



TEST REPORT

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DATE : June 21, 2024
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Applicant:

ZHEJIANG GEYA ELECTRICAL CO., LTD.

WENZHOU BRIDGE INDUSTRIAL ZONE, BEIBAIXIANG TOWN, YUEQING, ZHEJIANG, 325603 - CHINA

Date of Submission: 2024-5-17/2024-6-20
Test Period: 2024-5-17 to 2024-6-21
Sample Mode: Sample Presentation
BV EE Ref. No.: GYB-ESH-Q24051701-A0

Sample Description:	Sample(s) received is(are) stated to be: RCCB		
Manufacturer:	/	Buyer:	/
Style No(s):	GYL9 SERIES	PO No.:	/
Country of Origin:	/	Country of Destination:	Oversea Country

SUMMARY OF TEST RESULTS

TEST REQUESTED	CONCLUSION
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 Amendments (EU) 2015/863	PASS

Note: Testing as sample submitted by client, this test report is only responsible for the conformity of the tested items. The client is responsible for the representative and authenticity of the submitted samples.

REMARK

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

General enquiry and invoicing

Technical enquiry

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BUREAU VERITAS
CONSUMER PRODUCTS SERVICES DIVISION (SHANGHAI)

Laboratory Test Location:
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PREPARED BY :

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Photo of the Submitted Sample





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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 Amendments (EU) 2015/863

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	DBP	BBP	DEHP	DIBP	Conclusion
Unit			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
Test Item	Description	Location	-	-	-	-	-	-	-	-	-	-
1	Silvery metal	Housing	ND	ND	ND	ND	NA	NA	NA	NA	NA	PASS
2	Grey plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
3	Grey plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
4	Grey plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
5	Brown plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
6	Grey plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
7	White plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
8	Silvery metal	Inside	ND	ND	ND	ND	NA	NA	NA	NA	NA	PASS
9	Silvery metal solder		ND	ND	ND	ND	NA	NA	NA	NA	NA	PASS
10	Silvery metal		ND	ND	ND	Negative*	NA	NA	NA	NA	NA	PASS
11	Silvery metal		ND	ND	ND	Negative*	NA	NA	NA	NA	NA	PASS
12	Beige plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
13	Silvery metal		ND	ND	ND	Negative*	NA	NA	NA	NA	NA	PASS
14	Silvery metal		<500	ND	ND	Negative*	NA	NA	NA	NA	NA	PASS
15	Green plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
16	Yellow plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
17	Brown plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
18	Transparent plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
19	Brown plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
20	Coppery metal		ND	ND	ND	ND	NA	NA	NA	NA	NA	PASS
21	Silvery metal		ND	ND	ND	ND	NA	NA	NA	NA	NA	PASS
22	Coppery metal contact point with silvery plating ^{R1}		ND	ND	ND	ND	NA	NA	NA	NA	NA	PASS
23	White plastic		ND	ND	ND	ND	ND*	ND*	ND*	ND*	ND*	PASS
24	White plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
25	Silvery metal		ND	ND	ND	ND	NA	NA	NA	NA	NA	PASS
26	Silvery metal solder ^{R1}		ND	ND	ND	ND	NA	NA	NA	NA	NA	PASS
27	Silvery metal solder ^{R1}		ND	ND	ND	ND	NA	NA	NA	NA	NA	PASS
28	Yellow plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
29	Blue plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
30	Blue plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
31	White plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS



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-			Result									
Parameter			Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium VI (Cr VI)	PBBs & PBDEs	DBP	BBP	DEHP	DIBP	Conclusion
Unit			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
Test Item	Description	Location	-	-	-	-	-	-	-	-	-	-
32	Black plastic	Inside	ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
33	Blue plastic wire jacket	PCB	ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
34	Yellow plastic wire jacket		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
35	Red plastic wire jacket		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
36	Black plastic wire jacket		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
37	Red plastic wire jacket		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
38	Green plastic wire jacket		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
39	Black plastic wire jacket		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
40	Red plastic wire jacket		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
41	Brown plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
42	Black chip resistor		ND	ND	ND	ND*	NA	NA	NA	NA	NA	PASS
43	Black EC		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
44	Green PCB		ND	ND	ND	ND	ND*	ND*	ND*	ND*	ND*	PASS
45	Silvery metal solder		ND	ND	ND	ND	NA	NA	NA	NA	NA	PASS
46	Black plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
47	Green EC		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
48	Brown EC		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
49	Black magnet		ND	ND	ND	<500	NA	NA	NA	NA	NA	PASS
50	Brown capacitor		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
51	Black EC		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
52	Brown EC		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
53	Black EC		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
54	Brown capacitor		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
55	Green PCB		ND	ND	ND	ND	ND*	ND*	ND*	ND*	ND*	PASS
56	Silvery metal solder		ND	ND	ND	ND	NA	NA	NA	NA	NA	PASS

Note / Key :

ND = Not detected

NR = Not requested

Detection Limit: See Appendix.

“>” = Greater than

mg/kg = milligram(s) per kilogram = ppm = part(s) per million

NA = Not applicable

“<” = Less than

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.

R1=2024-6-20 Second Submission

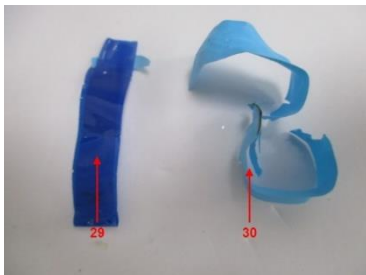
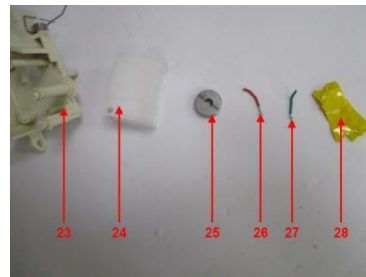
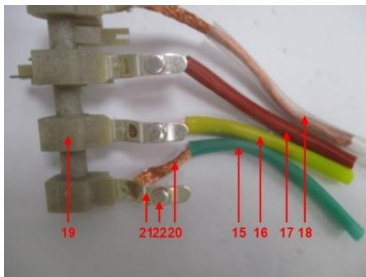
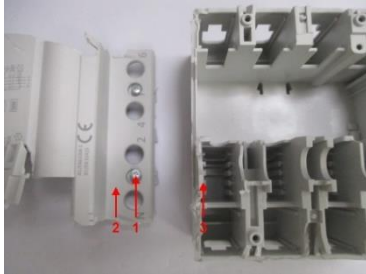


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Comment :

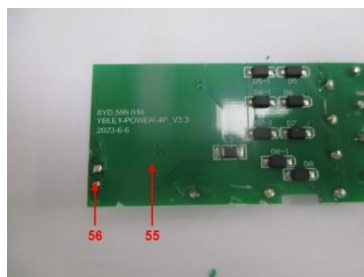
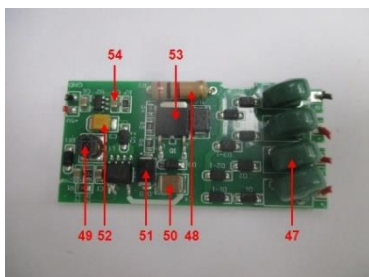
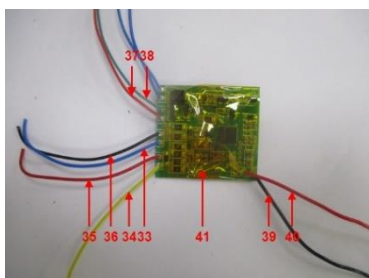
Photograph depicting Test Item(s)





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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 with its Amendments (EU) 2015/863] :						
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]	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] / See ^[e, i]	1000 / 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 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
9	Dibutyl phthalate (DBP) Butyl benzyl phthalate (BBP) Di-2-ethylhexyl phthalate (DEHP) Diisobutyl phthalate (DIBP)	NA	NA	NA	Each 500 ^[j]	Each 1000
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.					
[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).					
[j]	Test method with reference to International Standard IEC 62321-8: 2017					
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: 2021					
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 Safetv and Environment. (November 2005)					