery metal	Case, motor	-
11	Coppery metal	Bearing, motor	-
12	Silvery metal	Spring, motor	-
13	White printed black magnet	Magnet, motor	-
14	Black soft plastic	Ring, shaft, motor	-
15	Brown plastic	Ring, shaft, motor	-
16	Silvery metal	Shaft, motor	-
17	Coppery metal	Connector, motor	-
18	Black ceramic	Commutator, motor	-
19	Blue glue	Glue, motor	-
20	Coppery metal	Coil, motor	-

Test Item(s)	Item / Component Description(s)	Location(s)	Style(s)
21	Silvery metal	Plate, motor	-
22	Green plastic	Insulator, motor	-
23	Golden metal	Ring, shaft, motor	-
24	Silvery metal	Terminal, motor	-
25	Beige plastic	Terminal, motor	-
26	Silvery metal	Brush, terminal, motor	-
27	White plastic	Fitting, brush, terminal, motor	-
28	Silvery metal	Contact plate, brush, terminal, motor	-
29	Coppery metal	Bearing, terminal, motor	-
30	White plastic	Base, bearing, terminal, motor	-
31	Silvery metal	Case, motor	-
32	Coppery metal	Bearing, motor	-
33	Black magnet	Magnet, motor	-
34	Silvery metal	Shaft, motor	-
35	Silvery metal	Connector, motor	-
36	Grey paper	Ring, shaft, motor	-
37	Black body	Ring, shaft, motor	-
38	Silvery solder	Solder, motor	-
39	Black plastic	Commutator, motor	-
40	Coppery metal	Coil, motor	-
41	White plastic	Insulator, motor	-
42	Silvery metal	Plate, motor	-

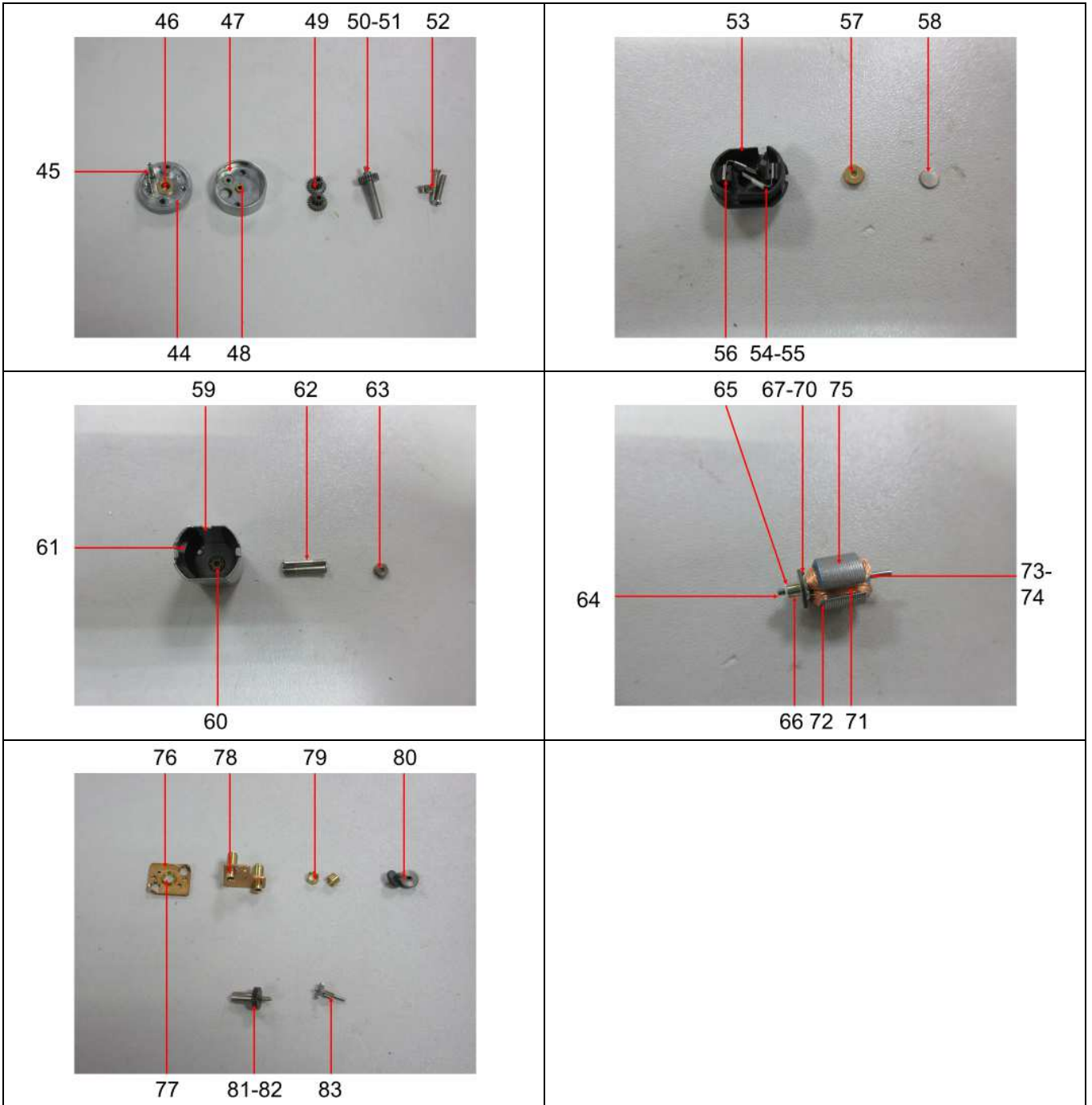
Test Item(s)	Item / Component Description(s)	Location(s)	Style(s)
43	Golden metal	Gear, motor	-
44	Matte silvery metal	Housing, motor	-
45	Silvery metal	Shaft, housing, motor	-
46	Coppery metal	Bearing, housing, motor	-
47	Silvery metal	Housing, motor	-
48	Coppery metal	Bearing, housing, motor	-
49	Grey plated silvery metal	Gear, housing, motor	-
50	Grey plated silvery metal	Shaft, housing, motor	-
51	Grey plated silvery metal	Gear, shaft, housing, motor	-
52	Silvery metal	Screw, housing, motor	-
53	Black plastic	Terminal, motor	-
54	Silvery metal	Brush, terminal, motor	-
55	White plastic	Fitting, brush, terminal, motor	-
56	Silvery metal	Contact plate, brush, terminal, motor	-
57	Coppery metal	Bearing, terminal, motor	-
58	Silvery metal	Contact plate, brush, terminal, motor	-
59	Silvery metal	Case, motor	-
60	Coppery metal	Bearing, motor	-
61	White coated black magnet	Magnet, motor	-
62	Silvery metal	Screw, motor	-
63	Silvery metal	Gear, motor	-
64	Silvery metal	Shaft, motor	-

Test Item(s)	Item / Component Description(s)	Location(s)	Style(s)
65	White plastic	Ring, shaft, motor	-
66	Silvery metal	Connector, motor	-
67	Grey paper	Ring, shaft, motor	-
68	Black body	Ring, shaft, motor	-
69	Silvery solder	Solder, motor	-
70	Beige plastic	Commutator, motor	-
71	Coppery metal	Coil, motor	-
72	Blue plastic	Insulator, motor	-
73	White plastic	Insulator, motor	-
74	Blue plastic	Ring, shaft, motor	-
75	Silvery metal	Plate, motor	-
76	Coppery metal	Contact plate, motor	-
77	Golden metal	Ring, contact plate, motor	-
78	Golden metal	Tube, contact plate, motor	-
79	Golden metal	Tube, motor	-
80	Grey plated silvery metal	Gear, motor	-
81	Silvery metal	Shaft, motor	-
82	Grey plated silvery metal	Gear, shaft, motor	-
83	Grey plated silvery metal	Gear, motor	-

Test Item Photo List



Test Item Photo List



TEST RESULT

Compliance Test – European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendment Directive 2015/863/EU

Test Method : See Appendix.

See Analytes and their corresponding Maximum Allowable Limit in Appendix

-	Result						
Parameter	Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium VI (Cr VI)	PBBs	PBDEs	Conclusion
Unit	mg/kg						-
Test Item(s)	-	-	-	-	-	-	-
1	ND	ND	ND	ND	NA	NA	PASS
2	ND	ND	ND	ND	ND	ND	PASS
3	ND	ND	ND	Negative*	NA	NA	PASS
4	ND	ND	ND	Negative*	NA	NA	PASS
5	ND	ND	ND	ND	NA	NA	PASS
6	ND	ND	ND	ND	ND	ND	PASS
7	ND	ND	ND	ND	NA	NA	PASS
8	ND	ND	ND	ND	NA	NA	PASS
9	ND	ND	ND	ND	NA	NA	PASS
10	ND	ND	ND	ND	NA	NA	PASS
11	ND	ND	ND	Negative*	NA	NA	PASS
12	ND	ND	ND	ND	NA	NA	PASS
13	ND	ND	ND	ND	NA	NA	PASS
14	ND	ND	ND	ND	ND	ND	PASS
15	ND	ND	ND	ND	ND	ND	PASS
16	ND	ND	ND	ND	NA	NA	PASS
17	<500	ND	ND	ND	NA	NA	PASS
18	ND	ND	ND	ND	ND	ND	PASS
19	ND	ND	ND	ND	ND	ND	PASS
20	ND	ND	ND	ND	NA	NA	PASS
21	ND	ND	ND	ND	NA	NA	PASS
22	ND	ND	ND	ND	ND	ND	PASS
23	23000*	ND	ND	Negative*	NA	NA	EXEMPTED#
24	ND	ND	ND	ND	NA	NA	PASS
25	ND	ND	ND	ND	ND	ND	PASS
26	ND	ND	ND	ND	NA	NA	PASS



LAB NO. : (8820)100-0059
 DATE : May 14, 2020
 PAGE : 11 OF 16

TEST RESULT

-	Result						
Parameter	Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium VI (Cr VI)	PBBs	PBDEs	Conclusion
Unit	mg/kg						-
Test Item(s)	-	-	-	-	-	-	-
27	ND	ND	ND	ND	ND	ND	PASS
28	ND	ND	ND	ND	NA	NA	PASS
29	ND	ND	ND	Negative*	NA	NA	PASS
30	ND	ND	ND	ND	ND	ND	PASS
31	ND	ND	ND	ND	NA	NA	PASS
32	ND	ND	ND	ND	NA	NA	PASS
33	ND	ND	ND	ND	NA	NA	PASS
34	ND	ND	ND	ND	NA	NA	PASS
35	ND	ND	ND	ND	NA	NA	PASS
36	ND	ND	ND	ND	ND	ND	PASS
37	ND	ND	ND	ND	ND	ND	PASS
38	ND	ND	ND	ND	NA	NA	PASS
39	ND	ND	ND	ND	ND	ND	PASS
40	ND	ND	ND	ND	NA	NA	PASS
41	ND	ND	ND	ND	ND	ND	PASS
42	ND	ND	ND	ND	NA	NA	PASS
43	30000*	ND	ND	ND	NA	NA	EXEMPTED#
44	ND	ND	ND	ND	NA	NA	PASS
45	ND	ND	ND	Negative*	NA	NA	PASS
46	<500	ND	ND	ND	NA	NA	PASS
47	ND	ND	ND	ND	NA	NA	PASS
48	ND	ND	ND	ND	NA	NA	PASS
49	ND*	ND	ND	Negative*	NA	NA	PASS
50	<500	ND	ND	Negative*	NA	NA	PASS
51	2000*	ND	ND	Negative*	NA	NA	EXEMPTED#
52	ND	ND	ND	ND	NA	NA	PASS
53	ND	ND	ND	ND	ND	ND	PASS
54	ND	ND	ND	ND	NA	NA	PASS
55	ND	ND	ND	ND	ND	ND	PASS
56	ND	ND	ND	ND	NA	NA	PASS
57	ND	ND	ND	ND	NA	NA	PASS
58	ND	ND	ND	Negative*	NA	NA	PASS
59	ND	ND	ND	ND	NA	NA	PASS
60	ND	ND	ND	ND	NA	NA	PASS



LAB NO. : (8820)100-0059
 DATE : May 14, 2020
 PAGE : 12 OF 16

TEST RESULT

-	Result						
Parameter	Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium VI (Cr VI)	PBBs	PBDEs	Conclusion
Unit	mg/kg						-
Test Item(s)	-	-	-	-	-	-	-
61	ND	ND	ND	ND	NA	NA	PASS
62	ND	ND	ND	ND	NA	NA	PASS
63	2200*	ND	ND	Negative*	NA	NA	EXEMPTED#
64	ND	ND	ND	ND	NA	NA	PASS
65	ND	ND	ND	ND	ND	ND	PASS
66	ND	ND	ND	ND	NA	NA	PASS
67	ND	ND	ND	ND	ND	ND	PASS
68	ND	ND	ND	ND	ND	ND	PASS
69	ND	ND	ND	ND	NA	NA	PASS
70	ND	ND	ND	ND	ND	ND	PASS
71	ND	ND	ND	ND	NA	NA	PASS
72	ND	ND	ND	ND	ND	ND	PASS
73	ND	ND	ND	ND	ND	ND	PASS
74	ND	ND	ND	ND	ND	ND	PASS
75	ND	ND	ND	ND	NA	NA	PASS
76	ND	ND	ND	ND	NA	NA	PASS
77	12000*	ND	ND	ND	NA	NA	EXEMPTED#
78	12000*	ND	ND	ND	NA	NA	EXEMPTED#
79	14000*	ND	ND	ND	NA	NA	EXEMPTED#
80	ND*	ND	ND	Negative*	NA	NA	PASS
81	1100*	ND	ND	Negative*	NA	NA	EXEMPTED#
82	ND	ND	ND	Negative*	NA	NA	PASS
83	ND	ND	ND	Negative*	NA	NA	PASS



LAB NO. : (8820)100-0059
DATE : May 14, 2020
PAGE : 13 OF 16

Note / Key:

ND = Not detected	“>” = Greater than	“<” = Less than
NR = Not requested	mg/kg = milligram(s) per kilogram = ppm = part(s) per million	
NA = Not applicable	% = percent	10000 mg/kg = 1 %
Detection Limit : See Appendix.		

Remark:

- The testing approach is listed in table of Appendix.
 - * denotes as reported result(s) was (were) performed by wet chemistry method. Others were screened by XRF. For XRF screening, the result(s) of Cr VI was (were) reported as total chromium and the result(s) of PBBs and PBDEs was (were) reported as total bromine. Also, the XRF result(s) may be different to the actual content based on various factors including, but not limit to, sample size, thickness, area, non-uniformity composition, surface flatness.
 - According to European Council Directive 2011/65/EU, Article 5 “Adaptation of the Annexes to scientific and technical progress”, exemption(s) should be granted to the materials and components of Test Item(s) in the lists in Annexes III and IV of this directive.
 - #According to Annex III of European Council Directive 2011/65/EU, exemptions were granted a few materials and Clause 6(c) is reiterated here “Copper alloy containing up to 4 % lead by weight.”. Test Item(s) 23, 43, 77, 78, 79 was (were) claimed as is by client (received as is). Therefore, this (these) Test Item(s) containing the found lead level should be exempted.
 - #According to Annex III of European Council Directive 2011/65/EU, exemptions were granted a few materials and Clause 6(a) is reiterated here “Lead as an alloying element in steel for machining purposes and in galvanised steel containing up to 0.35 % lead by weight.”. Test Item(s) 51, 81, 63 was (were) claimed as is by client (received as is). Therefore, this (these) Test Item(s) containing the found lead level should be exempted.
 - The items 63 was resubmitted by client dated on May 11, 2020.
-

APPENDIX

List of Analytes and their Corresponding Test Methods, Detection Limit and Maximum Allowable Limit							
[Compliance Test for European Parliament and Council Directive 2011/65/EU] :							
No.	Name of Analytes	Detection Limit (mg/kg)				Wet Chemistry	Maximum Allowable Limit (mg/kg)
		X-ray fluorescence (XRF)^[a]					
		Plastic	Metallic / glass / ceramic	Others			
1	Lead (Pb)	100	200	200	10 ^[b]	1000	
2	Cadmium (Cd)	50	50	50	10 ^[b]	100	
3	Mercury (Hg)	100	200	200	10 ^[c]	1000	
4	Chromium (Cr)	100	200	200	NA	NA	
5	Chromium VI (Cr VI)	NA	NA	NA	3 ^[g, h] / 10 ^[d] / Sec ^[e, i]	1000 / Negative ^[j]	
6	Bromine (Br)	200	NA	200	NA	NA	
7	Polybromobiphenyls (PBBs) - Bromobiphenyl (MonoBB) - Dibromobiphenyl (DiBB) - Tribromobiphenyl (TriBB) - Tetrabromobiphenyl (TetraBB) - Pentabromobiphenyl (PentaBB) - Hexabromobiphenyl (HexaBB) - Heptabromobiphenyl (HeptaBB) - Octabromobiphenyl (OctaBB) - Nonabromobiphenyl (NonaBB) - Decabromobiphenyl (DecaBB)	NA	NA	NA	Each 50 ^[f]	Sum 1000	
8	Polybromodiphenyl ethers (PBDEs) - Bromodiphenyl ether (MonoBDE) - Dibromodiphenyl ether (DiBDE) - Tribromodiphenyl ether (TriBDE) - Tetrabromodiphenyl ether (TetraBDE) - Pentabromodiphenyl ether (PentaBDE) - Hexabromodiphenyl ether (HexaBDE) - Heptabromodiphenyl ether (HeptaBDE) - Octabromodiphenyl ether (OctaBDE) - Nonabromodiphenyl ether (NonaBDE) - Decabromodiphenyl ether (DecaBDE)	NA	NA	NA	Each 50 ^[f]	Sum 1000	



LAB NO. : (8820)100-0059
DATE : May 14, 2020
PAGE : 15 OF 16

List of Analytes and their Corresponding Test Methods, Detection Limit and Maximum Allowable Limit [Compliance Test for European Parliament and Council Directive 2011/65/EU] :

NA = Not applicable

- [a] Test method with reference to International Standard IEC 62321-3-1: 2013.
- [b] Test method with reference to International Standard IEC 62321-5: 2013.
- [c] Test method with reference to International Standard IEC 62321-4: 2017.
- [d] Polymers and Electronics - Test method with reference to International Standard IEC 62321-7-2:2017.
- [e] Metal - Test method with reference to International Standard IEC 62321-7-1: 2015.
- [f] Test method with reference to International Standard IEC 62321-6: 2015.
- [g] Leather - Test method International Standard ISO 17075-1:2017.
- [h] Other Than Metal, Leather, Polymers and Electronics - Test method with reference to International Standard ISO 17075-1:2017.
- [i] The principle of this method was evaluated and supported by two studies organized by IEC TC 111 WG3. These studies were focused on detecting the presence of Cr VI in the corrosion protection coatings on metallic samples. Result(s) of Cr VI for metallic material(s) was (were) expressed in term of positive and negative. Negative means the absence of Cr VI on the tested areas and the result(s) was (were) regarded as in compliance with European Parliament and Council Directive 2011/65/EU, Article 4(1). While, positive means the presence of Cr VI on tested areas and the result(s) was (were) regarded as in conflict with European Parliament and Council Directive 2011/65/EU, Article 4(1).
- [j]

Testing Approach [Compliance Test for European Parliament and Council Directive 2011/65/EU] :

The testing approach was with reference to the following document(s).

- 1 International Standards IEC 62321-1: 2013 and IEC 62321-2: 2013
- 2 "RoHS Enforcement Guidance Document Version 1" by EU RoHS Enforcement Authorities Informal Network. (May 2006)
- 3 "RoHS Regulations - Government Guidance Notes" by United Kingdom Department for Business Innovation & Skills. (February 2011)
- 4 "Final Report to RoHS substances (Hg, Pb, Cr(VI), Cd, PBB and PBDE) in electrical and electronic equipment in Belgium" by Belgium Federal Public Service Health, Food Chain Safety and Environment. (November 2005)



LAB NO. : (8820)100-0059
DATE : May 14, 2020
PAGE : 16 OF 16

TEST RESULT

BBP/DBP/DEHP/DIBP Content – European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendment Directive 2015/863/EU

Test Method : With reference to International Standard IEC 62321-8:2017

Test Parameter:	BBP	DBP	DEHP	DiBP	-
Limit (%):	0.1	0.1	0.1	0.1	-
Test Item(s)	Result (%)				Conclusion
I002+I015+I019 +I022+I025	ND	ND	ND	ND	PASS
I014	ND	ND	ND	ND	PASS
I027+I030+I039 +I053+I055	ND	ND	ND	ND	PASS
I065+I070+I072 +I073+I074	ND	ND	ND	ND	PASS

Note / key:

BBP = Butyl benzyl phthalate (CAS No: 85-68-7)

DBP = Dibutyl phthalate (CAS No: 84-74-2)

DEHP = Di(2-ethylhexyl) phthalate (CAS No: 117-81-7)

DiBP = Diisobutyl phthalate (CAS No: 84-69-5)

ND = Not detected % = percent

10000 mg/kg = 1 %

mg/kg = milligram(s) per kilogram

Detection Limit (%) : Each 0.005

Remark:

- The amendment will be effective on 22 July 2019. For medical devices and control instruments, effective date will be 22 July 2021.
- The composite test sample(s) of the submitted samples was prepared in the manner requested by the client, when subject to the test performed.

*** End of Report ***