TEST REPORT

LAB NO. : (2421)145-0263
DATE : July 01, 2021

Applicant:
ZHEJIANG GEYA ELECTRICAL CO., LTD
WENZHOU BRIDGE INDUSTRAL ZONE, BEIBAIXIANG TWON, YUEQING CITY, ZHEJIANG PROVINCE, CHINA 32560

Date of Submission: 2021-05-25
Test Period: 2021-05-25 to 2021-07-01

Sample Description: Sample Status :	RCCB Intact		
Manufacturer:	/	Buyer:	/
Style No.(s):	GYL9(TYPE B)	PO No.:	/
Country of Origin:	/	Country of Destination:	/

Test Item(s): Details see attached page(s).

SUMMARY OF TEST RESULTS

TEST REQUESTED	CONCLUSION
Compliance Test - Heavy Metals, Flame Retardants 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 Amendments	PASS
Compliance Test - Phthalate Test – (EU) 2015/863 amending Annex II to Directive 2011/65/EU	PASS

Note: The tested part of the sample was specified by client.
The composite testing was performed as per client's request.
The test conclusion was given based on the results of tested part.

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

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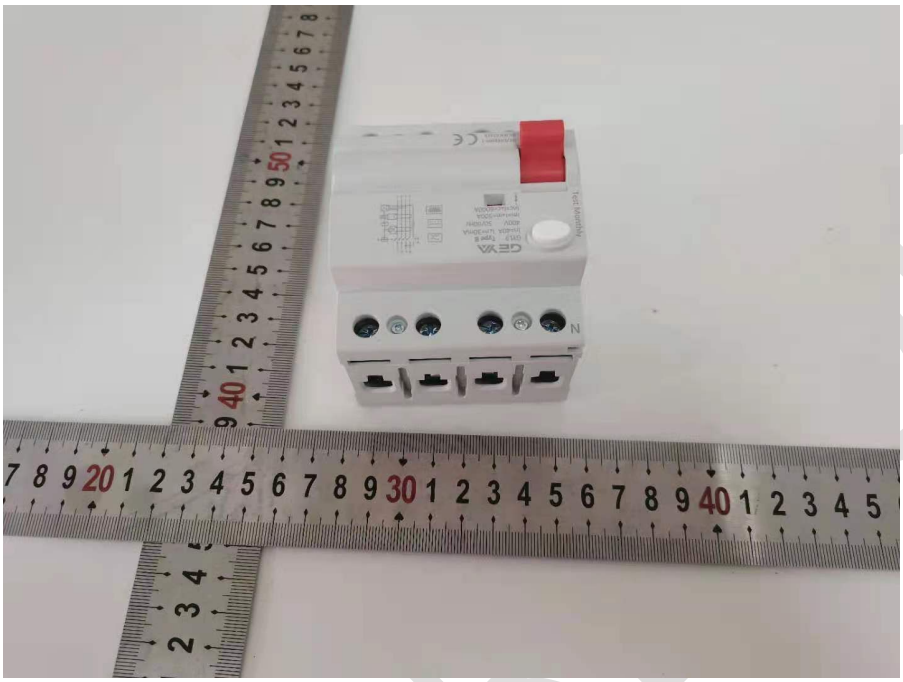
Photo of the Submitted Sample



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TEST RESULT

Compliance Test - Heavy Metals, Flame Retardants 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 Amendments

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**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	-
Test Item	**Description**	**Location**	-	-	-	-	-	-
Tested components of GYL9(TYPE B)								
1	Silvery metal screw	Inside	ND	ND	ND	ND	NA	PASS
2	Gray plastic shell	Housing	ND	ND	ND	ND	ND	PASS
3	Gray plastic sheet	Housing	ND	ND	ND	ND	ND	PASS
4	White plastic button shell	Button	ND	ND	ND	ND	ND	PASS
5	Blue metal screw	Inside	ND	ND	ND	ND	NA	PASS
6	Blue metal block	Inside	ND	ND	ND	ND	NA	PASS
7	Silvery metal block	Inside	ND	ND	ND	ND	NA	PASS
8	Black soft plastic sheet	Inside	ND	ND	ND	ND	ND	PASS
9	Silvery metal shaft	Inside	ND	ND	ND	ND	NA	PASS
10	Silvery metal	Inside	ND	ND	ND	ND	NA	PASS
11	Silvery metal sheet	Part	ND	ND	ND	ND	NA	PASS
12	Silvery metal sheet	Part	ND	ND	ND	ND	NA	PASS
13	Yellow transparent plastic block	Part	ND	ND	ND	ND	ND	PASS
14	White plastic block	Part	ND	ND	ND	ND	ND	PASS
15	Breen plastic block	Part	ND	ND	ND	ND	ND	PASS
16	Red plastic block	Switch	ND	ND	ND	ND	ND	PASS
17	Beige plastic block	Part	ND	ND	ND	ND	ND*	PASS
18	White red plastic block	Part	ND	ND	ND	ND	ND*	PASS
19	Black soft plastic heat shrinkable tube	Heat shrinkable tube	ND	ND	ND	ND	ND	PASS
20	White plastic block	Part	ND	ND	ND	ND	ND	PASS
21	Coppery metal coil	Part	ND	ND	ND	ND	NA	PASS
22	White plastic sheet	Part	ND	ND	ND	ND	ND	PASS
23	Golden metal sheet	Part	<500	ND	ND	ND	NA	PASS
24	Silvery metal magnet	Part	<500	ND	ND	ND	NA	PASS
25	Brown plastic block	Part	ND	ND	ND	ND	ND	PASS
26	Silvery metal contact point	Part	ND	**EX#**	ND	ND	NA	**EX#**
27	White soft plastic tube	Tube	ND	ND	ND	ND	ND	PASS
28	Red soft plastic tube	Tube	ND	ND	ND	ND	ND	PASS

-			Result					
Parameter			Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium VI (Cr VI)	PBBs & PBDEs	Conclusion
Unit			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
Test Item	Description	Location	-	-	-	-	-	-
29	Blue soft plastic tube	Tube	ND	ND	ND	ND	ND	PASS
30	Yellow soft plastic tube	Tube	ND	ND	ND	ND	ND	PASS
31	White cloth	Part	ND	ND	ND	ND	ND	PASS
32	Red adhesive plastic sheet	Part	ND	ND	ND	ND	ND	PASS
33	Translucence plastic block	Part	ND	ND	ND	ND	ND	PASS
34	Silvery soft plastic sheet	Part	ND	ND	ND	ND	ND	PASS
35	Blue foam	Part	ND	ND	ND	ND	ND	PASS
36	Black plastic block	Part	ND	ND	ND	ND	ND	PASS
37	Black soft plastic wire jacket	Wire jacket	ND	ND	ND	ND	ND	PASS
38	Red soft plastic wire jacket	Wire jacket	ND	ND	ND	ND	ND	PASS
39	Black electrolytic capacitor	PCB	ND	ND	ND	ND	ND	PASS
40	Blue resistor	PCB	ND	ND	ND	ND	ND	PASS
41	Green capacitor	PCB	ND	ND	ND	ND	ND	PASS
43	Black capacitor	PCB	ND	ND	ND	ND	ND	PASS
44	Black EC	PCB	ND	ND	ND	ND	ND	PASS
45	Green PCB	PCB	ND	ND	ND	ND	ND	PASS
46	Silvery metal solder	PCB	<500	ND	ND	ND	NA	PASS

Note / Key :

ND = Not detected ">" = Greater than "<" = Less than
NR = Not requested mg/kg = milligram(s) per kilogram = ppm = part(s) per million
Detection Limit: See Appendix. NA = Not applicable EX= Exempted

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.
- Only selected example(s) is (are) indicated on the photograph(s) in Comment.
- According to European Parliament and 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.

- For item 26:
  #According to Annex III of European Council Directive 2011/65/EU with Amendment (EU)2019/171, exemptions were granted a few materials and Clause 8(b) is reiterated here "Cadmium and its compounds in electrical contacts.". Test Item(s) was (were) claimed as is by client (received as is). Therefore, this (these) Test Item(s) containing the found cadmium level should be exempted.

TEST RESULT

Compliance Test - Phthalate Test – (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : Reference to IEC 62321-8: 2017.

Maximum Allowable Limit : 0.1% (Each)

Parameter	CAS No.	Unit	MDL	Result			
				2+3+4	8	13+14+15	16+17+18
Dibutyl phthalate (DBP)	84-74-2	%	0.005	ND	ND	ND	ND
Butyl benzyl phthalate (BBP)	85-68-7	%	0.005	ND	ND	ND	ND
Di-2-ethylhexyl phthalate (DEHP)	117-81-7	%	0.005	ND	ND	ND	ND
Diisobutyl phthalate (DIBP)	84-69-5	%	0.005	ND	ND	ND	ND
Conclusion	-	-	-	PASS	PASS	PASS	PASS

Parameter	CAS No.	Unit	MDL	Result			
				19	20+22+25	27+28	29+30
Dibutyl phthalate (DBP)	84-74-2	%	0.005	ND	ND	ND	ND
Butyl benzyl phthalate (BBP)	85-68-7	%	0.005	ND	ND	ND	ND
Di-2-ethylhexyl phthalate (DEHP)	117-81-7	%	0.005	ND	ND	ND	ND
Diisobutyl phthalate (DIBP)	84-69-5	%	0.005	ND	ND	ND	ND
Conclusion	-	-	-	PASS	PASS	PASS	PASS

Parameter	CAS No.	Unit	MDL	Result			
				31	32	33+36	34
Dibutyl phthalate (DBP)	84-74-2	%	0.005	ND	ND	ND	ND
Butyl benzyl phthalate (BBP)	85-68-7	%	0.005	ND	ND	ND	ND
Di-2-ethylhexyl phthalate (DEHP)	117-81-7	%	0.005	ND	ND	ND	ND
Diisobutyl phthalate (DIBP)	84-69-5	%	0.005	ND	ND	ND	ND
Conclusion	-	-	-	PASS	PASS	PASS	PASS

Parameter	CAS No.	Unit	MDL	Result		
				35	37+38	39+40+41
Dibutyl phthalate (DBP)	84-74-2	%	0.005	ND	ND	ND
Butyl benzyl phthalate (BBP)	85-68-7	%	0.005	ND	ND	ND
Di-2-ethylhexyl phthalate (DEHP)	117-81-7	%	0.005	ND	ND	ND
Diisobutyl phthalate (DIBP)	84-69-5	%	0.005	ND	ND	ND
Conclusion	-	-	-	PASS	PASS	PASS

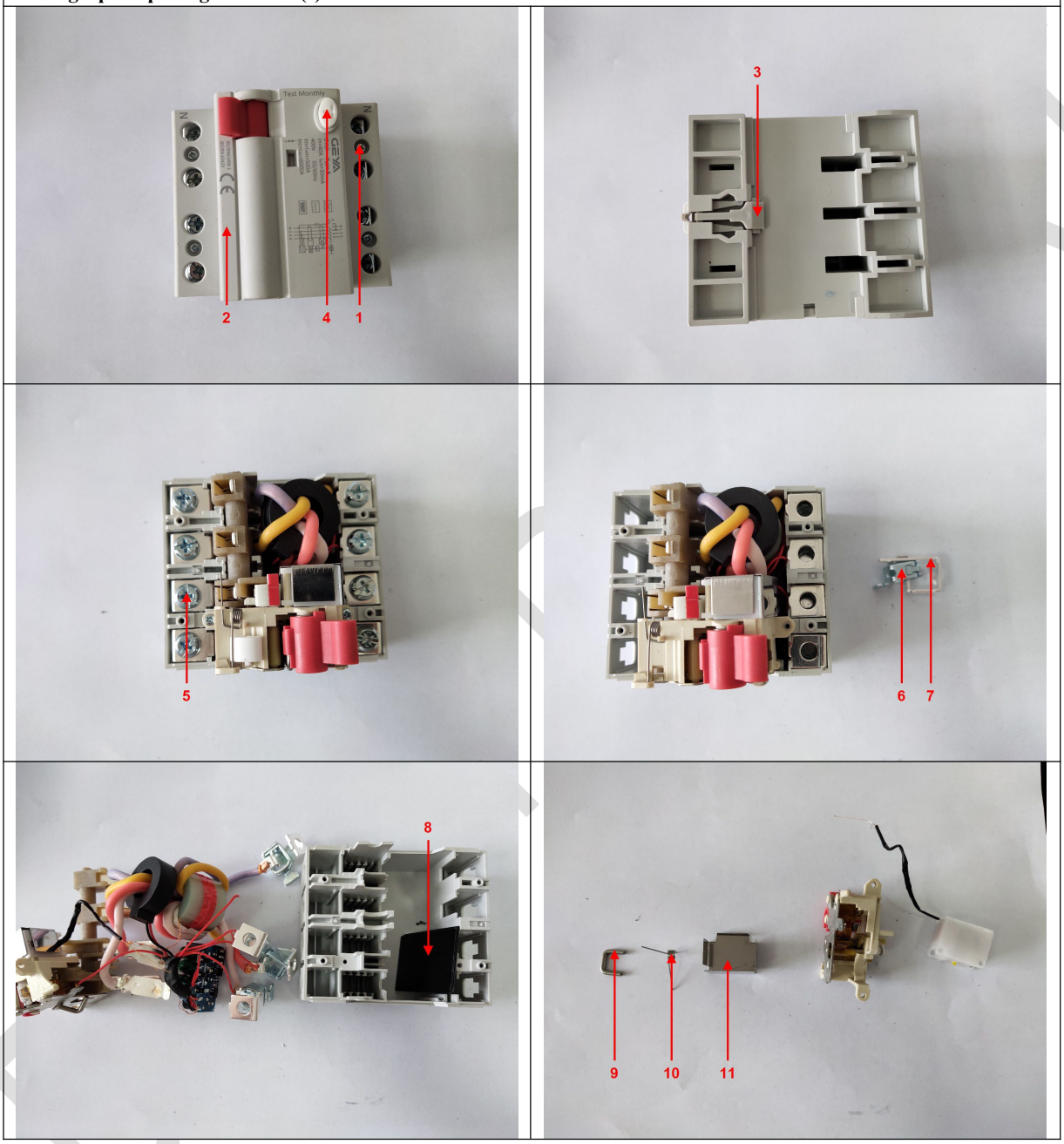
Parameter	CAS No.	Unit	MDL	Result
				43+44+45
Dibutyl phthalate (DBP)	84-74-2	%	0.005	ND
Butyl benzyl phthalate (BBP)	85-68-7	%	0.005	ND
Di-2-ethylhexyl phthalate (DEHP)	117-81-7	%	0.005	ND
Diisobutyl phthalate (DIBP)	84-69-5	%	0.005	ND
Conclusion	-	-	-	PASS

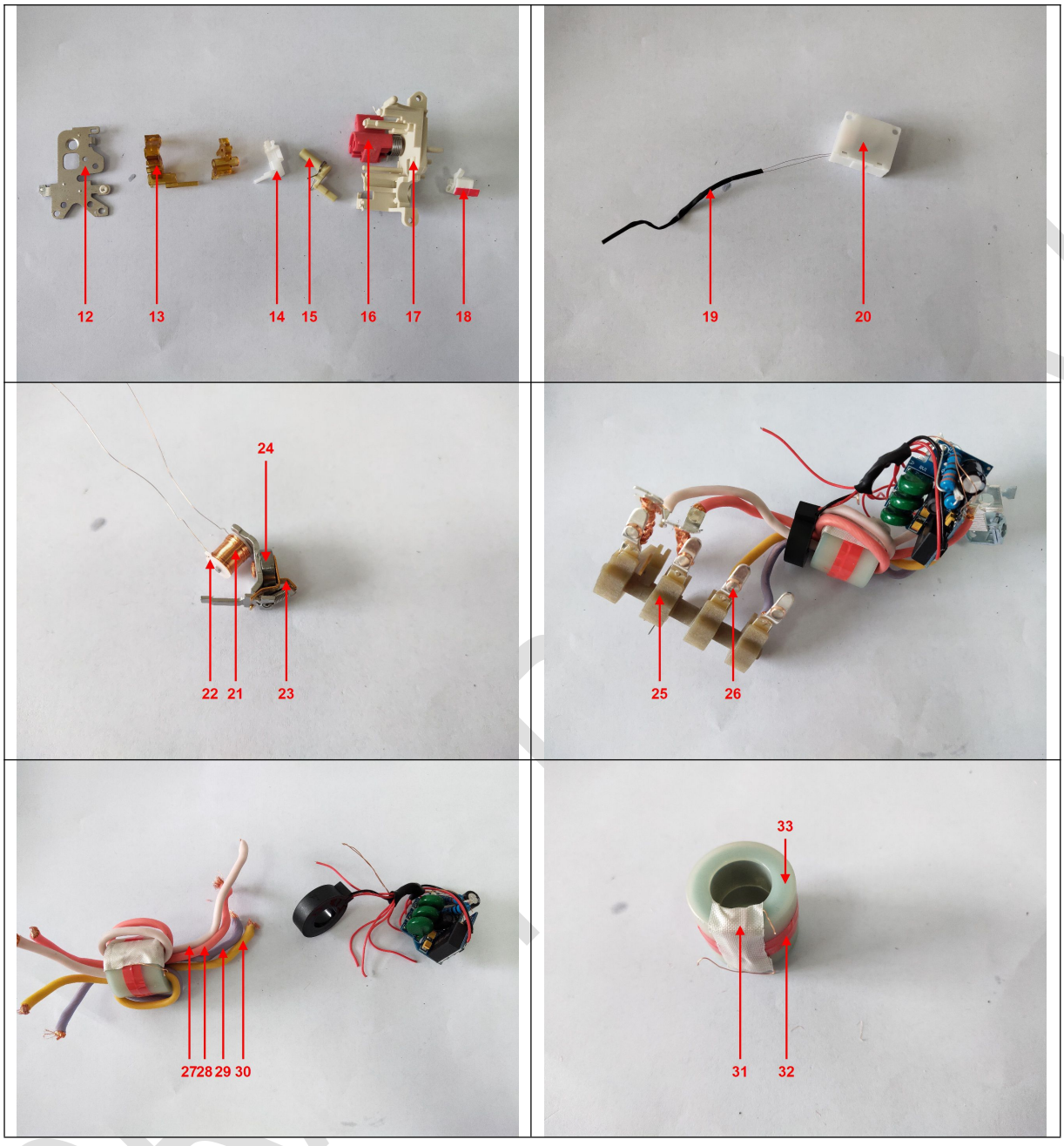
Note: mg/kg= milligram per kilogram % = percentage 1 mg/kg = 0.0001%
MDL = Method Detection Limit ND = Not Detected (< MDL) "-" = Not Regulated

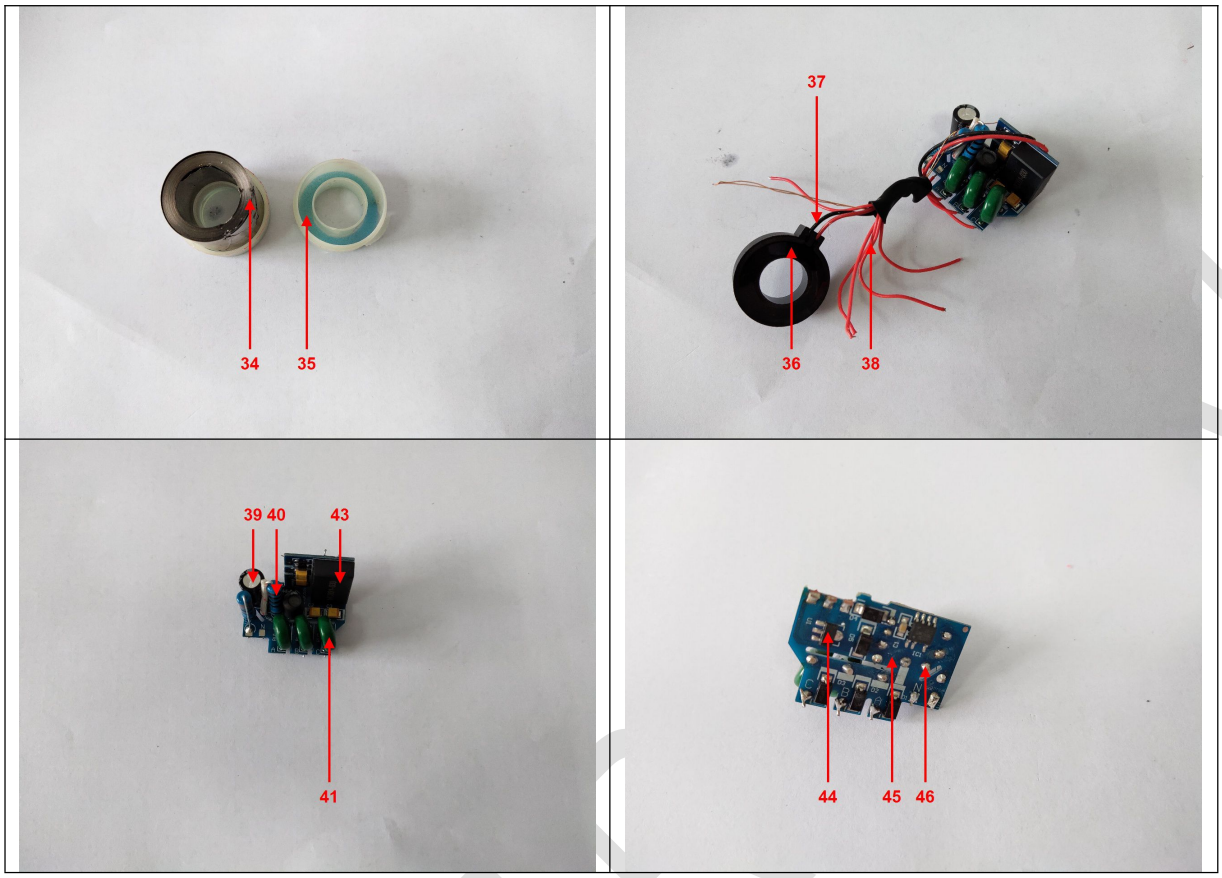
Comment :

Photograph(s) [Compliance Test for European Parliament and Council Directive 2011/65/EU] :

Photograph depicting Test Item(s)







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 Analyte(s)	Detection Limit (mg/kg)				Maximum Allowable Limit (mg/kg)
		X-ray fluorescence (XRF)[a]			Wet Chemistry	
		Plastic	Metallic / glass / ceramic	Others		
1	Lead (Pb)	100	200	200	10[b]	1 000
2	Cadmium (Cd)	50	50	50	10[b]	100
3	Mercury (Hg)	100	200	200	10[c]	1 000
4	Chromium (Cr)	100	200	200	NA	NA
5	Chromium VI (Cr VI)	NA	NA	NA	3[g, h] / 10[d] / See [e, i]	1 000 / Negative[i]
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 1 000
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 1 000

NA = Not applicable IEC = International Electrotechnical Commission

[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: 2013+AMD1: 2017 CSV.

[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: 2017.

[h] Other Than Metal, Leather, Polymers and Electronics - Test method with reference to International Standard ISO 17075: 2017.

[i] 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).

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)

END